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### **Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS**

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November 2, 2007

Reply to:  
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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 August 8, 2007 L-60-1 Surveillance Panel meetings held at the PRI Headquarters, Warrendale, PA. Please direct any corrections or comments to my attention.

Sincerely,

Chris Prengaman for Chris Schenkenberger  
Chairman  
L-60-1 Surveillance Panel

Attachments

L-60-1 Surveillance Panel Meeting  
PRI Headquarters, Warrendale, PA  
Wednesday August 8, 2007

L-60-1 meeting 11:07am - 12:18pm

*Attachment #1* is the PowerPoint presentation & agenda for today's meeting.

*Attachment #2* is the sign in sheet for today's meeting.

- Motion to approve surveillance panel meeting minutes from February 14<sup>th</sup> 2007: Mr. Koehler/second Mr. Smith, voice vote: unanimously approved.
- Membership review, Hector De Le Fuente is no longer a SWRI employee. Mr Koehler will be the SWRI voting member. Mr Schenkenberger will update the membership list.
- CRC Manual 21
  - Discussion related to this topic was held during the L-37 surveillance panel meeting in the morning.
  - Page 39 was introduced into manual 21 in November of 2001.
  - Take the information from the L-37. See SP discussion, actions, and motions. Motion 1 Mr. Koehler/Mr. Koglin, 6-0-0. A letter will be written from the 3 panels to CRC asking them the SP's have approved and implement the update to all manuals.
  - Mr Lind will continue to look at templates during lab visits and during rating workshops.
  - **Action Item: Mr Koehler will work with Mr Sanches to put out an email detailing rating templates to known industry raters. Expect email before 8/17/07**
- Alternator discussions - Mr Koehler has brought up the discussion.
  - The alternator is a critical part of the stand because it does supply some load to the gears. The current off of that delivers current flow.
  - All labs have had a few alternator failures in the past that have caused a lost test.
  - The procedure requires a specific PN. New alternators are no longer available.
  - Labs are using rebuilt or remanufactured units. The panel has been notified of this in the past.
  - Mr Koehler's concern is the 5-minute downtime interruption. It is impossible to change out an alternator in the current allowed 5 minutes of downtime.
  - Mr Koehler would like to see clarification on procedure wording: - What is meant by interrupted? (10.7) Vague. Can it be interpreted as alternator cannot be replaced? Needs to be more black and white/specific.
  - Mr Lind commented that downtime definitions were addressed in the last L-33-1 SP meeting. Downtime is counted until you have reached test conditions.

- Mr. Gropp mentioned there are few options to help save tests when the alternator fails.
- **Action Item: Use definition L-33-1 downtime occurrence should be added for L-60-1 via teleconference. "interrupted" will be changed to refer to as downtime.**

*Attachment #3* is a document detailing alternator references in the Procedure.

*Attachment #4* is a document detailing the proposed changes to the procedure with respect to downtime.

- Gear Rating Workshop Review - TMC
  - Mr Lind expressed concern about spreads greater than 0.5 with ACV
  - Mr Lind presented all the gears that were evaluated at the workshop including the calibration gears. Mr Lind also indicated which rater number rated the original reference with all Labs permission.
  - TMC will keep the gears to determine if the gear C/V drifts over time.
  - # 8 gear rating spread was alarming.
  - Set 2C and 7: rater 16 was not present but rated the part originally
  - Mr Lind commented there still is a need to address the light differences being used to rate the parts. It does impact the rating. The background lighting has been noticed and commented by the raters to make a difference in rated parts.
  - Raters turned down rating tool in the past to hold part in a consistent rating area.
  - Mr. Comfort asked of we could have a computer vision system rate intensity like the Sequence II rust ball test. The panel expressed
  - Gear number 10 rating spread is ridiculous.
  - Comparing this workshop directly with those held prior, Mr. Lind said it would appear that the rating reproducibility has somewhat degraded.
  - Mr Lind commented - with respect to reproducibility, a 0.5 number delta is about as good as you can get due to the rating tools and


*Attachment #5* is the document that Mr Lind passed out detailing the L-60-1 results from the July 2007 rating workshop.

Adjourn 12:18 Don Lind

Respectfully submitted,

Chris Prengaman  
for Chris Schenkenberger  
L-60-1 Surveillance Panel Chairman

**Lubrizol** L-60-1 Surveillance Panel  
August 8, 2007



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Agenda

- Call to order
- Review Agenda
- Approval of Meeting minutes:
  - February 14, 2007 L-60-1 SP Meeting
- CRC Manual 21
- Alternator specified in D5704 Procedure
  - Quality Issues with remanufactured units
- Review of L-60-1 Ratings – July 2007 Rater Calibration Workshop
- Adjournment

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CRC Manual 21

- CRC Manual 21 created 11/2001 with update 12/2001
- CRC update 2007 related to L-60-1: page 39
  - Large & Small gear area template
  - Template introduced with Manual 21
- Revision is due to size problems with templates
- Corrections will have new implementation date

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Alternator – D5704 Procedure

- Availability of specified alternator is limited.
- Downtime concerns if alternator failure occurs.

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L-60-1 Rater Calibration Workshop Data – July 07

- TMC review

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

Meeting Date: February 14, 2007

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\* Initial to indicate attendance at subject meeting

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Meeting Date: February 14, 2007

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Meeting Date: February 14, 2007

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*Chris Paganman*

*Bob Greene, Bob*

*SHARTE, SWH*

\* Initial to indicate attendance at subject meeting

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## References to the alternator within the D5704:

6.1.3 *Heater Elements*—Since this test method is extremely sensitive to temperature, the following specified heater elements (two total) are mandatory:

6.1.3.1 *Primary Heater Element*, one only allowed.<sup>10,11</sup>

6.1.3.2 *Alternator Load Heater*, one only allowed.<sup>11,12</sup>

<sup>11</sup> If you are aware of alternative suppliers, please provide this information to ASTM Headquarters. Your comments will be given careful consideration at a meeting of the responsible technical committee,<sup>1</sup> which you may attend.

