

L-42 Conference Call Meeting Minutes

Virtual Meeting – WebEx

June 30, 2021

Attendees: voting members in **bold**

D. Beck (TMC)

D. Bell (Afton)

J. Carter (Meritor)

A. Lange (Intertek)

T. Muransky (AAM)

M. Sangpeal (Afton/C)

R. Slocum (LZ)

D. Smith (Intertek)

R. Warden (SwRI)

Call to Order

New Hardware Order

M. Sangpeal reviewed the status of Afton's L-42 hardware order. Batch designation is P8AD132 / C1L637. Axles have been delivered. Observations of the axles and results of initial testing were shared. Quality and test performance appear to be equivalent to previous batch, P8AD132 / C1L446. Details can be found in the attached presentation.

A motion was made to approve P8AD132 / C1L637 hardware for testing as an urgent update, effective 6/30/2021. The same targets from P8AD132 / C1L446 will be used for this new hardware batch. The motion also allowed test runs 2A-2462 through 2A-2465 to be used as reference runs to calibrate the test stand for candidate testing.

Motion: M. Sangpeal

Second: R. Slocum

Approve: 7

Object: 0

Abstain: 0

Adjournment

A motion was made to adjourn.

Motion: R. Warden

Second: R. Slocum

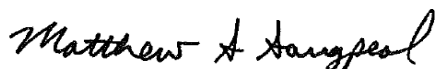
Approve: 7

Object: 0

Abstain: 0

Meeting adjourned.

Respectfully submitted,



Matt Sangpeal

L-42 Surveillance Panel Chairman








Afton's 2021 L-42 Hardware Validation

6/30/2021

Passion for Solutions®

Agenda

-  Call to order
-  Update on hardware delivery
-  Review performance of new batch of axles
-  Vote to approve hardware
-  Adjourn

Hardware Received (P8AD132 / C1L637)

- ▲ Original order was 500
- ▲ 156 gear sets lost in furnace crash at Dana
 - ▲ Out-of-spec case depth
- ▲ 32 gear sets lost to manufacturing problems
 - ▲ Cutting, lapping
- ▲ 312 axles received
 - ▲ 10 Pilot Batch (6/21/21)
 - ▲ 302 Bulk Batch (6/28/21)
- ▲ Will not seek out any more this time

Shakedown Testing of Pilot and Bulk Batch

Pilot Batch Observations

- ▶ Good build quality, no chipped teeth
- ▶ Backlash and turning torque in spec
- ▶ Acceptable contact patterns

Runs 1 - 4

- ▶ No changes to Shock Pots or Ramp Speeds / Times
- ▶ 3 Passing Oils, 1 Discrimination
- ▶ Nearly identical results to C1L446 (current batch)

