### L-42 Surveillance Panel Meeting Minutes

### Intertek PSI, Plymouth, MI and Virtual Meeting – Microsoft Teams

August 13, 2025

### Attendees: voting members in bold, \* indicates virtual attendance

D. Beck (TMC)	A. Goyal (BASF)	A. Smith (Infineum)
D. Bell (Afton)	J. Grewe (LZ)	C. Steele (BASF)
T. Bender (Fuchs)	S. Jetter (Exxon Mobil)	A. Stone (Afton)*
M. Burgman (Fuchs)	C. McCollum (Richful)	B. Transue (TMC)
B. Campbell (Afton)	T. Muransky (AAM)	D. Uy (Shell)
M. Caridi (BASF)	G. Parker (LZ)	C. Vander Wal (Daimler
J. Carowick (Cummins)	M. Portell (IAR)	Truck)
H. Catania (Cummins)	M. Sangpeal (Afton/C)	W. Venhoff (TMC)
M. Charron (SwRI)	E. Sattler (US Army)	R. Warden (Chevron
A. Comfort (US Army)	N. Schaup (LZ)	Oronite)
T Cibean (Dana)	A Sobyestacy (Shall)	P. Wright (SwRI)
T. Gibson (Dana)	A. Schweitzer (Shell)	G. Zarins (AAM)

### **Call to Order**

### **Review of Agenda**

The meeting agenda is attached.

### **Review of Membership**

Amend voting members: C. Mueller (SwRI)  $\rightarrow$  P. Wright (SwRI)

A. Lange (IAR)  $\rightarrow$  M. Portell (IAR)

Add C. McCollum (Richful) and A. Schweitzer (Shell)

A motion was made to approve the above changes to membership.

Motion: C. McCollum Second: M. Charron

All in favor, no objections, no abstentions.

### **Approval of Meeting Minutes**

Meeting minutes for approval:

— "20250507\_SP" → May 5, 2025 – Surveillance Panel Meeting – Plymouth, MI

A motion was made to approve the meeting minutes as presented.

Motion: T. Muransky Second: A. Goyal

All in favor, no objections, no abstentions.

#### **Action Item Review**

One open action item remains from May:

- Afton and Chevron-Oronite will propose a borderline-passing 75W oil for a Canadian L-42 validation run.
  - o Both labs ran into unforeseen issues and plan to continue development

#### **Next Hardware Batch Order**

All labs received their full order of axles plus overrun axles. No issues with build quality were noted so far. The batch designation is P2AD8/MSPL1.

The committee voted to approve this new hardware for testing with the following motion:

P2AD8/MSPL1 batch of L-42 hardware is approved for testing. Limits from the previous batch will be carried forward. The motion is effective immediately.

Motion: P. Wright Second: M. Portell

All in favor, no objections, no abstentions.

#### **Next-Gen L-42 Test Hardware**

No recent update from Dana on delivery of the first prototype gearset. T. Gibson will reach out within Dana for additional info.

Action Item: T. Gibson to inquire within Dana about next gen hardware development progress.

#### **Wheel Speed DAQ Discussion**

A motion was made to add a definition of the term 'Single Scan' to Section 3 Terminology:

3.1.4 Single-Scan: Refers to operational data that has not been filtered by hardware devices, software calculations, or any other filtering strategy not otherwise defined in D7452.

Motion: C. Vander Wal Second: C. McCollum

All in favor, no objections, no abstentions.

#### **Single Reference Test Torque Validity Discussion**

There was discussion around adding a table to help clarify referencing requirements. Additional work and discussion is needed.

Action Item: W. Venhoff to continue work on table.

### **L-42-1 Development**

A MS Word version of D7452 was received from ASTM.

**Action Item:** M. Sangpeal to begin drafting L-42-1 procedure.

### **Call for New Reference Oil**

The request remains open to lubricant suppliers to develop a new high reference oil for L-42 testing. Any interested lubricant supplier can contact the TMC directly. The new oil should produce equivalent performance to TMC 117 without the use of any correction factors.

### **Add Build Specs to Future Test Axle Orders**

The committee discussed adding additional build specs to future test axle orders. After reviewing existing drawings and documents, it was concluded that specs currently called out are adequate.

Drawing names could be added to the Assembly Requirements document.

**Action Item:** T. Gibson to identify relevant drawings / versions within Dana.

### New/Open Issues

No new issues were identified.

### **Adjournment**

A motion was made to adjourn.

Motion: M. Charron Second: M. Portell

All in favor, no objections, no abstentions.

Meeting adjourned.

