



June 28, 2006

Reply to:

Donald T. Bartlett

The Lubrizol Corporation

29400 Lakeland Blvd.

Wickliffe, OH 44092

(440) 347-2388

(440) 347-2878 (FAX)

ASTM D02.B0.03 L-37 Surveillance Panel

Members and Guests:

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

- o June 21, 2006 L-37 Surveillance Panel Meeting conducted at the PRI Headquarters, Apollo Room, Warrendale, PA.

Please direct any corrections or comments to my attention.

Sincerely,

A handwritten signature in black ink that reads "Donald T. Bartlett".

Donald T. Bartlett, Chairman

L-37 Surveillance Panel

Attachments

The Lubrizol Corporation

29400 Lakeland Boulevard, Wickliffe, Ohio 44092-2298
Telephone: 440.943.4200 Facsimile: 440.943.5337

www.lubrizol.com

Report of Meeting
L-37 Surveillance Panel
PRI Headquarters, Apollo Room
Warrendale, PA
June 21, 2006

Sign-in/Review of Membership: The meeting was called to order at 3:00 pm. The sign-in sheet is *Attachment 1*. There were no requested changes in the membership list, See *Attachment 2*.

Motion 1 ⇒ Mr. Smith, Second ⇒ Mr. Rea -Approval of Surveillance Panel meeting minutes of May 9, 2006 as corrected. The motion passed unanimously with a vote count of 6, 0, 0. (Note: corrections have been posted on the TMC website)

Meeting Agenda

The meeting agenda is included as *Attachment 3*.

Summary of Action Items

None

Summary of Motions

Motion 1 ⇒ Mr. Smith, Second ⇒ Mr. Rea -Approval of Surveillance Panel meeting minutes of May 9, 2006 as corrected.

Motion 2 ⇒ Mr. Lind, Second ⇒ Mr. Sullivan: The panel directs the TMC to issue a memorandum documenting a request that any reference test hardware be kept for 1 year from end of test date with the understanding that the parts are to be made available to the TMC for other purposes (i.e., Gear Oil rating Calibration Workshop, etc) or other defined panel requirements/needs.

Motion 3 ⇒ Mr. Sullivan, Second ⇒ Mr. Koglin: To accept the RCMS targets as presented with an effective date of 6/21/2006.

Motion 4 ⇒ Mr. Gropp, Second ⇒ Mr Sullivan): For all distress categories, the panel requests the TMC to use this data to determine the magnitude of offset between the current and new targets and if the differences in means are statistically significant.

Summary of Meeting Discussions

➤ **Motion to Save Reference Tested Hardware for 1 Year** - TMC request from discussion started in the L-60-1 Panel meeting to save hardware for all L-tests.

Motion 2 ⇒ Mr. Lind, Second ⇒ Mr. Sullivan: The panel directs the TMC to issue a memorandum documenting a request that any reference test hardware be kept for 1 year from end of test date with the understanding that the parts are to be made available to the TMC for other purposes (i.e., Gear Oil rating Calibration Workshop, etc) or other defined panel requirements/needs. The motion passed unanimously with a vote count of 6, 0, 0

➤ **RCMS Pinion Target Updates - TMC**

The original test targets have never been updated since the Rater Calibration Monitoring System (RCMS) was implemented. The mean and standard deviation were originally set with n-sizes from 6 to 9 depending on the specific pinion number. The n-size has now increased from 15-28, again, depending on the specific pinion number. Mr. Lind summarized the data that is included as **Attachment 4**.

He pointed out that there is a large difference in wear distress with this being mostly attributed to a change in the wear definition made a couple years ago versus the wear definition in place at the beginning of the RCMS. The definition change was meant to standardize ratings.

Mr. Lind believes the raters are rating differently but more consistently since the wear rating definition was introduced. He also stated that the data shows an improvement in standard deviation. Mr. Gropp and Mr. Sullivan stated that the standard deviation for wear doesn't appear to reflect this. Mr. Lind reminded the Panel that it was a Panel decision instructing the TMC initially to use a larger k-value to widen the bands. If the panel wants the bands to be tighter, the k-value could be changed. Mr. Lind believes that the rating task force awareness discussions are making the process better.

