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Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS

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Dec. 6th, 2012

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ASTM D02.B0.03 L-42 Surveillance Panel
Members and Guests:

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

Nov. 7th, 2012 Surveillance Panel Meeting (Automation Alley – Troy, MI)

Please direct any corrections or comments to my attention.

Very Respectfully,

Thomas Gottwald, Chairman
L-42 Surveillance Panel

L-42 Surveillance Panel Meeting Minutes

Automation Alley

Troy, MI

Nov. 7, 2012

Attendees: voting members in **bold**

B. Koehler (SwRI)	J. Gropp (LZ)	R. Banas (XOM)	B. Bubonic (LZ)
D. Smith (Intertek)	K. Hobson (Afton)	M. Umerly (LZ)	B. Dwornick (US Army)
S. Parke (TMC)	L. Hamilton (LZ)	C. O'Brien (GM)	A. Comfort (US Army)
T. Gottwald (Afton/C)	P. Kanga (XOM)	G. Greene (BASF)	
J. Dharte (AAM)	T. Boschert (Afton)	H. Chambers (Linamar)	
A. Athey (Volvo)	W. Venhoff (LZ)	B. McGlone (Meritor)	
D. Bell (Afton)	A. Trader (Intertek)		
	B. Kearney (Afton)		

Call to Order

The meeting PowerPoint presentation is attached.

Review of Membership

The sign-in sheet is attached and up-to-date.

Motion by Mr. Hamilton, second by Mr. Smith, to allow Mr. Greene of BASF to be a voting member on the Surveillance Panel. Motion passed unanimously (verbal).

Review of Agenda

The meeting agenda is attached (slide 2 of attached PowerPoint presentation).

Approval of Meeting Minutes

Meeting minutes from the Aug. 8, 2012 L-42 Surveillance Panel meeting, held at the PRI Headquarters in Warrendale, PA.

Motion by Mr. Hamilton, second by Mr. McGlone, to approve the meeting minutes as presented. Motion passed unanimously (verbal).

Review of action items from Aug. 8 meeting ensued (slide 3 of attached PowerPoint presentation).

- **TMC to request suppliers to look back to see if they have a comparable 116-1 fluid and to contact Frank Farber at the TMC with any possible solutions.**
 - o See following section of minutes
- **TMC will get the newly approved templates to ASTM. The TMC will put out an information letter pertaining to the use of the templates as soon as they are available from ASTM.**
 - o The templates are currently at the printer. An information letter will be sent out, by the TMC, once the templates are available for purchase.
- **Chairman to confirm that all components are in Dry Ridge and to communicate to Ft. Wayne and reiterate urgency of industry order.**
 - o Complete
- **Bring [drive-side] scored parts to Nov. SP meeting.**
 - o Complete
- **Determine go/no-go limit at Nov. SP meeting.**
 - o See "Drive-side Scoring go/no-go Limit" section of minutes

Reference Oil 116-1 Replacement

Mr. Parke presented data offered on oil replacement, submitted to the TMC, as seen in the attached table (reference the highlighted 80W-90 variant).

The Panel expressed concerns that they hoped to have a candidate that was more comparable to the current oil, 116-1, stating that the proposed oil's scoring percentages significantly changed the target value of the reference oil.

Question of the current 116-1 supply revealed that there are currently 35 gal of 116-1 left, as of Nov. 6, 2012. This correlates to 70 tests worth of oil.

The TMC proposed that a correction factor could be the solution and proper approach, if the proposed oil gets chosen. It was noted that correction factors have never been used with L-42 test results in the past, however they have been used on other tests. Mr. Gropp asked if the labs could establish a hard limit value/band for the oil instead. Conversely, Mr. Smith stated that the hardware and stand limitations would prevent this "hard limit" approach because a hard pass/fail line must move with stand corrections. Mr. Koehler stated that a current band is in place for the 116-1 fluid and that it may change over time. He expressed interest in adding scoring bands to the L-42-1 wish list.

It was decided that the proposed oil is not turn-key; therefore, the following action items resulted:

ACTION: The TMC should come up with a correction factor, with scoring bands, for the proposed oil for the Panel's review.

ACTION: The Panel should keep asking for replacement fluids.

If the TMC's data looks good for the proposed oil, the TMC will acquire oil for development purposes and investigative runs will be made at the labs.

Hardware Update

Industry Order

The participating labs have received all axles, as of Nov. 5, 2012. (Quantities can be seen in the table on page 6 of the attached PowerPoint presentation). It was noted that the industry received roughly 10% (70 units) less than originally ordered from Dana because they were lost in production, due to Lubriling.

Proposed Approval Matrix

The labs and Panel agreed that a simple matrix of 3 passing runs (TMC oil 116-1) and 1 discrimination run (TMC oil 113) would suffice for the hardware approval process. The results of this matrix are very dependent on whether or not the full industry batch hardware shows signs of drive-side scoring. SwRI expressed a need for all the labs to complete this matrix during a specified timing window (possibly starting the week of Dec. 1, 2012). SwRI will run a couple shakedown tests prior to this window as tuning runs.