<sup>13</sup> The sole source of supply of the Delco-Remy GM Part No. 1105360, Model No. 10-S1 Series Type 100, 63 A; 12 V negative ground known to the committee at this time is S. E. Chevrolet Co., 2810 Bishop Rd; Willoughby Hills, OH 44092 or any other GM dealer.

6.1.7 *Alternator*—The alternator for loading is specified.<sup>11,13</sup> No substitutions are allowed. Wiring for the alternator shall be modified as shown in the engineering drawings. Modify the alternator load circuit as shown in Annex A7.

10.5 Adjust the field supply of the alternator for a net output of  $128 \pm 5$  W.

10.6 The large gear shall maintain a speed of  $1750 \pm 50$  r/min throughout the heat-up and test time.

10.7 Run the test at the conditions specified and without interruption for  $50.0 \pm 0.1$  h. Terminate the test if it is interrupted for more than 5 min total during the test period. Record any downtime on Form 4, Annex A5.

14.5 Calculate percent out for each parameter in Table 1 using the following equation and record results in Form 6, Annex A5.

**TABLE 1 Test Validity Parameters**

	Parameter			
	Oil Temperature	Air Flow	Alternator Load	Large Gear Speed
Specification	325°F	22.08 mg/min	128 W	1750 r/min
Range	2°F	4.02 mg/min	10 W	100 r/min
% Out of specification (warm up)	NA	10 %	10 %	5 %
% Out of specification (test)	5 %	5 %	5 %	2 %

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10.7 Run the test at the conditions specified ~~and without interruption~~ for  $50.0 \pm 0.1$  h. Terminate the test if more than 5 min of total downtime occurs during the test period. Record any downtime on Form 4, Annex A5.

10.7.1 A downtime occurrence is defined as a time at which the test is shut down until the time the test returns to test operating specifications.

10.7.2 Do not calculate percent deviations during downtime occurrences.

**Renumber old 10.7.1 to 10.7.3**

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Reference	<u>L-60-1</u>

**ASTM Gear Calibration Workshop**  
**Pittsburgh, PA July 17, 18, 19 & 20, 2007**

**L-60 GEARS Varnish (Large Gear Only)**

SET #	RATER										MAX	MIN	AVG	Std Dev	CMIR	OIL	Original Rating		
	1	4	6	7	10	11	16	22	25	27								29	30
1C					7.55	7.65			8.25	7.85		7.00	8.25	7.00	7.66	0.456	54329	148-1	7.5
2C					9.06	8.95			8.73	9.00		8.64	9.06	8.64	8.88	0.181	60154	151-2	8.2
3C					9.35	9.25			9.50	9.40		9.25	9.50	9.25	9.35	0.106	60169	151-2	9
4C					5.60	3.52			4.50	4.80		3.52	5.60	3.52	4.39	0.889			
5					9.02	9.00			9.31	9.05		9.12	9.31	9.00	9.10	0.126	59188	151-2	8.5
6					8.53	9.45			8.40	9.40		8.90	9.45	8.40	8.94	0.483	58263	148-1	8.6
7					8.55	8.75			8.13	8.42		8.42	8.75	8.13	8.45	0.226	60155	151-2	7.8
8					7.54	6.26			8.10	6.63		6.80	8.10	6.26	7.07	0.742			
9					9.02	9.40			9.23	9.50		9.05	9.50	9.02	9.24	0.211	54334	151-2	8.4
10					3.57	3.66			7.55	4.31		5.05	7.55	3.57	4.83	1.634			
REP/ATE																			
R1/6					8.58	9.40			8.50	9.30		9.14	9.40	8.50	8.98	0.417	58263	148-1	8.6
R2/8					7.27	6.55			7.53	6.55		6.97	7.53	6.55	6.97	0.435			

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**ASTM Gear Calibration Workshop  
Pittsburgh, PA July 17, 18, 19 & 20, 2007**

**L-60 GEARS Sludge (Large Gear Only)**

SET #	RATER											MAX	MIN	AVG	Std Dev	
	1	4	6	7	10	11	16	22	25	27	29					30
1C					9.75	9.65			9.80	9.74		9.47	9.80	9.47	9.68	0.130
2C					9.58	9.55			9.75	9.70		9.40	9.75	9.40	9.60	0.137
3C					9.75	9.70			9.80	9.75		9.65	9.80	9.65	9.73	0.057
4C					9.25	9.35			9.00	9.45		9.30	9.45	9.00	9.27	0.168
5					9.75	9.65			9.70	9.75		9.73	9.75	9.65	9.72	0.042
6					9.75	9.70			9.65	9.74		9.53	9.75	9.53	9.67	0.090
7					9.59	9.45			9.50	9.55		9.48	9.59	9.45	9.51	0.056
8					9.45	9.42			9.45	9.55		9.32	9.55	9.32	9.44	0.082
9					9.75	9.75			9.7	9.75		9.63	9.75	9.63	9.72	0.053
10					9.46	9.6			9.5	9.44		9.58	9.60	9.44	9.52	0.071
RERATE																
R1/6					9.75	9.65			9.70	9.74		9.46	9.75	9.46	9.66	0.119
R2/8					9.40	9.42			9.50	9.50		9.38	9.50	9.38	9.44	0.057

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