

Report of Meeting
L-37-1 Surveillance Panel Conference Call
Feb 13th , 2025

Attendees:

SwRI -	Mueller , Wright
Lubrizol -	Schaup , Ariemma, Gingerich
Afton -	Sangpeal , Bell, Campbell, Zyski
Intertek -	Lange , Portell
TMC -	Beck , Venhoff
BASF -	Goyal , Margret, Mosher
Dana -	Gibson
Cummins-Meritor -	Carowick , Catania
Army -	Sattler, Comfort
AAM -	Muransky
International Motors -	Morris
Fuchs -	Bender
Oronite-	Warden , Jackson, DeLaFuente
Shell-	Jordan, Schweitzer, Uy
Exxon-	Banas, Jetter
Daimler Truck NA-	Fry, Vanderwal
Richful Lube Additives-	McCullum

Voting Members in **BOLD**

1.0 Membership Review

Changed Voting member from Amy Zyski to Trevor Gibson.

Changed Voting member from Rob Banas to Steve Jetter.

2.0 Meeting minutes Approval

– November 13th, 2024, ASTM Meeting #214

Motion #1 → Lange 1st /2nd Carowick approve the meeting minutes from the November th, 2024, ASTM Meeting. Motion passed unanimously, 11-0-0 (Yes-No-Abstain).

3.0 Action Item Review

- Previous Action Items
 - Nick Schaup to follow up on stats group requests for L-37-1 requests
 - Continue to work towards supplemental rating aid
 - Present Rollout Plan at February 2025 panel meeting

4.0 155-2 Stats Group recommendation

- Stats group found no significant difference between 155-1 to 155-2. They recommended that the targets remain the same for Reference oil 155-2.
- **MOTION #2.** 155-2 was accepted as a reference oil with the targets from 155-1. Acceptance bands were kept for Coated hardware, and traditional targets for uncoated hardware. effective 2 weeks from the meeting date. Motion Passed Unanimously.
- Additionally it was recommended by the stats group to keep the acceptance bands for 04-2021 coated hardware and existing targets for uncoated hardware.

5.0 Form 6 discrepancy

- TMC pointed out that the ASTM Method calls out that both the drive and coast side pre-test photos be submitted, but FORM 6 header only included drive side pre-test photos.

- **MOTION #3** FORM 6 header to be updated to include drive and coast side pre-test photos. Passed UNANIMOUSLY (11-0-0)

6.0 Rating Task Force Update

- Greg Price gave an update on the rating task force's progress since November 2024
- All 51 gears were rated and reviewed at the last rating workshop (Jan 2025)
- All 51 gears had been photographed prior to rating workshop and photos were compared against original ratings
- 15-20 gears were identified as needed photos re-taken.
- Draft rating aid to be presented in the next meeting

7.0 Potential RCMS update rollout plan

- Proposal is to move to a "Deposit workshop" style rating system. See appendix for details.
- If this proposal is accepted, we would have to move to a single workshop per year format instead of the 6 month rotation that currently is in place.
- Concerns were raised about the "scale" shifting as we re-train raters.
 - A possible solution to this was to evaluate the pass fail line on the new scale and consider moving it if the pass fail line seems to have moved.
- The Proposed next steps are as follows:
 - Rating aid gets established
 - Master Raters come up with single answers for parts
 - Committee gets demonstration from one of the master raters and determines if there is a shift in the pass fail line
 - Proposed Rollout goes into effect (Condensed rating workshops with deposit style calibration)

8.0 Hardware Order Update

- Labs received an email that stated there would be a delay in gears being shipped. No time frame was given and Gleason has been unresponsive to requests for an updated timeline
- Labs agreed to take turns reaching out to Gleason each week until we receive an update.

9.0 Adjourn

Motion #4 → Sangpeal 1st /2nd Arjun to adjourn. Motion passed unanimously, 11-0-0 (Yes-No-Abstain).