ACTION: The Chairman will set up a call with the L-42 Hardware Task Force, the week of Nov. 12, to determine the exact timing of testing for the matrix window.

Drive-side Scoring go/no-go Limit

At the Aug. 8 Surveillance Panel meeting, 10% drive-side scoring was discussed as the tentative limit. The Panel agreed to go ahead with a 10% drive-side scoring limit, in the event that the labs could not work on tuning drive-side scoring out. The labs preferred to use the currently approved coast-side templates for the drive-side ratings, noting that the areas on the tooth surfaces are not the same. The new templates designate 11% and 8%, but not 10%. The question was posed, would this be a problem? The Panel didn't think so and it was determined that the labs could proceed using their templates.

Therefore, new templates do not need to be developed for drive-side rating.

L-42-1 Preliminary Discussions

The Aug. 8 Surveillance Panel meeting minutes stated:

There is concern to start discussions for a Next Generation L-42 test, because the current L-42 hardware order with Dana may last less than two years. This topic will be on the agenda for the Surveillance Panel meeting in Troy, MI in Nov.

This need was discussed and Mr. Koehler made the motion to form a working group to develop a replacement test, called L-42-1. Second, Mr. Hamilton. Motion passed 10/0/0.

ACTION: The Chairman will call for volunteers from the Panel to make up this working group and set up a meeting/call for the group.

New/Open Issues

No new/open issues.

Adjournment

Motion to adjourn, Mr. Koehler. Second, Mr. Dharte. Motion passed unanimously (verbal).

Respectfully submitted,

A handwritten signature in cursive script, appearing to read 'T. Gottwald', written in dark ink.

Thomas Gottwald

L-42 Surveillance Panel Chairman

L42 Data for Demo Oil 1-B's performance additive

Scoring must be less than the passing reference oil

Viscosity Grade	80W-90	85W-140	80W-90	80W-90	80W-90	80W-90	80W-90	80W-90	80W-90	80W-90
Coating	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Test Type	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
% Scoring Coast Side of Pinion	14	11	22	15	22	17	13	17	20	18
% Scoring Coast Side of Ring	8	5	13	6	12	8	7	12	10	11
% Scoring Coast Side of Pinion (Ref. Oil)	22	25	25	25	26	25	25	22	23	23
% Scoring Coast Side of Ring (Ref. Oil)	11	15	20	14	15	15	15	15	13	13

Viscosity Grade	80W-90	80W-90	80W-90	80W-90	80W-90	80W-90	80W-90	80W-90	80W-90	80W-90
Coating	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Test Type	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
% Scoring Coast Side of Pinion	16	13	15	21	18	21	20	10	15	16
% Scoring Coast Side of Ring	9	9	12	12	13	12	14	6	12	12
% Scoring Coast Side of Pinion (Ref. Oil)	23	23	22	25	25	25	22	22	22	22
% Scoring Coast Side of Ring (Ref. Oil)	13	13	15	15	15	15	16	15	15	15

Viscosity Grade	80W-90	80W-90
Coating	Green	Green
Test Type	Standard	Standard
% Scoring Coast Side of Pinion	9	12
% Scoring Coast Side of Ring	5	6
% Scoring Coast Side of Pinion (Ref. Oil)	22	21
% Scoring Coast Side of Ring (Ref. Oil)	15	15



L-42 Surveillance Panel Meeting

Automation Alley

Troy, MI

November 7, 2012

11am-12pm EST

Passion for Solutions™

Agenda

- ▲ **Call to Order**
- ▲ **Membership/Agenda Review**
- ▲ **Approval of Meeting Minutes**
 - ▲ Action Item Review
- ▲ **Reference Oil 116-1 Replacement (TMC)**
- ▲ **Hardware Update**
 - ▲ Completed Order
 - ▲ Approval Matrix
- ▲ **Drive-side Scoring go/no-go Limit**
- ▲ **L-42-1 Preliminary Discussions**
- ▲ **New/Open Issues**
- ▲ **Adjournment**

Approval of Meeting Minutes

SP Meeting Minutes

- ▲ Aug 8, 2012 – Warrendale, PA
- ▲ Posted to TMC website on 11/2/12
 - File name “20120808_SP.pdf”

Action Items from Aug 8 Meeting Minutes

- ▲ TMC to request suppliers to look back to see if they have a comparable 116-1 fluid and to contact Frank Farber at the TMC with any possible solutions.
- ▲ TMC will get the newly approved templates to ASTM. The TMC will put out an information letter pertaining to the use of the templates as soon as they are available from ASTM.
- ▲ Chairman to confirm that all components are in Dry Ridge and to communicate to Ft. Wayne and reiterate urgency of industry order.
- ▲ Bring [drive-side] scored parts to Nov. SP meeting.
- ▲ Determine go/no-go limit at Nov. SP meeting.

