INTERNATIONAL
Standards Worldwide

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

Phone 610.832.9500
Fax 610.832.9555
e-mail service@astm.org
Web www.astm.org

Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS

May 23, 2007

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:

- **May 3, 2007 L-37 Surveillance Panel Teleconference Meeting**

Please direct any corrections or comments to my attention.

Sincerely,

Donald T. Bartlett

Donald T. Bartlett, Chairman
L-37 Surveillance Panel
Attachments

Report of Meeting
L-37 Hardware Task Force
(tagged onto the end of L-42 Panel TC)
May 3, 2007 11:00 EDT

I. Attendees:

ASTM TMC:	**Don Lind**	Ethyl Corp:	**Cory Koglin**
Lubrizol Corp:	**Don Bartlett**	Lubrizol Corp:	**Jerry Gropp**
Dana Corp:	**Don Kreinbring**	SwRI:	**Brian Koehler**
PARC:	**Dale Smith**	Dana Corp:	**Derek Ottley**
Dana Corp:	**Kenny Miller**	Dana Corp:	**Steve Bird**
Lubrizol Corp:	**Chris Prengaman**	Infineum:	**Steve Eliot**
SwRI:	**Chris Barker**		

II. Agenda:

- Update on testing and projected completion status of one TMC 127 and TMC 155 run at each lab.
- Update panel on the Length of contact pattern distribution within the axles and discussion update by Dana. See attached document provided by Kenny Miller for review before the meeting.
- Consider possible / slight modification of the hardware approval matrix testing.
- Target next SP teleconference call for ?

III. Summary of Panel Discussion, Consensus Actions, and Motions:

1. The four labs agreed to complete their part of the phase 1 matrix tests (1 run on TMC 127 and 1 run on TMC 155) and report the data to the TMC by Tuesday, May 8th. Lubrizol has completed both runs with success, Afton successfully completed their 127 run, the TMC 127 run at SwRI was in progress and Intertek was starting their TMC 127 run over the weekend. The 155 runs will follow immediately at the labs. TMC will provide a summary for the panel to decide if we proceed with the rest of the matrix.
2. With respect to the 2006 lubrited hardware batch, we confirmed that Dana built 170 units with L1 contact patterns (procedure calls for a length pattern of only L2 or L3). Dana indicated that there was good technical discussion of the process Dana used, differences of interpretation of contact patterns, and a thorough review of the FEA report submitted by Kenny Miller that was previously attached for panel review. See ***Attachment # 1.***

3. Other participant comments:

Miller: The flank position affects the stresses more than the length. Agreements from our discussions were:
Bird: Return the L1 labeled axles to Dana and let Dana reconfirm them/build to L2/L3 and
Koglin: Let's test the L1 axles up front.
return axles.
Bartlett: To return the L1 axles, Labs would incur the cost of moving axle pallets to a safe area with a chain fall, complete disassembly the pallets, ID axles to be removed, reassemble the pallets to rack specifications, ship the axles, return/transfer the 'in spec' axles back to the warehouse, and when the L1 axles come back would that not be considered a modification and not the same as the L2/L3 axles were are matrix testing?
Bird: Dana would be willing to help with testing $ for additional testing.
Koehler: Asked if Dana should provide a new Part Number for each axle order, maybe simplify the identification processes within Dana.
Koglin: We could reduce the labs invoice amount for this axle order per an agreed amount.

Final Agreements:

1. The initial 44-test matrix would not be conducted on any axles with L1 pattern contacts. All axles chosen at random across all the pallets received must meet the procedure requirements.

2. Mr. Gropp motioned/second by Mr. Koglin, that at the completion of the initial 11-test matrix in each lab, each lab would then:
   - Conduct two additional Standard reference tests using an axle with L1 contact patterns (one on oil TMC 152 and one on oil TMS 155).
   - **The motion was tabled to the May 10th** teleconference to provide Dana time to discuss their funding options with their accounting group. It was the general opinion of the group that the additional costs of these 8 tests should not be at the expense of the labs.
   - Surprises are not good when changes to established and documented processes happen unless adequate communication of such is up front. The chairman asked Dana to look at their internal documentation process to determine if there are other notification options to the panel when changes are made to production and assembly processes.