10.0 Action Item Summary

- **Follow up with Gleason on hardware order timeline**
 - All lab engineers
- **Continue to work towards a supplemental L-37-1 rating aid**
 - **Rating Task Force**

Respectfully submitted,

Nick Schaup
L-37-1 Surveillance Panel Chairman



D02.B0.03

L-37-1 Surveillance Panel Meeting

02/13/2025

Nick Schaup



- Call to Order/Agenda review
- Meeting Minute Approvals
 - Nov 13th, 2024, Panel Meeting Minutes
- Membership review
- Action Item Review
- 155-2 Stats group recommendation
- Form 6 and procedure discrepancy
- Gear Rating Task Force Update – Greg Price
- Rating Workshop color coded proposal
- Hardware Order Update and General Concerns
- Old Business
 - ?
- New business
- Adjournment

Meeting Minutes Approval

- November 13th , 2024 Panel Meeting Minutes

Membership Review

Rob Banas	Steve Jetter	ExxonMobil
Allen Comfort	US Army	
Troy Muransky	AAM	
Matt Sangpeal	Afton	
Arjun Goyal	BASF	
Amy Zyski	Trevor Gibson	Dana
Dylan Beck	TMC	
Jessica Carowick	Cummins	
Anthony Lange	Intertek	
Nick Schaup	Lubrizol	
Caroline Mueller	SwRI	
Rebecca Warden	Oronite	

Total Voting Members = 12

Action Item Review

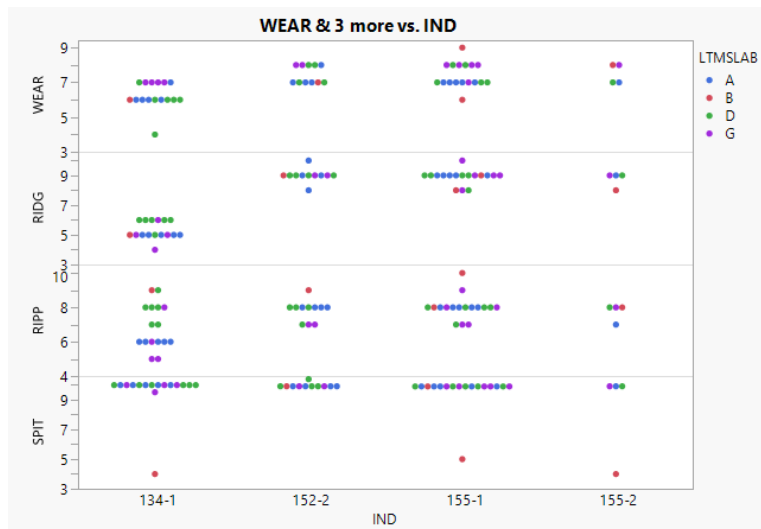
- Follow up with stats group on requests
- Approval Matrix of 155-2 oil standing
- Continue work towards L-37-1 Rating Aid
- Rater Task force update at this meeting
- Color Code Calibration Investigation

L-37-1 Updates

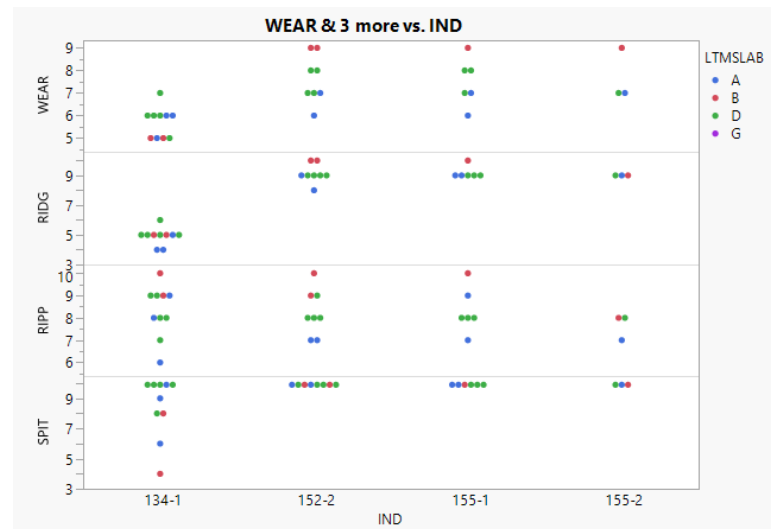
January 14, 2025

Transition from 155-1 to 155-2

- There is no significant difference between 155-1 and 155-2
 - Due to the small sample size (n=7) of 155-2 there is large error around the estimation of 155-2 in some cases (see models in Appendix)



mnpcote
d



uncoate
d

Transition from 04-2014 to 04-2021 Hardware

- For MNPCOATED there is some indication of significant difference between 04-2014 and 04-2021 hardware (see models in Appendix)
 - Keep acceptance bands that are currently in place because there are no tools in the current LTMS to account for this difference
- For UNCOATED there is no significant difference with 04-2021 hardware (see models in Appendix)
 - Current targets can be used for UNCOATED, 04-2021 hardware

