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Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS

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June 12, 2009

Reply to:
Rick Graziano
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(440) 347-2058
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ASTM D02.B0.03 L-60-1 Surveillance Panel
Members and Guests:

Attached for your review and comment are the unconfirmed minutes of the May 13, 2009 L-60-1 Surveillance Panel meetings held at the U.S. Army TACOM facility in Warren, MI. They have been updated, as of 6/12/09, to reflect the approval of the L-60-1 Gear Case Assembly drawings which were corrected as directed. Please direct any corrections or comments to my attention.

Sincerely,

Rick Graziano
Chairman
L-60-1 Surveillance Panel

Attachments

**Report of Meeting
L-60-1 Surveillance Panel
TACOM- Main Conference Room #210, Warren, MI
May 13, 2009**

Sign-in/Review of Membership: The meeting was called to order at 9:00 a.m. The sign-in sheet is included as **Attachment # 1**. A review of membership was performed. Membership list to be updated as Allen Comfort from RDTA-PD/MS10 US Army has replaced Rachel Augusti as SP voting member. '6' voting members present.

Review of Meeting Agenda

The meeting agenda is included as **attachment # 2**.

Approval of minutes

- February 11, 2009 L-60-1 Surveillance Panel Meeting

Motion 1 ⇒ -Motion by Mr. Smith/Second Mr. Koglin, minutes approved as written unanimously with no abstentions. Vote 6-0-0.

Summary of Meeting Discussions

Rating experiment planned for summer workshop

See PowerPoint attachment (new rating experiment procedure) for details as **attachment # 3**.

The next Rater workshop is scheduled at Lubrizol the week of July 20th. The new rating experiment procedure will be used at this workshop.

Mr. Lind – each rater should use this procedure at a workshop at least twice.

The experiment can take up to 3-4 workshops before every rater has used the new procedure.

D5704, Figure A2.1 in Section 6.1.15 assembly drawing

See PowerPoint attachment for details as **attachment # 3**.

Rick Graziano reviewed the current drawing and the updated drawing.

Updated drawing needs to be corrected. The small gear is identified as '26' in drawing and should be changed to "31".

The panel would like to see the part numbers referenced in the drawing (V-ring).

Overall the panel likes the updated drawing. Mr. Gropp asked if we should take a motion to approve the updated drawings.

Motion 2 ⇒ - Motion by Mr. Koglin /Second by Mr. Koehler, to accept updated drawing with editorial change. Vote 6-0-0.

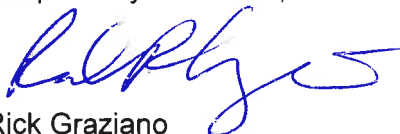
Chairman's comments: The drawing has been updated to include the corrections discussed at the meeting; they have been reviewed and have been approved as of 6/12/09.

New Business

None

Motion 3 ⇒ Motion for meeting adjournment by Mr. Lind/Second by Mr. Koehler. The meeting was adjourned at 9:30a.m.

Respectfully submitted,



Rick Graziano
L-60-1 Surveillance Panel Chairman

ASTM L-60-1 Surveillance Panel Membership/Mailing List

Meeting Date: February 11, 2009

Initials*	Name	Voting Status	Company Name & Address	Phone & Fax & E-Mail
	Anderson, Greg	Non-voting	Falex Corporation 1020 Airpark Drive Sugar Grove, Illinois 60554-9585	Phone: 630-556-3669 Fax: 630-556-3679 E-Mail:
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	Chambers, Harold	Non-voting	43945 Merrill Rd. Sterling Hts., MI 48314	Phone: (586) 770-4694 Fax: E-Mail: haroldchambers@gmail.com

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* Initial to indicate attendance at subject meeting

ASTM L-60-1 Surveillance Panel Membership/Mailing List

Meeting Date: February 11, 2009

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	Fett, Gregory	Voting	DANA, P.O. Box 955 Toledo, Ohio 43697 3939 Technology Drive Maumee, Ohio 43537	Phone: (419) 887-3296 Fax: E-Mail: greg.fett@dana.com

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ASTM L-60-1 Surveillance Panel Membership/Mailing List