4. **We decided to lock in Thursday, May 10th at 2:00 pm EDT** for our next SP teleconference call. The call in information is 1-608-250-0194, code 324160

Respectfully submitted:

Donald T. Bartlett

Donald T. Bartlett
L-37 Surveillance Panel Chairman

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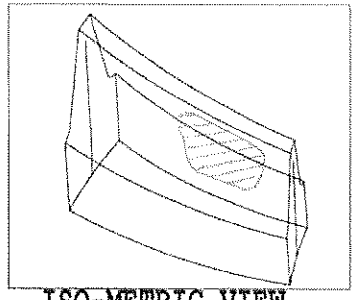


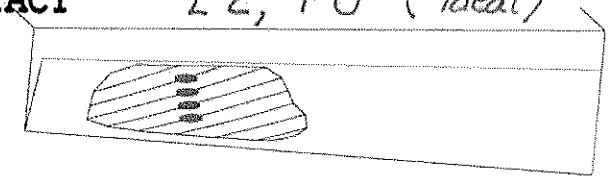
ISO-METRIC VIEW

GEAR FLANK
• PATH OF CONTACT

BENCH CONTACT

L 2, F0 (ideal)

TOE END



HEEL END

GEAR TIP

Attachment 1
Page 10 of 9
Reference L-37

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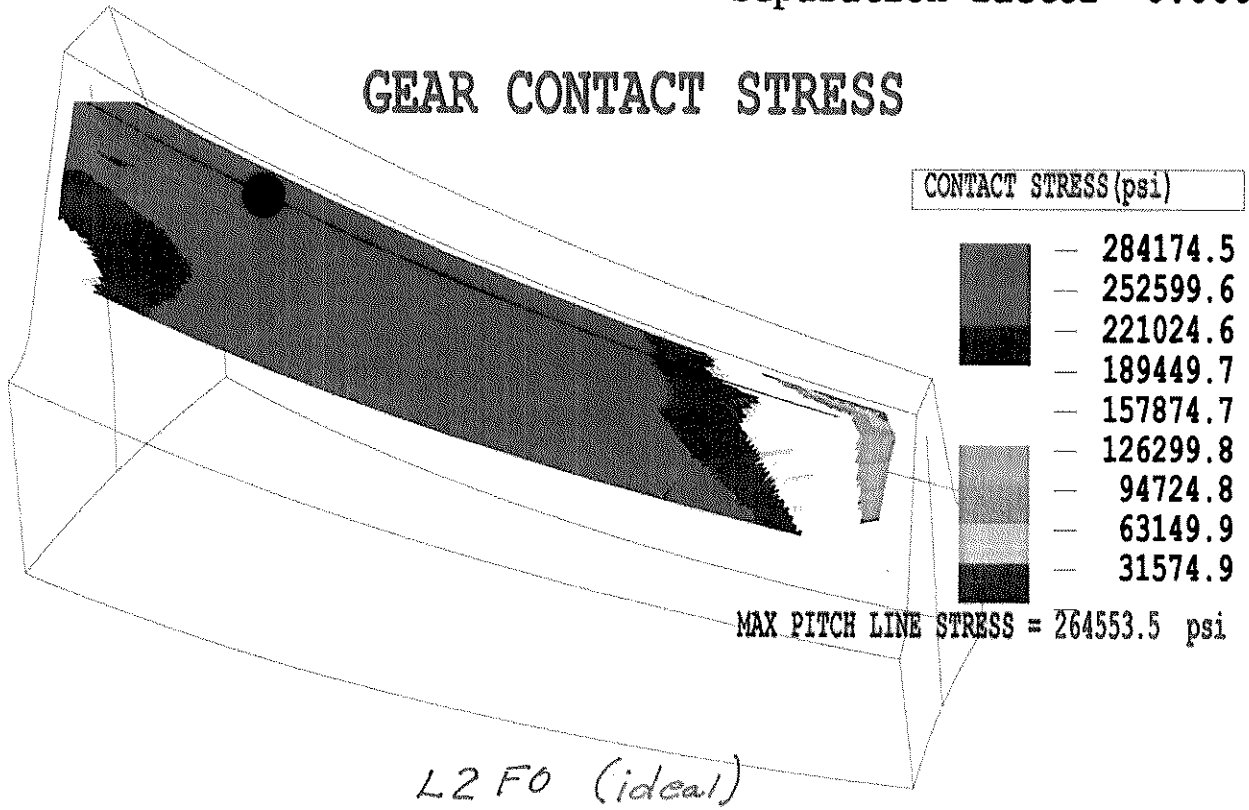

L2 F0 (ideal)

