Report of Meeting
L-60-1 Surveillance Panel Conference Call
February 9th, 2022

Attendees:

SwRI -	**Warden,** Kostan, Mueller
Lubrizol -	Venhoff, **Slocum**, Bealko
Afton -	**Sangpeal,** Bell, Horvath
Intertek -	**Lange**
TMC -	**Beck**
ExxonMobil -	**Banas**
BASF -	**Goyal,** Mosher
Dana -	**Zyski**
Meritor -	LaBond, **Carter**
Army -	**Comfort**
AAM -	**Muransky**
Shell -	Uy, Jordan
Chevron -	Martinez
	Dvorak

Voting Members in **BOLD**

1.0 Membership Review

Motion #1 → W. Venhoff 1st /2nd A. Comfort to approve the SwRI voting membership change from Rebecca Warden to Caroline Mueller. Motion passed unanimously, 11-0-0 (Yes-No-Abstain).

2.0 Meeting minutes Approval

– November 9th, 2021, ASTM Meeting

Motion #2 → A. Goyal 1st /2nd T. Muransky to approve the meeting minutes from the November 9th, 2021, ASTM Meeting. Motion passed unanimously, 11-0-0 (Yes-No-Abstain).

3.0 L-60-1 Severity Action's

- Borderline oil data presented with using both 2011 and 2018 hardware. One lab showed an almost 1 merit severity shift from 2011 to 2018. Other lab was milder and had similar results between 2011 and 2018.
- Still no consistency between these two labs and the other two labs having additional struggles currently with running the newer 2018 hardware.
- Build Workshop has been suggested
- Statisticians suggest looking at operational reference data between labs

Action Items:

- **T. Kostan to update current L-60-1 severity data set with the current L-60-1 references**
- **R. Slocum to work with statisticians (T. Dvorak?), labs, and TMC to identify references for operational data comparisons**
- **R. Slocum to work with labs and TMC to organize a build workshop**

4.0 L-60-1 LED Lighting

- Need to follow up with raters and labs about the usage of LED lights for rating L-60-1 gears
- Need to determine solution and specs to use in the current lamps or similar
- When specs determined procedure will need to be updated

5.0 RCMS/Report Template

- Attendance and calibration expiration dates requirements for the L-60-1 and L-33-1 have been moved to the RCMS as of January 1, 2022.
- L-60-1 Report template needs to be updated to include rater calibration expiration date.

Motion #3 → R. Slocum 1st /2nd T. Muransky to approve the updated L-60-1 report template to include the Rater Calibration Expiration Date. Report template to be implemented by 04/09/2022. Motion passed unanimously, 11-0-0 (Yes-No-Abstain).

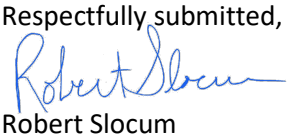
6.0 Old Business

- 155-2 approval – On hold for now due to existing issues.

7.0 Adjourn

Motion #4 → W. Venhoff 1st /2nd T. Muransky to adjourn. Motion passed unanimously, 11-0-0 (Yes-No-Abstain).

Respectfully submitted,



Robert Slocum
L-60-1 Surveillance Panel Chairman

D02.B0.03

L-60-1 Surveillance Panel Meeting

2/09/2022

12:45pm– 2:45pm

Robert Slocum

Agenda

- Call to Order/Agenda review
- Membership review
- Meeting Minute Approvals
  - November 9th, 2021, ASTM Meeting
- L-60-1 Severity Action's
  - Borderline Oil Data
  - Severity Recommendations Follow-up
- 148-1 inventory / borderline oil replacement
- L-60-1 LED lighting
- RCMS / Reporting Template
  - Report Template Motion
- Old Business
- New business
- Adjournment

Membership Review

L-60-1 Surveillance Voting Members

Allen Comfort	US Army
Amy Zyski	Dana
Arjun Goyal	BASF
Anthony Lange	Intertek
Jason W. Carter	Meritor
Dylan Beck	TMC
Robert Slocum	Lubrizol
Matt Sangpeal	Afton
Mike Cabaj	Linamar
Caroline Mueller	SwRI
Rob Banas	ExxonMobil
Troy Muransky	AAM

Meeting Minutes Approval

- November 9th, 2021, ASTM Meeting

L-60-1 Severity Action's

– Borderline Oil Data

Stand	Run #	Oil	Small Gear Batch	Large Gear Batch	AVG C/V w/CF	Lg Gr Avg	Lg Gr F	Lg Gr R	Sm Gr F
4F	378	GO-013357-07-00	12-11-11	12-11-45	6.80	6.20	6.00	6.40	6.50
4F	386	GO-013357-07-02	07-18-30	06-18-47	5.40	4.80	4.70	5.00	5.61
5F	435	GO-013357-07-01	12-11-05	12-11-36	6.40	5.80	5.40	6.11	3.34
5F	440	GO-013357-07-02	07-18-30	07-18-47	5.60	5.00	4.75	5.30	0.98
16	228	GO-013357-07-01	06-18-22	05-18-60	7.60	7.00	6.90	7.05	6.95
16	233	GO-013357-07-02	06-18-22	05-18-65	7.30	6.70	6.85	6.50	6.40
16	239	GO-013357-07-02	12-11-07	12-11-45	*7.1	6.50	6.80	6.25	6.41
					*S.A. Removed				