Mr. Gropp stated that he doesn't necessarily have an issue with this. But philosophically, he believes the offset shift in the mean will create a continuing problem. In essence, the original pass/fail criterion was established long ago. Aren't we, essentially, with the adoption of this rater-offset change, changing/lowering the performance level to a lower number? He feels that the raters have changed their process and the panel should keep the initial targets at the historical level of severity or issue a correction factor. Mr. Sullivan stated that he agrees but this should be kept for a different discussion. Remember, the RCMS means and standard deviations are true reflections of the rater precision and repeatability.

Motion 3 ⇒ Mr. Sullivan, Second ⇒ Mr. Koglin: To accept the RCMS targets as presented with an effective date of 6/21/2006.

Discussion: Mr. Gropp stated that we need to take a serious look at the offset in how we are rating and should use this specific dataset to do that comparison. It was suggested that this could be a separate motion.

Motion Results: Pass

For: 6

Opposed: 0

Abstentions: 0

Motion 4 ⇒ Mr. Gropp, Second ⇒ Mr Sullivan): For all distress categories, the panel requests the TMC to use this data to determine the magnitude of offset between the current and new targets and if the differences in means are statistically significant.

Motion Results: Pass

For: 7

Opposed: 0

Abstentions: 1

➤ 2005 P4L792/V1L417 Non-Lubrited Gear Batch Consistent Rater Review

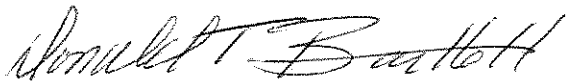
Based on a motion from the May 9, 2006 Panel meeting, an action item was for the labs to send the pinions from just the TMC 127 runs to the TMC and have the two "most consistent" RCMS raters rate them to confirm that the variability wasn't a cause of rating. The original test results and repeat ratings are included as *Attachment 5*. The repeat ratings show no significant differences between the original ratings (really most comparable) which suggests the variability was truly a source of the hardware or test operation and not the rating.

Mr. Lind again stated that he believes that the consistency is getting better with the ratings. He mention again that maybe we need to look at something different to determine if candidates are being affected by the observed severity in wear based on the change in the rating definition. He really believes that there is an influence by only a few raters and any industry correction factor wouldn't be applicable because it is not linear, rather, only around the 6, 7, and 8 distress level. He doesn't know how to correct this issue.

➤ 2006 Lubrited Gear Batch Update - The chairman reported that Dana has received all of the purchase orders and will soon be purchasing the heat of steel. See *Attachment 6*. It would appear that an October 2005 timeframe for production, assembly, and receipt of hardware is very likely. A 44-test matrix has been defined.

With a motion and second by Mr. Sullivan, Mr. Koglin, the meeting was adjourned at 3:57 pm.