Attachment 1
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Reference L-37

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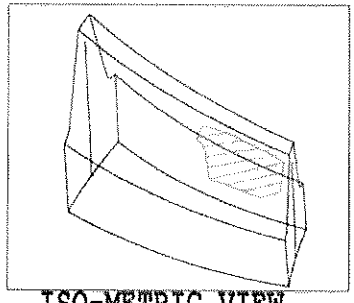


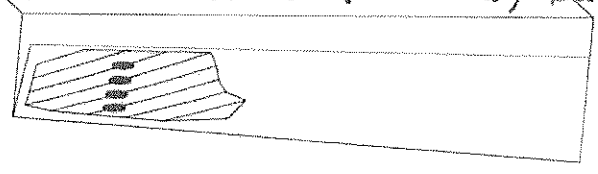
ISO-METRIC VIEW

GEAR FLANK
• PATH OF CONTACT

BENCH CONTACT

LIFO (blocked / bunched)

TOE END



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GEAR TIP

Attachment 1
Page 3 of 9
Reference L-37

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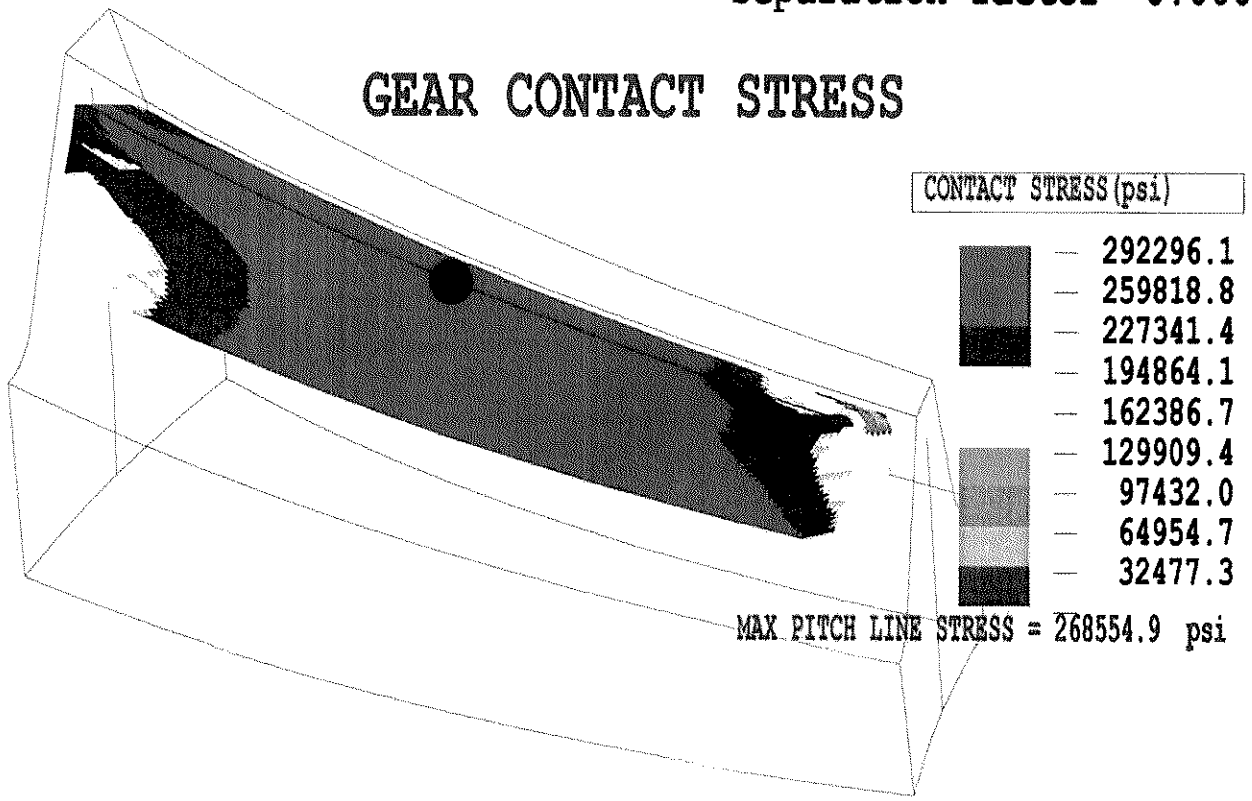

LIFO (blocked / bunched)