Reference Oil 116-1 Replacement

 TMC has the floor

Hardware Update

Industry Order

- ▲ Participating labs have received all axles, as of Mon. Nov. 5, 2012
 - 10% less than originally ordered (due to production losses)

Customer	P.O. Qty	Actual Qty
Afton	329	297
Lubrizol	194	175
Southwest	220	198

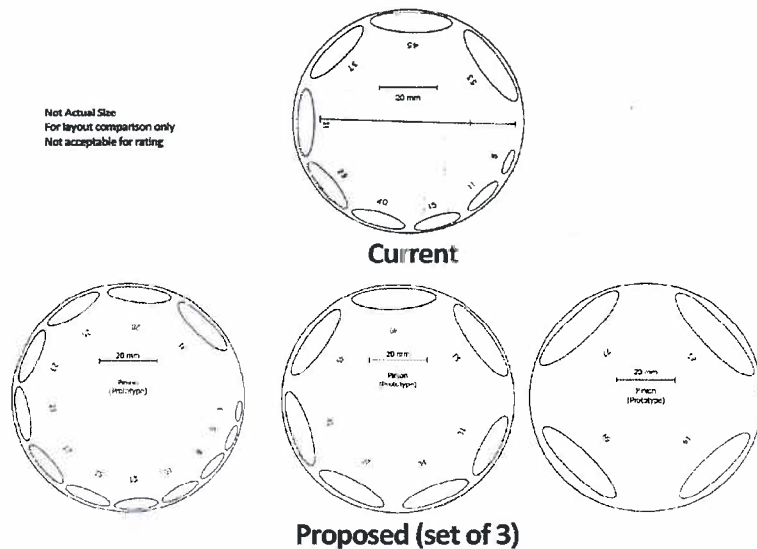
Proposed Approval Matrix

- ▲ 3 pass runs
- ▲ 1 discrimination run

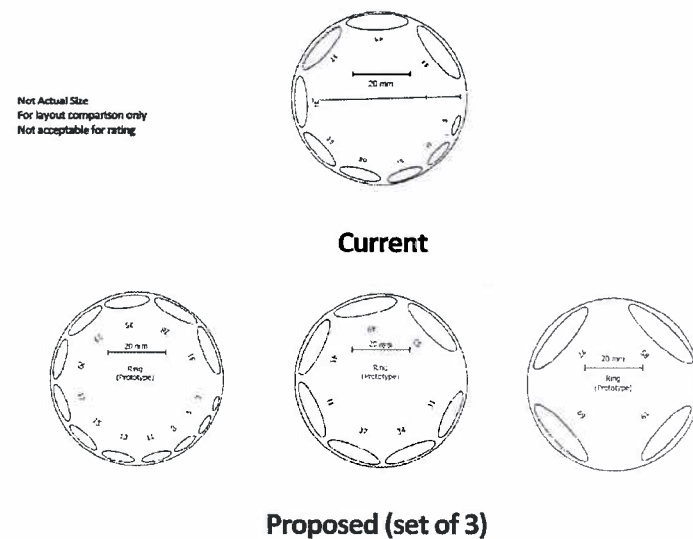
Drive-side Scoring Go/No-go Limit

- At the Aug. 8 SP meeting, 10% drive-side scoring was discussed as the tentative limit.
- Labs preferred to use coast-side templates for this, noting that the area is not the same.
- New templates designate 11% and 8%, is this a problem?

L-42 Rating Template Comparison (Pinion)



L-42 Rating Template Comparison (Ring)



Next Generation L-42

▲ **Name: L-42-1 (?)**

▲ **Setup**

▲ Electric

▲ **Parts**

▲ Production vs. Test Specific

▲ **Designer**

▲ Independent 3rd Party (?)

New/Open Issues




 Anything?

Thanks!



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L-42 Surveillance Panel Membership/Attendance
Automation Alley - Troy, MI
November 7, 2012

Initials	Name	Voting Non-Voting	Company Name Company Address	Contact information	
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	Dale Smith ✓	V	Intertek Automotive Research	Phone:	412-855-6854
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L-42 Surveillance Panel Membership/Attendance
Automation Alley - Troy, MI
November 7, 2012

Initials	Name	Voting Non-Voting	Company Name Company Address	Contact information	
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KH	Kevin Hobson ✓	NV	Afton Chemical	Phone:	804-788-5307
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	Khaled Zreik ✓	NV	General Motors	Phone:	248-977-9214
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LH	Larry Hamilton ✓	V	The Lubrizol Corporation	Phone:	440-347-2326
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PK	Percy Kanga ✓	NV	ExxonMobil Research & Engineering	Phone:	856-224-2094
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BD	Bridget Dwornick ✓	NV	US Army TARDEC	Phone:	586-282-4221
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L-42 Surveillance Panel Membership/Attendance
Automation Alley - Troy, MI
November 7, 2012

Initials	Name	Voting Non-Voting	Company Name Company Address	Contact information	
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**L-42 Surveillance Panel Membership/Attendance
Automation Alley - Troy, MI
November 7, 2012**

Initials	Name	Voting Non-Voting	Company Name Company Address	Contact information	
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	Ryan Thorpe ✓	NV	Southwest Research Institute	Phone:	210-522-6409
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