Respectfully submitted,



Donald T. Bartlett

L-37 Surveillance Panel Chairman

ASTM L-37 Surveillance Panel Membership/Mailing List

Meeting Date: June 21, 2006


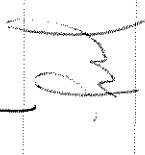



Initials*	Name	Voting Status	Company Name & Address	Phone/Email Info
<i>EA</i>	Akucewich, Ed	Non-Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-2415 Fax: 440-347-9011 E-Mail: esak@lubrizol.com
	Bartlett, Don	Voting/Chair	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-2388 Fax: 440-347-2878 E-Mail: dfb@lubrizol.com
<i>DEB</i>	Bell, Don	Non Voting	Afton Chemical 500 Spring Street Richmond, VA 23219	Phone: 804-788-6332 Fax: 804-788-6243 E-Mail: don.bell@afonchemical.com
	Bryson, Tom	Voting	Mack Trucks 13302 Pennsylvania Avenue Hagerstown, Maryland 21740	Phone: 301-790-6744 Fax: 301-790-5605 E-Mail: thomas.bryson@volvo.com
	Buitrago, Juan	Voting	Chevron Oronite Company 100 Chevron Way Richmond, California 94802	Phone: 510-242-1161 Fax: 510-242-3392 E-Mail: jabu@chevrontexaco.com
<i>RB</i>	Burrow, Robert	Non Voting	Afton Chemical 500 Spring Street Richmond, VA 23218	Phone: 804-788-6362 Fax: 804-788-6358 E-Mail: robert.burrow@afonchemical.com
<i>AE</i>	Chambers, Harold	Non-Voting	<i>Ford Motor Co, ATG Livonia</i> Visteon Corporation, 36200 Plymouth, Box 212 17000 Rotunda Drive, Cubes C290-84 Dearborn, MI 48120, Livonia, MI 48150	Phone: 313-755-4246 313-805-8591 Fax: hchamber@visteon.com E-Mail: hchamber@visteon.com
	Comfort, Allen	Voting	AMSTA-TR-D/210 Tank Automotive & Armament 6501 East 11 Mile road Warren, MI 48397-5000	Phone: 810-574-4225 Fax: 810-574-4244 E-Mail: comforta@tacom.army.mil
<i>AMK</i>	De La Fuente, Hector	Non Voting	Southwest Research Institute PO Drawer 28510 San Antonio, Texas 78228-0510	Phone: 586-522-5996 Fax: 210-684-7523 E-Mail: hdelafuente@swri.edu

* Initial to indicate attendance at subject meeting

Attachment
Page 8 of 5
Reference 4-37 SP

ASTM L-37 Surveillance Panel Membership/Mailing List

Meeting Date: June 21, 2006

Initials*	Name	Voting Status	Company Name & Address	Phone/Email Info
	Dharte, John	Voting	American Axle & Manufacturing 2965 Technology Drive Rochester Hills, MI 48309-3589 78228-0510	Phone: 248-299-6478 Fax: 248-293-6945 E-Mail: Dhartej@aam.com
	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
	Follis, Mike	Non Voting	Dana Corporation P.O. Box 955 Toledo, Ohio 43697	Phone: 419-887-3424 Fax: 419-887-5962 E-Mail: mike.follis@dana.com
	Gropp, Jerry	Non Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-1223 Fax: 440-347-1555 E-Mail: jlg@lubrizol.com
	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
	Kampe, Pete	Non-voting	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-4422 Fax: 440-347-2878 E-Mail: pvk@lubrizol.com
	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
	Koglin, Cory	Voting	Afton Chemical 500 Spring Street Richmond, VA 23218	Phone: 804-788-5305 Fax: 804-788-6358 E-Mail: Cory_Koglin@aftonchemical.com
	Kozlowski, Ralph	Non Voting	PARC Technical Services, Inc. 100 William Pitt Way Pittsburg, PA 15238	Phone: 412-826-5044 Fax: 412-826-5443 E-Mail:

* Initial to indicate attendance at subject meeting

Attachment 1
 Page 2 of 5
 Reference L-37 SP

ASTM L-37 Surveillance Panel Membership/Mailing List

Meeting Date: June 21, 2006

Initials*	Name	Voting Status	Company Name & Address	Phone/Email Info
	Kreinbring, Don	Voting	Dana Corporation 6938 Elm Valley Drive, Kalamazoo, MI 49009	Phone: 269-567-1140 Fax: 269-567-1140 E-Mail: don.kreinbring@dana.com
	Layton, Kevin	Non Voting	Aflon Chemical 500 Spring Street Richmond, VA 23218	Phone: 804-788-5363 Fax: 804-788-6358 E-Mail: Kevin_Layton@aflonchemical.com
<i>DML</i>	Lind, Don	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
	Linden, Jim	Voting	GM Research & Development 30500 Mound Rd. MC 480-106-160 Warren, MI 48090	Phone: 586-986-1888 Fax: 586-986-2094 E-Mail: James.L.Linden@GM.com
	Purnell, Keith	Non Voting	Performance Review Institute 161 Thornhill Rd. Warrendale, Pa. 15086-7527	Phone: 724-772-1616 ext 8182 Fax: 724-772-1699 E-Mail: kpurnell@sae.org
	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.edu
	Marougy, Thelma	Voting	Eaton Corporation 26201 Northwestern Highway Southfield, MI 48034	Phone: 248-226-6985 Fax: 248-226-2739 E-Mail: thelmaemarougy@eaton.com
	McGlone, Bruce	Voting	Meritor Automotive 2135 West Maple Troy, Michigan 48084	Phone: 248-435-9929 Fax: 248-435-1411 E-Mail: Bruce.McGlone@ArvinMeritor.com
	Miller, Kenny	Non Voting	Dana Corporation 1293 Glenway Drive Statesville, NC 28677	Phone: 704-878- Fax: 704-878-5735 E-Mail: Kenny.miller@dana.com