Respectfully submitted,
Matthew & Langeed

Matt Sangpeal

L-42 Surveillance Panel Chairman



## L-42 Surveillance Panel Meeting ASTM D7452

Intertek PSI
Plymouth Township, MI
August 13, 2025
2:30 – 3:30 PM EST

Passion for Solutions

### Agenda

- Call to Order
- Agenda
- Membership Review & Update
- Approval of Meeting Minutes
- Action Item Review
- Next Hardware Batch Order Update
- Next-Gen L-42 Test Hardware Update
- Single Calibration Tests
- L-42-1 Development Updates
- Call for New Reference Oil
- Add build specs to future test axle orders
- New Issues
- Adjournment



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## L-42 SP Voting Members

Steve Jetter: Exxon Mobil

✓ Wes Venhoff: TMC

Allen Comfort: US Army

Arjun Goyal: BASF

✓ Troy Muransky: AAM

Jessica Carowick: Cummins

Matt Sangpeal: Afton Chemical (Chair)

Nick Schaup: Lubrizol

Anthony Lange: Intertek swap in Micheal Portell

Caroline Mueller: SwRI swap in Payton Wright

Trevor Gibson:
Dana

Rebecca Warden: Chevron-Oronite

Andrew Smith: Infineum

Camden Vander Wal: Daimler Truck

Add Addison Schweitzer and Clarence McCollum



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## **Approval of Meeting Minutes**

### **△** SP Meeting Minutes

Motion to Approve Meeting Minutes as they stand.



### **Action Item Review**

- Afton and Chevron-Oronite will propose a borderline-passing 75W oil for a Canadian L-42 validation run.
  - ▲ Status Afton: In-process.
  - ▲ Status Chevron-Oronite: In-process.
- ✓ W. Venhoff to add validity check for Single Try reference test to TMC protocol. W. Venhoff also to create a table with examples of Reference Sequences to help clarify requirements in D7452.
  - Status: Complete (details to follow)
- M. Sangpeal to set up conference call to discuss definition of the term 'Single Scan' and adding examples and equations to add clarity to D7452.
  - ▲ Status: Complete (details to follow)
- Action Item: N. Ariemma to contact ASTM to request an editable version of D7452.
  - ▲ Status: Complete
- M. Sangpeal to set up conference call with test labs and TMC to discuss adding axle build specs to D7452
  - Status: Complete (details to follow)



### Next Hardware Batch Order

- Pilot batch approved 7/11/25
  - ▲ Bulk assembly began 7/12/25
- All labs have received full orders + overrun axles
  - ► P2AD8/MSPL1 batch designation
- Approval process for bulk batch (same as last time?)
  - ▲ Each participating lab to run at least one Hi and one Lo reference on a calibrated stand
  - Runs not to count against reference period
  - Submit data to TMC by xx date

Motion to approve 2025 hardware batch validation plan.



### Next-Gen L-42 Hardware Update

- Hardware validation plan:
  - ▲ Approved in Feb. SP meeting
- **Timing for delivery:** 
  - ◆ Close to next production run (waiting for fresh update from Dana)
- Prototype testing lab:
  - ▲ Afton
- Which 75W oil will be tested / who will provide?
  - ▲ Afton or Chevron-Oronite
- No updates...



## Wheel Speed Discussion: Single-Scan Definition

- Conf. Call w/labs and TMC 8.5.25
- Add Definition to Section 3 Terminology
  - ▲ 3.1.4 Single-Scan: Refers to operational data that has not been filtered by hardware devices, software calculations, or any other filtering strategy not otherwise defined in D7452.

12.1.2 Wheel Speeds:

12.1.2.1 During Conditioning 1, see Fig. A6.11 location (A) and Conditioning 3, see Fig. A6.12 location (D), the reported wheel speeds shall be the average over the steady-state sequence.

12.1.2.2 Referring to Figs. A6.11 and A6.12, during Conditioning 2 or 4, the value of the maximum and minimum single scan conditioning 2 and 4 wheel speeds are located at (B<sub>1</sub>-B<sub>3</sub> and C<sub>1</sub>-C<sub>4</sub>) and (E<sub>1</sub>-E<sub>3</sub> and F<sub>1</sub>-F<sub>4</sub>) respectively. For both conditioning 2 and 4, independently report the maximum, minimum, and average of the single scan maximum speeds and the maximum, minimum, and average of the single scan minimum speeds by including all peaks and valleys not connected to a steady state operating condition phase.

Motion to add Single-Scan definition as stated above to Section 3 of D7452.



## Single Calibration Tests

W. Venhoff to add validity check for Single Try reference test to TMC protocol. W. Venhoff also to create a table with examples of Reference Sequences to help clarify requirements in D7452.