Meeting Date: February 11, 2009




Initials*	Name	Voting Status	Company Name & Address	Phone & Fax & E-Mail
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	Guzikowski, Joe	Non-voting	DANA P.O. Box 955 Toledo, Ohio 43697 3939 Technology Drive Maumee, Ohio 43537	Phone: 419-887-3425 Fax: E-Mail: joe.guzikowski@dana.com
	Haire, Mike	Voting	Chevron 100 Chevron Way Richmond, California, 94802	Phone: 510-242-2740 Fax: 804-788-6358 E-Mail: mhaire@chevron.com
<i>SH</i>	Higuchi, Sam	Non-voting	Afton Chemical Corporation 500 Spring Street Richmond, Virginia 23219	Phone: 804-788-5375 Fax: 804-788-6358 E-Mail: samuel.higuchi@aftonchemical.com

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ASTM L-60-1 Surveillance Panel Membership/Mailing List

Meeting Date: February 11, 2009


Initials*	Name	Voting Status	Company Name & Address	Phone & Fax & E-Mail
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	Koehler, Brian	Voting	Southwest Research Institute Road Bldg.209 San Antonio, TX. 78238-5166	Phone: (210) 522-3588 Fax: (210) 684-7523 E-Mail: bkoehler@swri.org
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	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
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ASTM L-60-1 Surveillance Panel Membership/Mailing List

Meeting Date: February 11, 2009

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	Smith, Dale	Voting Non-voting	Parc Technical Services Inc. 100 William Pitt Way Pittsburgh, Pennsylvania 15238	Phone: 412-423-1120 X 403 Fax: 412-826-5444 E-Mail: Dale.Smith@intertek.com
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ASTM L-60-1 Surveillance Panel Membership/Mailing List

Meeting Date: February 11, 2009

Initials*	Name	Voting Status	Company Name & Address	Phone & Fax & E-Mail
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	Villahermosa, Luis	Non-voting	AMSTA-TR-D/210 (Luis Villahermosa) U S Army Tank, Automotive, and Armament Command Warren, Michigan 48397-5000	Phone: 586-574-4207 Fax: 586-574-4123 E-Mail: villahel@cc.tacom.army.mil
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	Mr. Wen Tung Lu	Non-voting	Research Institute of Petroleum (RIPP) No. 18 Xue Yuan Rd. PO Box 914-19 Beijing, China	Phone: 011-86-10-8236-8182 Fax: 011-86-139-1117-7663 E-Mail: luwt@ripp-sinopec.com

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ASTM L-60-1 Surveillance Panel Membership/Mailing List

Meeting Date: February 11, 2009

Initials*	Name	Voting Status	Company Name & Address	Phone & Fax & E-Mail
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Pontiac Powertrain

Juan.Pett@gm.com

John Dharte Non

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* Initial to indicate attendance at subject meeting

L-60-1 Surveillance Panel

May 13, 2009

9:00 a.m. – 10:00 a.m.

TACOM- Main Conference Room #210 – Warren, MI

Agenda

- I. Call to order
- II. Membership and agenda review
- III. Approval of meeting minutes
 - February 11, 2009
- IV. Rating experiment planned for winter rating workshop
 - TMC to update panel on upcoming Rater Workshop
- V. Updating figure A2.1 of the D5704
 - RPG to discuss update to figure A2.1
- VI. New Business
- VII. Adjournment

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L-60-1 Surveillance Panel Meeting
May 13, 2009
9:00 a.m. – 10:00 a.m.
TACOM- Main Conference Room #210 – Warren, MI

L-60-1 Surveillance Panel
May 13, 2009
9:00 a.m. – 10:00 a.m.
TACOM- Main Conference Room #210– Warren, MI

Agenda

- I. Call to Order
- II. Agenda and Membership Review
- III. Approval of Meeting Minutes
 - February 11, 2009
- IV. Rating Experiment - Rating Workshop
 - TMC to update panel on upcoming rater workshop
- V. Updating figure A2.1 of the D5704
- VI. New Business
- VII. Adjournment

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L-60-1 Surveillance Panel Voting Members

Rick Graziano	The Lubrizol Corporation (Chairman)
Rachel Agusti	AMSTA-TR-D/210 US Army
Tom Bryson	Volvo Power Train Corporation
Greg Fett	Dana Corporation
Mike Haire	Chevron Global Lubricants
Brian Koehler	Southwest Research Institute
Cory Koglin	Afton Chemical Company
Don Lind	ASTM Test Monitoring Center
Thelma Marougy	Eaton Corporation
Bruce McGlone	ArvinMeritor Materials Engineering
Paula Vettel	D.A. Stuart Company

Total 11 Voting Members

3

L-60-1 Surveillance Panel

May 13, 2009

9:00 a.m. – 10:00 a.m.