Attachment 1
 Page Page 3 of 5
 Reference 6-37-SP

* Initial to indicate attendance at subject meeting

ASTM L-37 Surveillance Panel Membership/Mailing List

Meeting Date: June 21, 2006

Initials*	Name	Voting Status	Company Name & Address	Phone/Email Info
	Radonich, Peter	Non Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-2184 Fax: 440-347-9011 E-Mail: pdr@lubrizol.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.edu
SR	Salvatore, Rea	Voting	Infinium USA, L.P. 1900 E. Linden Ave Linden, NJ 08066 78228-0510	Phone: 856-554-2094 Fax: 856-224-3613 E-Mail: salvatore.rea@infinium.com
	Schenkenbeger, Chris	Non Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-2927 Fax: 440-347-2878 E-Mail: csc@lubrizol.com
ABJ	Smith, Dale	Voting	PARC Technical Services, Inc. 100 William Pitt Way Pittsburgh, PA 15238	Phone: 412-826-5051 Fax: 412-826-5443 E-Mail: dsmith@parctech.com
	Sopko, Harry	Non Voting	PARC Technical Services, Inc. 100 William Pitt Way Pittsburgh, PA 15238	Phone: 412-826-5165 Fax: 412-826-5443 E-Mail: hsopko@parctech.com
US	Sullivan, Bill	Voting	ExxonMobil Chemical Company P. O. Box 3140 Edison, New Jersey 08818	Phone: 732-321-3354 Fax: 732-321-6064 E-Mail: william.t.sullivan@exxonmobil.com
	Tschirhart, Garland	Non Voting	Southwest Research Institute PO Drawer 28510 San Antonio, Texas 78228-0510	Phone: 210-522-3445 Fax: 210-680-1777 E-Mail: gtschirhart@swri.edu
	Vermilya, Denise	Non Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-4681 Fax: 440-347- E-Mail: drc@lubrizol.com

* Initial to indicate attendance at subject meeting

Attachment /
Page 4 of 5
Reference A375P

ASTM L-37 Surveillance Panel Membership/Mailing List

Meeting Date: June 21, 2006

Initials*	Name	Voting Status	Company Name & Address	Phone/Email Info
	Vettel, Paula	Voting	D. A. Stuart Company 4580 Weaver Parkway Warrenville, Illinois 60555	Phone: 630-393-8859 Fax: 630-393-8577 E-Mail: pvettel@dstuart.net
	Whitton, Claire	Non Voting	Afton Chemical PO Box 2158, 500 Spring St. Richmond, VA 23218	Phone: 804-788-5052 Fax: 804-788-6243 E-Mail: Claire_Whitton@afonchemical.com
	Yanchar, Paul	Non Voting	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-3474468 Fax: 440-347-9011 E-Mail: pjy@lubrizol.com
	Zakarian, Jack	Non Voting	Chevron Products 100 Chevron Way Richmond, CA 94802	Phone: 510-242-3595 Fax: 510-242-3758 E-Mail: jaza@chevron.com
				Phone: Fax: E-Mail:
				Phone: Fax: E-Mail:
				Phone: Fax: E-Mail:

Attachment 1
Page 5 of 5
Reference 13750

* Initial to indicate attendance at subject meeting

L-37 Surveillance Panel Voting Members

Donald Bartlett	The Lubrizol Corporation (Chairman)
Tom Bryson	Volvo Powertrain Corporation
Juan Buitrago	Chevron Oronite Company
Allen Comfort	AMSTA-TR-D/210 US Army Tacom-Tardec
John Dharte	American Axle & Manufacturing
Brian Koehler	Southwest Research Institute
Cory Koglin	Afton Chemical Company
Don Kreinbring	Dana Corporation
Don Lind	ASTM Test Monitoring Center
Jim Linden	GMR Research and Development
Thelma Marougy	Eaton Corporation
Bruce McGlone	ArvinMeritor Materials Engineering
Salvatore Rea	Infineum
Dale Smith	PARC Technical Services
William Sullivan	ExxonMobil Chemical Company
Paula Vettel	D.A. Stuart Company

Total 16 Voting Members

Attachment	<u>2</u>
Page	<u>1 of 1</u>
Reference	<u>L-375A</u>

L-37 Surveillance Panel
PRI/ Headquarters, Apollo Room - Warrendale, PA
June 21, 2006

AGENDA

- I. Call to Order & Membership Review
- II. Approval of May 9, 2006 Meeting Minutes
- III. RCMS Pinion Target Update Proposal – TMC
- IV. Review V1L417_RO127 Rater Comparison – TMC
- V. 2006 Lubrited Hardware Order Update
- VI. TMC 127 Replacement Oil Action Item
- VII. Request of the Gear Rating TF Update
- VIII. Adjournment

Attachment	<u>3</u>
Page	<u>1 of 1</u>
Reference	<u>L-37SP</u>

UPDATED L-37RC PINION TARGETS

PINION 2							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	9	6.6	0.67		19	5.9	1.01
Rippling		8.1	1.22			8.0	1.12
Ridging		8.4	0.67			8.6	0.67
Spitting		9.54	0.289			9.6	0.224

PINION 3							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	9	6.6	0.67		23	5.9	1.01
Rippling		6.4	0.67			6.8	0.89
Ridging		7.6	1.56			8.4	0.67
Spitting		9.86	0.067			9.88	0.089

PINION 6							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	9	6.2	0.89		18	5.8	0.89
Rippling		7.1	1.00			7.2	0.89
Ridging		6.1	1.00			6.3	0.78
Spitting		9.91	0.100			9.91	0.101

PINION 11							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	9	6.9	1.00		15	6.1	1.01
Rippling		6.9	1.00			6.4	0.67
Ridging		8.4	0.67			8.5	0.56
Spitting		9.58	0.133			9.60	0.112

Attachment	<u>4</u>
Page	<u>1065</u>
Reference	<u>L-37SP</u>

UPDATED L-37RC PINION TARGETS

PINION 21							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	9	6.0	1.11	22	5.6	0.67	
Rippling		9.2	0.89		8.8	0.89	
Ridging		8.2	0.89		8.4	0.67	
Spitting		8.0	1.00		8.1	1.01	

PINION 29							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	9	7.0	1.11	22	6.5	0.56	
Rippling		9.6	0.67		9.5	0.56	
Ridging		9.7	0.78		9.6	0.67	
Spitting		9.93	0.078		9.91	0.101	

PINION 30							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	9	7.0	1.00	22	6.1	1.01	
Rippling		3.9	1.00		4.6	0.67	
Ridging		8.9	1.00		9.1	1.01	
Spitting		9.87	0.144		9.89	0.101	

PINION 32							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	6	7.0	1.10	22	7.4	0.67	
Rippling		8.7	0.78		8.9	1.01	
Ridging		9.7	0.78		9.5	0.56	
Spitting		9.91	0.100		9.89	.101	

Attachment
 Page 265
 Ref L-37.51

UPDATED L-37RC PINION TARGETS

PINION 38							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	6	6.7	0.78		15	6.4	0.67
Rippling		9.2	0.89			9.1	1.01
Ridging		7.3	0.78			7.1	1.01
Spitting		9.92	0.089			9.91	0.101

PINION 46							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	6	6.8	0.89		27	6.4	0.67
Rippling		3.8	0.89			4.8	0.89
Ridging		9.2	0.89			9.1	1.01
Spitting		9.95	0.056			9.92	0.089