Attachment 1
Page 4 of 9
Reference 1-37

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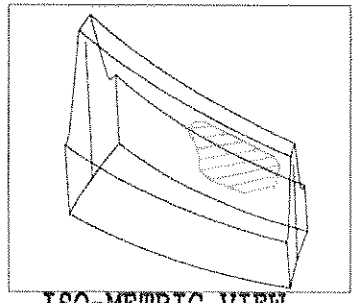


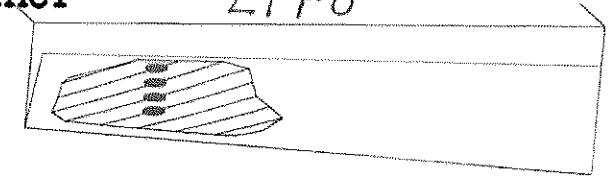
ISO-METRIC VIEW

GEAR FLANK
• PATH OF CONTACT

BENCH CONTACT

LIFO

TOE END



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GEAR TIP

Attachment 1
Page 5 of 9
Reference 4-37

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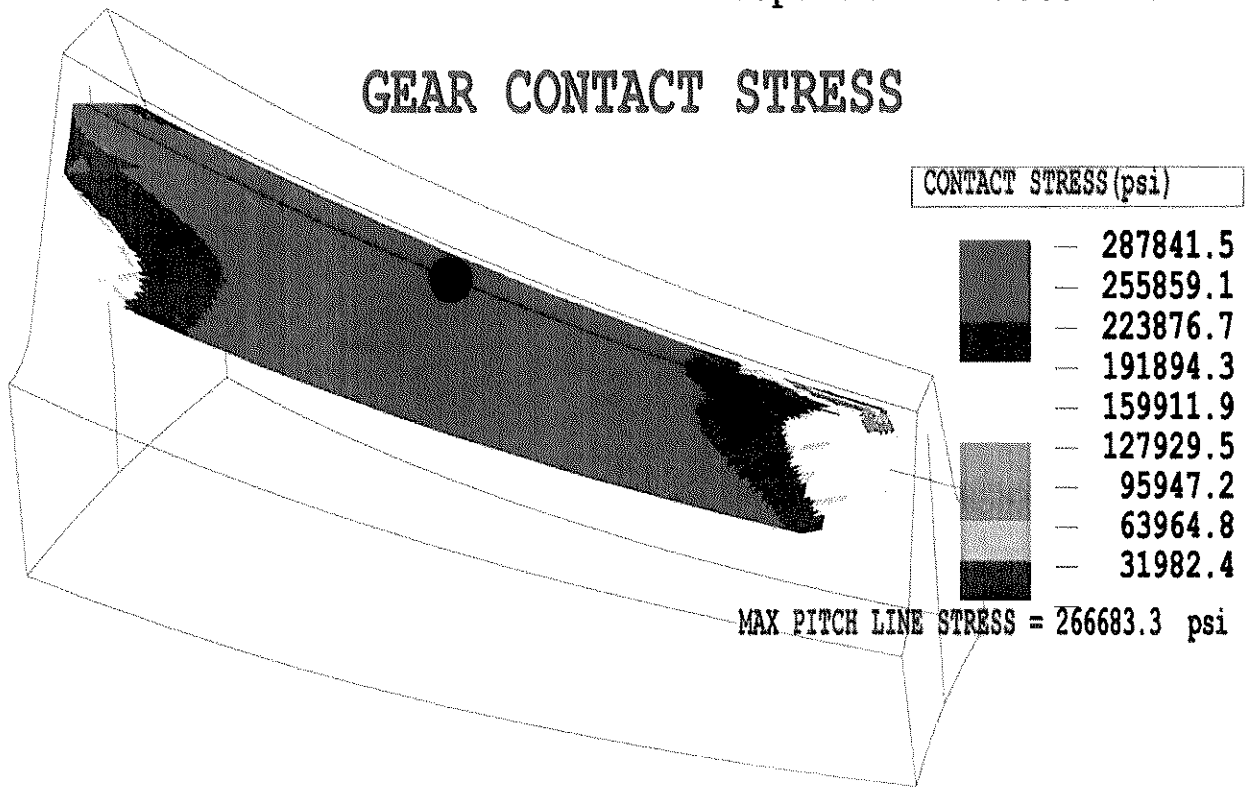

LIFO

Attachment 1
Page 6 of 9
Reference 4-37

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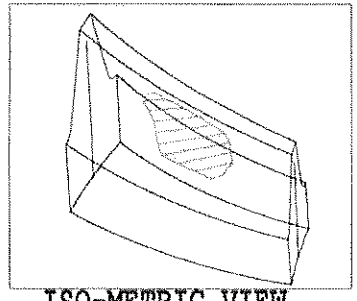