TACOM- Main Conference Room – Warren, MI

Agenda

- I. Call to Order
- II. Agenda and Membership Review
- III. **Approval of Meeting Minutes**
 - February 11, 2009
- IV. Rating Experiment - Rating Workshop
 - TMC to update panel on upcoming rater workshop
- V. Updating figure A2.1 of the D5704
- VI. New Business
- VII. Adjournment

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L-60-1 Surveillance Panel
May 13, 2009
9:00 a.m. – 10:00 a.m.
TACOM- Main Conference Room #210– Warren, MI

Agenda

- I. Call to Order
- II. Agenda and Membership Review
- III. Approval of Meeting Minutes
 - February 11, 2009
- IV. **Rating Experiment - Rating Workshop**
 - TMC to update panel on upcoming rater workshop
- V. Updating figure A2.1 of the D5704
- VI. New Business
- VII. Adjournment

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Rating Experiment Planned for Winter Rating Workshop

- Purpose of experiment is to test a refinement to the L-60-1 ACV rating procedure
- The process was initially developed at the summer workshop
- Surveillance Panel approved a motion on 8/13/08 to conduct a round robin type evaluation by cycling reference gears from lab to lab
- All raters are encouraged to participate but only the values generated by the high volume raters will be used to gauge the effectiveness

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Reference	<u>L-60-1</u>
	<u>S-13-08</u>

Rating Experiment Planned for Winter Rating Workshop

- Lubrizol drafted the rating procedure and a 9/25/08 SP teleconference was held to discuss details
- The major improvement involves orienting the gear at a fixed position relative to the light making any adjustments from a horizontal position while rating (see next slide)
- Teleconference Attendees:
 - TMC - Don Lind
 - PARC - Ralph Kozlowski
 - SwRI - Art Sanchez, Jesse Rodriguez, Frank Lopez
 - Afton - Pat Adams, Cory Koglin, Wes Stocks
 - Lubrizol - Don Bartlett, Pete Radonich, Rick Graziano, Galen Greene, Chris Schenkenberger
- For the purpose of making sure the experiment is run properly, it was decided to conduct the work at the winter rating workshop

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Rating Experiment Planned for Winter Rating Workshop

L-60 Rating Procedure

1. Handle the gears at the gear teeth lands to avoid any contact of the rated area.
2. Use a cool white type fluorescent 4500 K color temperature light with a minimum illumination level of 200 foot-candles for rating gears.
3. Place one white 8 1/2" X 11" U.S. letter size paper on the base of the rating surface.
4. Wipe a 3/4 inch wide area across the diameter of the face of the gear along the keyway. Wipe the gear five times in the same direction.
5. Place the gear on the clear plastic holder with the keyway vertical, front side up. Do not tilt or adjust the gear from the flat orientation while rating.
6. Position the light 8 ± 0.5 inches level above the gear with the near edge of the light projecting downward directly over the center-bore of the gear.
7. Rate the bottom half of the gear looking directly down on the gear, from above the near edge of the light. Do not rate the gear teeth or the spacer bushing contact area.
8. Rotate the gear 180 degrees and rate the other half of the gear.
9. Turn the gear over and repeat the rating procedure for the back side.
10. Use any of the three Rating Scales (A, B or C) for Non-Rubbing Parts in CRC Manual No. 20 to determine the varnish rating.
11. Do not use new test parts, such as a gear or the washer nut area of the test gear as a 10.0 rating reference point.
12. Repeat both large and small gear with the same procedure.