L-60-1 Severity Action's

– Severity Recommendations Follow-up

Executive Summary

Average Carbon/Varnish

- Reference oil data historically has been consistently severe of target.
- Though initial testing on 2018 hardware was closer to target, all labs who have switched have seen a shift, and the one lab that hasn't has remained stable, therefore indicating a high likelihood of the new gear batch as the cause of the shift.
- Both reference oils have shifted similarly, providing evidence that candidate behavior is likely also shifted.
- Options:
  1. Correction factor 0.6 merits is recommended for a tests run with the 2018 hardware, in addition to the 0.6 merit correction currently in place, for a total correction of 1.2 merits for tests run on the 2018 hardware.
  2. There are clear differences in precision of ACV across labs, with Lab D running much more precise than other labs. Lab visits are recommended to better understand these differences.
     - Updates to the ACV correction factor may be delayed - pending the findings / conclusions of the lab visits
  3. Do nothing

Average Sludge

- Only 3 data points beyond 2.0 sigma severe, and there is no clear shift at the time of the new hardware introduction.
- It is recommended to continue to monitor this parameter without a correction factor and allow severity adjustments to handle differences in severity.

148-1 inventory / borderline oil replacement

- ~9 gallons

ASTM L-60-1 (D5704) Surveillance Panel Meeting Minutes 02/19/2020

LED Light Update (Dylan Beck):

ASTM Gear Calibration Workshop
Intertek Automotive Research, San Antonio, TX, January 14-16, 2020

L-60 GEARS (Large Gear Only)

SET #		LED Lighting Rating				Fluorescent Lighting Rating							
		MIN	MAX	AVG	Std Dev	MIN	MAX	AVG	Std Dev	Id	mean	std	n
1C	Varnish	7.30	8.68	8.16	0.377	7.30	9.50	8.03	0.471	0	7.480	0.63	65
1C	Sludge	9.53	9.74	9.62	0.062	9.53	9.74	9.62	0.067		9.651	0.09	
2C	Varnish	9.30	9.80	9.58	0.178	9.30	9.80	9.53	0.186	19	8.653	0.42	60
2C	Sludge	9.74	9.85	9.76	0.032	9.74	9.85	9.76	0.033		9.757	0.09	
3C	Varnish	8.80	9.80	9.18	0.288	9.73	9.50	9.07	0.243	25	8.423	0.39	58
3C	Sludge	9.50	9.85	9.74	0.080	9.50	9.85	9.71	0.114		9.751	0.04	
4C	Varnish	9.00	9.90	9.65	0.313	9.00	9.80	9.53	0.370	1	9.315	0.20	63
4C	Sludge	9.67	9.75	9.74	0.027	9.67	9.75	9.74	0.030		9.711	0.09	
5	Varnish	4.30	5.60	4.86	0.436	4.30	5.60	4.89	0.479	29	4.829	0.43	9
5	Sludge	9.40	9.75	9.62	0.100	9.40	9.75	9.84	0.104		9.513	0.12	
6	Varnish	8.50	9.70	9.18	0.312	9.50	9.50	9.01	0.381	4	8.645	0.32	55
6	Sludge	9.70	9.80	9.75	0.022	9.70	9.80	9.74	0.028		9.732	0.04	
7	Varnish	6.00	7.60	6.71	0.441	6.00	7.80	6.56	0.484	35	3.088	0.82	4
7	Sludge	9.55	9.75	9.71	0.065	9.55	9.75	9.73	0.063		9.593	0.11	
8	Varnish	7.87	9.50	8.58	0.497	7.06	9.50	8.53	0.600	15	8.124	0.34	59
8	Sludge	9.74	9.75	9.75	0.009	9.74	9.75	9.75	0.003		9.770	0.09	
9	Varnish	3.97	6.00	4.67	0.541	3.97	5.20	4.56	0.409	31	4.478	0.529	6
9	Sludge	9.45	9.74	9.59	0.087	9.45	9.74	9.60	0.081		9.54	0.10	
10	Varnish	9.40	9.90	9.65	0.167	9.40	9.80	9.56	0.145	13	9.431	0.326	60
10	Sludge	9.71	9.75	9.75	0.012	9.71	9.75	9.74	0.017		9.74	0.04	

Labs to work with the Raters to gather more date to be able to agree on introducing the LED light at the next ASTM meeting

RCMS?
Report Template - 4/09/2022

Test Method D5704
(L-60-1)
Form 5

Gear Rating

Lab:	Stand:	Stand Run:
Oil Code:	Rated By:	**Rater Cal Exp Date:**

Carbon/Varnish:

Large Gear						**Small Gear**					
Front			**Rear**			**Front**			**Rear**		
%	**Rate**	**Merit**	**%**	**Rate**	**Merit**	**%**	**Rate**	**Merit**	**%**	**Rate**	**Merit**
Total			**Total**			**Total**			**Total**		

Large Gear Average of Carbon/Varnish Only _____

Old Business

- 155-2 approval?

New Business

Adjournment