PINION 50							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	6	6.8	0.92		21	6.6	0.67
Rippling		9.2	0.92			9.6	0.67
Ridging		7.7	0.74			8.4	0.67
Spitting		9.9	0.111			9.91	0.101

PINION 51							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	6	7.2	0.92		22	7.1	1.01
Rippling		8.2	1.33			8.7	0.78
Ridging		9.3	0.74			9.7	0.78
Spitting		9.90	0.111			9.9	0.110

Attachment

Page

Reference

4
315
L-3759

UPDATED L-37RC PINION TARGETS

PINION 10							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	9	5.7	0.78		18	5.6	0.67
Rippling		5.9	1.00			6.2	0.89
Ridging		8.3	0.78			8.4	0.67
Spitting		9.86	0.067			9.86	0.067

PINION 14							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	9	6.7	0.78		28	5.9	1.01
Rippling		9.0	1.11			8.5	0.56
Ridging		6.7	1.44			6.5	0.56
Spitting		9.86	0.067			9.88	0.089

PINION 22							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	9	7.3	0.78		17	6.4	0.67
Rippling		9.0	1.00			8.9	1.01
Ridging		8.9	1.11			9.1	1.01
Spitting		9.90	0.100			9.88	0.089

PINION 36							
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	6	6.2	0.89		22	6.1	1.01
Rippling		9.3	0.78			9.4	0.67
Ridging		9.3	0.78			9.1	1.01
Spitting		9.92	0.089			9.91	0.101

Attachment	<u>4</u>
Page	<u>405</u>
Reference	<u>L-37</u>

UPDATED L-37RC PINION TARGETS

	PINION 40						
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	6	6.3	0.78		28	6.2	0.89
Rippling		9.2	0.89			8.9	1.01
Ridging		5.8	0.89			5.8	0.89
Spitting		9.90	0.110			9.89	0.101

	PINION 52						
PARAMETER	CURRENT				NEW		
	N	MEAN	S.D.		N	MEAN	S.D.
Wear	6	5.7	0.74		20	6.1	1.01
Rippling		8.5	0.82			8.8	0.89
Ridging		5.0	1.11			5.4	0.67
Spitting		9.88	0.110			9.90	0.110

Attachment	<u>4</u>
Page	<u>545</u>
Reference	<u>L-37</u>

V1L417/P4L792 Non-lubrited Hardware Reference Oil 127 Matrix Test Results

CMIR 49503 Pinion A				
Parameter		Original	Rater A	Rater B
Wear		8	8	8
Rippling		8	7	7
Ridging		9	9	9
Spitting		9.9	9.9	9.9

CMIR 44289 Pinion B				
Parameter		Original	Rater A	Rater B
Wear		8	8	8
Rippling		7	8	7
Ridging		9	9	9
Spitting		9.7	9.8	9.7

CMIR 46001 Pinion C				
Parameter		Original	Rater A	Rater B
Wear		6	6	6
Rippling		8	8	7
Ridging		4	4	4
Spitting		9.5	9.5	9.5

CMIR 49554 Pinion D				
Parameter		Original	Rater A	Rater B
Wear		7	7	7
Rippling		5	5	5
Ridging		9	9	9
Spitting		9.7	9.8	9.8

Attachment	<u>5</u>
Page	<u>161</u>
Reference	<u>A-375P</u>

2006 Lubrified Hardware Order

<input type="checkbox"/> Afton	275
<input type="checkbox"/> Parc	220
<input type="checkbox"/> SwRI	275
<input type="checkbox"/> Lubrizol	300
Total	<u>1070</u>

- Binding PO's Presented May 31, 2006.
- Chairman's letter to the panel and Dana facility representatives on June 3rd.
- Panel requests visit to Ft. Wayne at time of production. Yes
- Panel requests visit to Lugoff at time of assembly. Yes
- Don Kreinbring, Dana ASTM representative to keep Panel and Dana Facility representatives (see distribution of Chairman's June 3rd letter as the hardware progresses.

Attachment	<u>6</u>
Page	<u>10/1</u>
Reference	<u>L37 SP</u>