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Attachment	3
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Reference	L60-1
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L-60-1 Surveillance Panel
 May 13, 2009
 9:00 a.m. – 10:00 a.m.
 TACOM- Main Conference Room #210 – Warren, MI

Agenda

- I. Call to Order
- II. Agenda and Membership Review
- III. Approval of Meeting Minutes
 - February 11, 2009
- IV. Rating Experiment - Rating Workshop
 - TMC to update panel on upcoming rater workshop
- V. **Updating figure A2.1 of the D5704**
- VI. New Business
- VII. Adjournment

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D5704, Figure A2.1 – Exploded View of Gear Case

A2.1 EXPLODED VIEW OF GEAR CASE ASSEMBLY

A2.1 Gear Case Assembly Parts List (see Fig. A2.1):

(1) Lower Shaft (Shaft) Inert Thread	(51) Shimless Steel Ball	(37) Bearing Housing
(2) Upper Shaft (Shaft) Inert Thread	(52) Shimless Steel-Copper Washer	(38) Ball Cap, 4.0 in by 4.0 in
(3) Gear Case Support	(53) Ball Pin	(39) Ball Cap Nut Cover
(4) Pin (Pin) Housing	(54) Cageless Washer	(40) Shimless Steel Cover
(5) Seal Sleeve, CH 0002	(55) Shimless Steel Flat Washer, 7/8 in	(41) Gear Housing Ball (Right-Hand Thread)
(6) Spring Washer	(56) Shimless Steel Flat Washer, 1/2 in by 1/2 in	(42) Gear Housing Ball (Left-Hand Thread)
(7) Gear Case	(57) Cotter Pin	(43) O-Ring, 1/8 in ID
(8) Cap Screw, 7/8 in-20 by 1/2 in	(58) Upper Spring Washer	(44) Gear Case Cover Plate
(9) Seal Tube	(59) Lower Spring Washer	(45) Seal Washer, 2.0 in
(10) O-Ring, 2.125 in ID	(60) Housing Cover	(46) Cap Screw, 1/2 in by 4.0 in
(11) Seal, CR0002	(61) Shimless Steel Cap Screw, 1/2-20 by 1/2 in	(47) Seal Tube Gasket
(12) Seal Pin	(62) Shimless Steel Flat Washer, 1/2 in	
(13) Shimless Steel Flat Washer, 1/2 in	(63) Ball Housing	

• V-ring location...

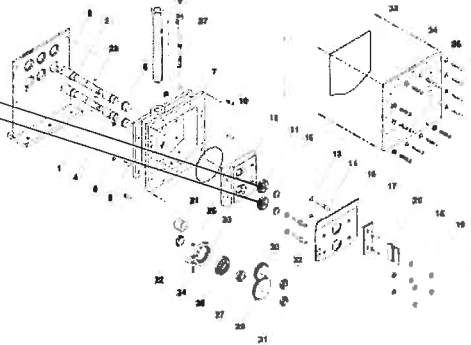


FIG. A2.1 Exploded View of Gear Case Assembly

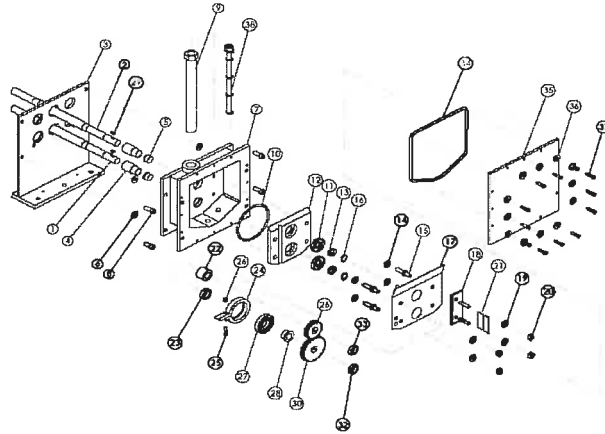
10

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5-13-09

A2. EXPLODED VIEW OF GEAR CASE ASSEMBLY

A2.1 Gear Case Assembly Parts List (see Fig. A2.1)