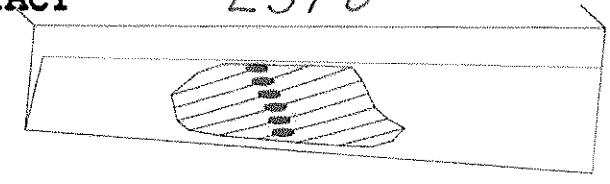
ISO-METRIC VIEW

GEAR FLANK
• PATH OF CONTACT

BENCH CONTACT

L3F0

TOE END



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GEAR TIP

Attachment 1
Page 7-69
Reference L-37

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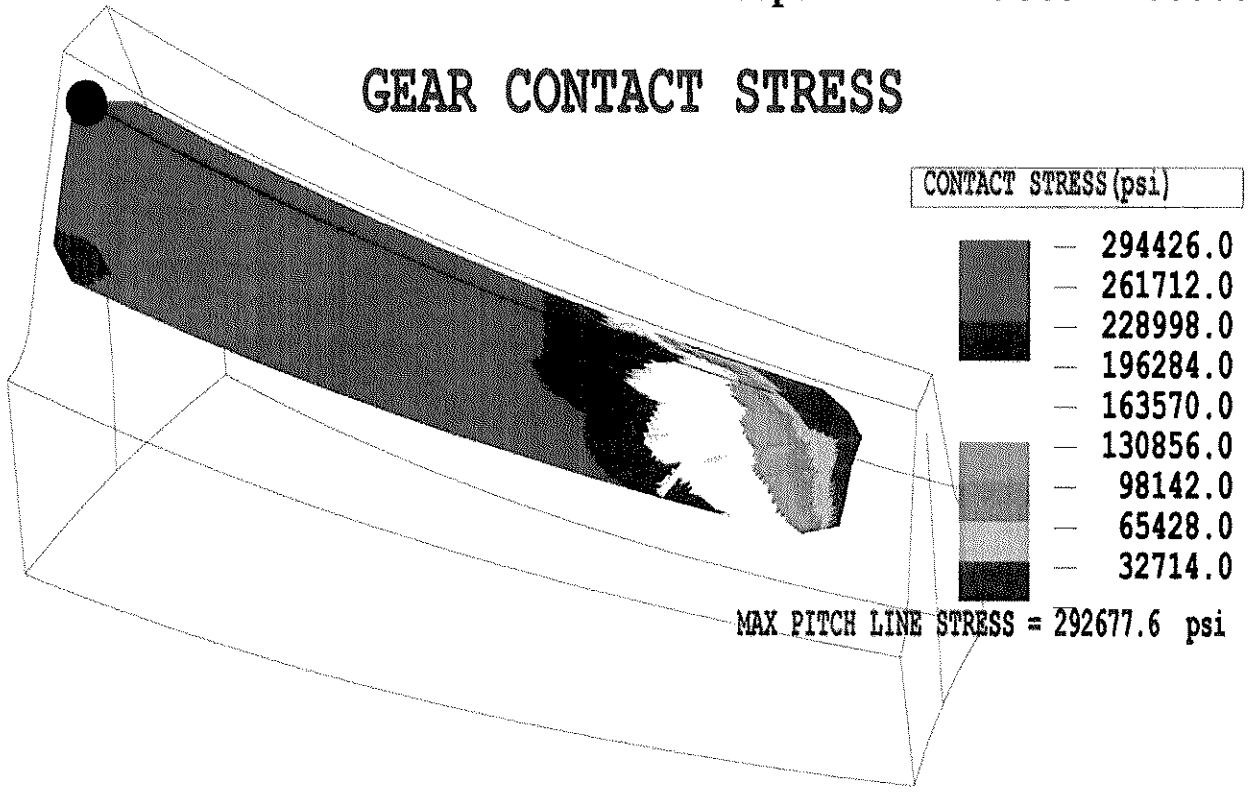

L3EO

Attachment 1
Page 8 of 9
Reference L-37

L-37, 5.86:1 Contact Pattern Lengthwise Position Change Effect on Stress

FEA Summary

Pattern Postion	Contact Stress (maximum)	Percent Change
L2, F0	284,175	baseline
blocked / bunched at toe	292,296	102.86%
L1, F0	287,842	101.29%
L3, F0	294,426	103.61%