Runs 5 - 7

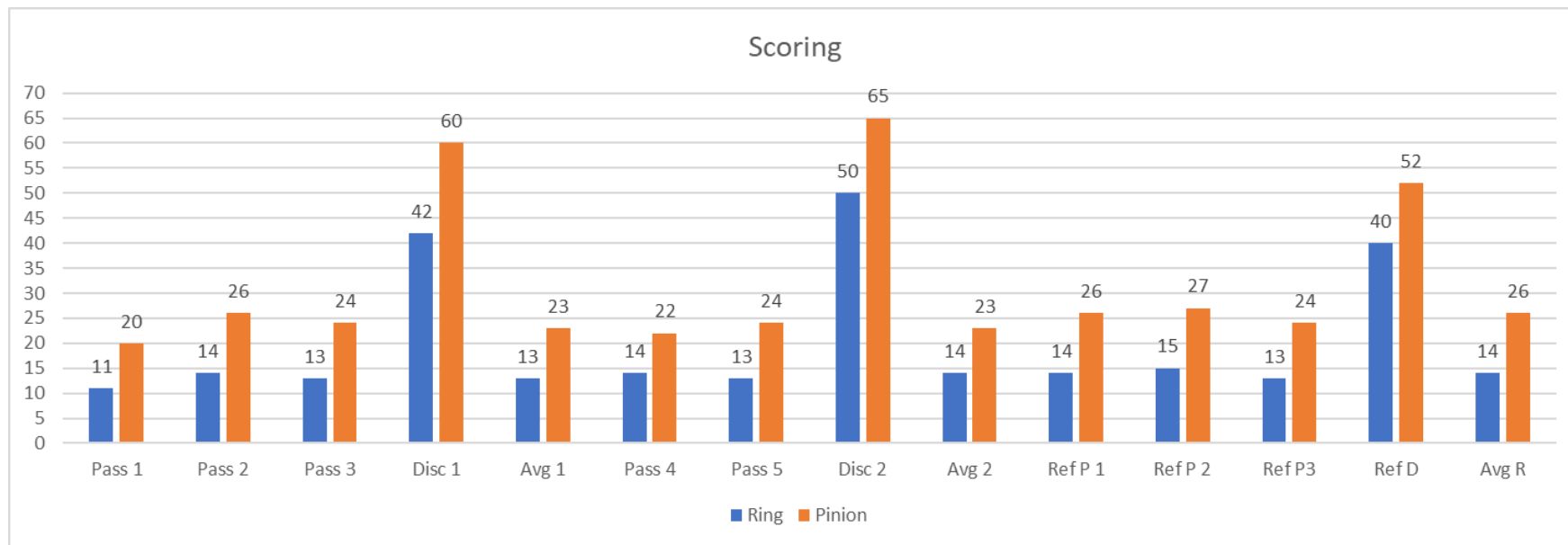
- ▶ Minor change to Cond 2 and Cond 4 Speed (within spec)
- ▶ 2 Passing Oils, 1 Discrimination
- ▶ No significant change in results

 Approved release of remaining axles based on these results

 4 Axles from Bulk Batch tested with conditions from runs 5 – 7

- ▶ 3 Passing Oils, 1 Discrimination

Shakedown Testing



4 Test Reference Sequence

New Batch C1L637

	Test Date Started	Test Date Completed	Stand Run No.	CMIR No.	TMC Oil No.	Drive Side Scoring (%)		Coast Side Scoring (%)			Coast Side Torque (lbf-ft)	
						EOT Pinion	EOT Ring	EOT Pinion	EOT Ring	Shock Series 1 Ring	Shock Series 1 (Average)	Shock Series 2 (Average)
Discrimination	20210629	20210629	2465	153779	119	0	0	52	40	0	-64.7	-328.2
Calibration	20210629	20210629	2462	165171	117	0	0	26	14	0	-67.7	-344.5
Sequence Passing	20210629	20210629	2463	165172	117	0	0	27	15	0	-68.4	-337.6
Tests Only	20210629	20210629	2464	165173	117	0	0	24	13	0	-65.8	-341.3
Passing Reference Oil Test Average								26	14	0	-67.3	-341.1

Most Recent References on C1L446

Stand Reference Oil Test History In Chronological Order												
	Test Date Started	Test Date Completed	Stand Run No.	CMIR No.	TMC Oil No.	Drive Side Scoring (%)		Coast Side Scoring (%)			Coast Side Torque (lbf-ft)	
						EOT Pinion	EOT Ring	EOT Pinion	EOT Ring	Shock Series 1 Ring	Shock Series 1 (Average)	Shock Series 2 (Average)
Discrimination ^A	20210312	20210312	2438	144319	113	0	0	90	70	0	-66.0	-339.1
Calibration Sequence Passing Tests Only ^B	20210312	20210312	2435	152114	117	0	0	26	14	0	-67.7	-345.8
	20210312	20210312	2436	152115	117	0	0	28	15	0	-69.5	-343.4
	20210316	20210316	2439	157312	117	0	0	21	11	0	-65.3	-344.9
Passing Reference Oil Test Average								25	13	0	-67.5	-344.7

Vote to Approve Hardware

Motion to Approve Hardware

- ▲ Urgent Update (effective immediately following vote)
 - Long testing backlog @Afton due to long wait time for axles
 - Allow reference tests from 6/29 to count for next reference period

Current Targets

COAST SIDE PINION SCORING
Unit of Measure: % Scoring
Gear Batch P8AD132

Reference Oil	Mean	Standard Deviation
116-1	23.0	5.49
117	23.0	5.49

33-2

05-2021

Anything else to discuss?

 Motion to Adjourn?