- | | | |
|------------------------------------|--|--|
| 1) Lower Shaft (Right-Hand Thread) | 14) Stainless Steel Flat Washer 5/16" x 3/4" | 27) 8-14 Tef Bearing |
| 2) Upper Shaft (Left-Hand Thread) | 15) Stainless Steel #3 | 28) Gear Bushing |
| 3) Gear Case Support | 16) Stainless Steel External Retainer | 29) 2-11 by 1/8" x 3/8" Pin |
| 4) Gear Case Bushing | 17) Baffle Plate | 30) Cap-Screw 10-32 by 3/4" |
| 5) Gear Case (99024) | 18) Catalyst Housing | 31) Gear Retaining Nut (Right-Hand Thread) |
| 6) Spacer Washer | 19) Stainless Steel Flat Washer 1/16" x 1/4" | 32) Gear Retaining Nut (Left-Hand Thread) |
| 7) Gear Case | 20) Stainless Steel Hex Nut 5/16" x 1/8" | 33) O-Ring 1.5" O.D. |
| 8) Cap Screw 5/16" x 24 by 3/4" | 21) Catalyst | 34) Gear Case Cover-Right |
| 9) Vent Tube | 22) Upper Spacer Bushing | 35) 10-24 Washer 2 1/2" |
| 10) O-Ring 1 1/2" x 1/32" | 23) Lower Spacer Bushing | 36) Cap Screw 10-32 by 3/4" |
| 11) O-Ring 1.58" | 24) Gear Case | 37) Vent Tube Baffle |
| 12) Seal Plate | 25) Stainless Steel Cap Screw 10-32 by 3/4" | |
| 13) V-Ring | 26) Stainless Steel Hex Nut #10-32 | |



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D 5704 - 08

A2. EXPLODED VIEW OF GEAR CASE ASSEMBLY

A2.1 Gear Case Assembly Parts List (see Fig. A2.1)

- | | | |
|------------------------------------|--|--|
| 1) Lower Shaft (Right-Hand Thread) | 14) Stainless Steel Flat Washer 5/16" x 3/4" | 27) Test Bearing (8-14) |
| 2) Upper Shaft (Left-Hand Thread) | 15) Stainless Steel External Retainer | 28) Gear Bushing |
| 3) Gear Case Support | 16) Baffle Plate | 29) 2-11 by 1/8" x 3/8" Pin |
| 4) Gear Case Bushing | 17) Catalyst Housing | 30) Cap-Screw 10-32 by 3/4" |
| 5) Gear Case (99024) | 18) Stainless Steel Flat Washer 1/16" x 1/4" | 31) Gear Retaining Nut (Right-Hand Thread) |
| 6) Spacer Washer | 19) Stainless Steel Hex Nut 5/16" x 1/8" | 32) Gear Retaining Nut (Left-Hand Thread) |
| 7) Gear Case | 20) Catalyst | 33) O-Ring 1.5" O.D. |
| 8) Cap Screw 5/16" x 24 by 3/4" | 21) Upper Spacer Bushing | 34) Gear Case Cover-Right |
| 9) Vent Tube | 22) Lower Spacer Bushing | 35) 10-24 Washer 2 1/2" |
| 10) O-Ring 1 1/2" x 1/32" | 23) Gear Case | 36) Cap Screw 10-32 by 3/4" |
| 11) O-Ring 1.58" | 24) Stainless Steel Cap Screw 10-32 x 3/4" | 37) Vent Tube Baffle |
| 12) Seal Plate | 25) Stainless Steel Hex Nut #10-32 | |
| 13) V-Ring (99114) | | |

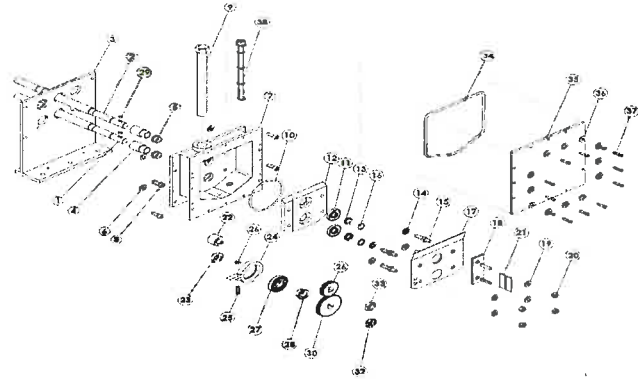


FIG. A2.1 Exploded View of Gear Case Assembly

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Attachment 3
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L-60-1 Surveillance Panel
May 13, 2009
9:00 a.m. – 10:00 a.m.
TACOM- Main Conference Room #210 – Warren, MI

Agenda

- I. Call to Order
- II. Agenda and Membership Review
- III. Approval of Meeting Minutes
 - February 11, 2009
- IV. Rating Experiment - Rating Workshop
 - TMC to update panel on upcoming later workshop
- V. Updating figure A2.1 of the D5704
- VI. **New Business**
- VII. Adjournment

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Attachment	<u>3</u>
Page	<u>267</u>
Reference	<u>L-60-1</u>
	<u>5-13-09</u>