### L-42-1 Development Updates

- MS Word version of D7452 received from ASTM
- Rework to create L-42-1 version
  - ◆ Stand alone from D7452 (ala L-37-1)
- Ready to begin drafting

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Designation: D7452 - 24a

Date: <Enter Date>

To: Subcommittee <AXX.XX> or Main Committee <AXX> members (both for concurrent ballots)

Tech Contact: <Contact Name, email address/phone number>

Work Item #: <Enter Work Item number>

Ballot Action: Revision of <Enter Standard Designation/Title>

Rationale: <Enter reasons for proposed ballot action. Include an update on previous ballot history, if applicable>

#### Standard Test Method for

#### Evaluation of the Load Carrying Properties of Lubricants Used for Final Drive Axles, Under Conditions of High Speed and Shock Loading<sup>1</sup>

This standard is issued under the fixed designation D7452; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (c) indicates an editorial change since the last revision or reapproval.

#### INTRODUCTION

Portions of this test method are written for use by laboratories that make use of ASTM Test Monitoring Center (TMC)<sup>2</sup> services (see Annex A1 - Annex A4).

The TMC provides reference oils, and engineering and statistical services to laboratories that desire to produce test results that are statistically similar to those produced by laboratories previously calibrated by the TMC.

In general, the Test Purchaser decides if a calibrated test stand is to be used. Organizations such as the American Chemistry Council require that a laboratory use the TMC services as part of their test registration process. In addition, the American Petroleum Institute and the Gear Lubricant Review Committee of the Lubricant Review Institute (SAE International) require that a laboratory use the TMC services in seeking qualification of oils against their specifications.

The advantage of using the TMC services to calibrate test stands is that the test laboratory (and hence the Test Purchaser) has an assurance that the test stand was operating at the proper level of test severity. It should also be borne in mind that results obtained in a non-calibrated test stand may not be the same as those obtained in a test stand participating in the ASTM TMC services process.

Laboratories that choose not to use the TMC services may simply disregard these portions.

#### 1. Scope \*

- 1.1 This test method covers the determination of the anti-scoring properties of final drive axle lubricating oils when subjected to high-speed and shock conditions. This test method is commonly referred to as the L-42 test.<sup>2</sup>
- 1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.
- 1.2.1 Exceptions—SI units are provided for all parameters except where there is no direct equivalent such as the units for screw threads, National Pipe Threads/diameters, tubing size, and single source equipment suppliers.
- 1.3 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use. Specific warning information is given in Sections 4 and 7.
  - 1.4 This international standard was developed in accordance with internationally recognized principles on standardization

Current edition approved Nov. 1, 2024. Published November 2024. Originally approved in 2008. Last previous edition approved in 2024 as D7452 – 24. DOI: 10.1520/D7452-244.



<sup>&</sup>lt;sup>1</sup> This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.B0.03 on Automotive Gear Lubricants & Fluids.

<sup>\*</sup>A Summary of Changes section appears at the end of this standard.

<sup>&</sup>lt;sup>2</sup> Until the next revision of this test method, the ASTM Test Monitoring Center (TMC) will update changes in this test method by means of information letters. Information letters may be obtained from the ASTM Test Monitoring Center, 203 Armstrong Drive, Preport, PA 16229, Attention: Director. This edition incorporates revisions in all information Letters through No. 24-1. The TMC is also a source of reference oils.

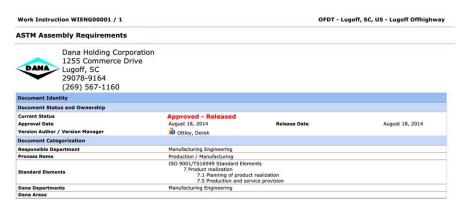
### Call for New Reference Oil

- A request is being made to lubricant suppliers to develop a new high reference oil for L-42 testing.
  - ▲ Any interested lubricant supplier can contact the TMC directly
- The new oil should produce equivalent performance to TMC 117 without the use of any correction factors.
  - ▲ TMC 117 Correction Factors:
    - R: 4 P: 6
  - ▲ TMC 117 Targets:
    - Mean: 23
       Std. Dev: 5.49
    - Low: 13 High: 32



### Add build specs to future test axle orders

- Conf. Call 8.5.25 w/labs and TMC
- Reviewed 20-08 Assembly Requirements Document
- Reviewed detail drawings on Ring, Pinion, and Assembly
- Drawings have specs for bearing pre-load, surface finish, heat treatment, etc.
- Assembly Requirements define Backlash and contact pattern specs
- Contact Dana to confirm which drawings are current
  - ▲ Add those drawing names to the Assembly Requirement document





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### **New Issues**



Motion to Adjourn

Thanks!



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