APPENDIX

ANALYSIS OF FULL DATA

TESTHARD: UNCOATED, MNPCOATED

BATCH: 06-2018, 12-2019, 01-2020, 04-2014, 04-2021

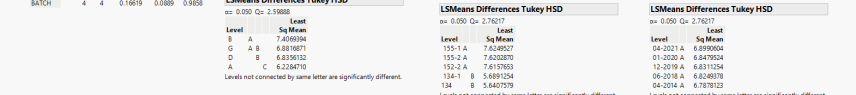
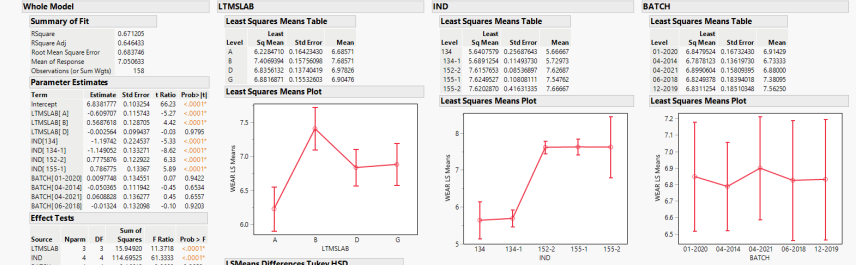
IND: 134, 134-1, 152-2, 155-1, 155-2

VAL CODE: AC, OC, NI

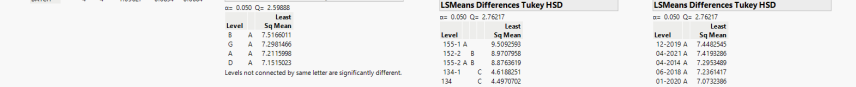
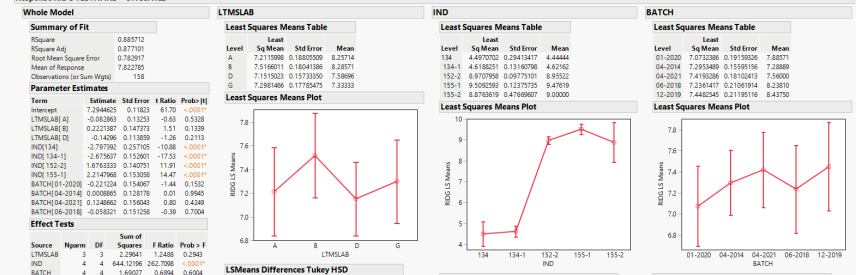
UNCOATED Models

Fit Group TESTHARD - UNCOATED

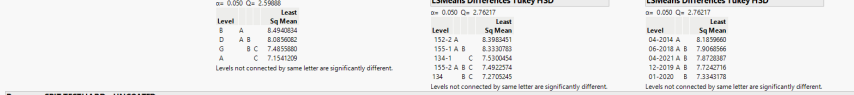
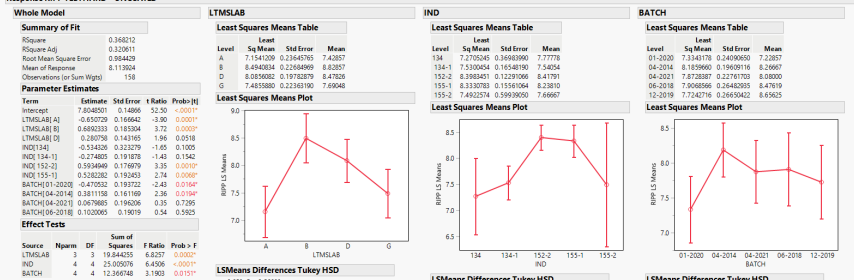
Response WEAR TESTHARD - UNCOATED



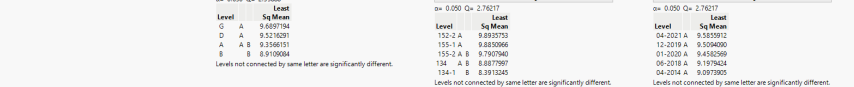
Response RIDG TESTHARD - UNCOATED



Response RIPP TESTHARD - UNCOATED



Response SPIT TESTHARD - UNCOATED



Form 6 discrepancy

- The current form calls out “Drive-Side Pattern Photo”, but the procedure calls out reporting both drive and coast side pinion photos.
- Vote to change the form to “Drive and Coast-Side Pattern Photo”
- What do all the labs do now?

L37 Task Force – 2024/25

Overview of Objectives

Passion for Solutions®

Agenda

- ▲ Overview of Rating Aid Process and Status
- ▲ Gear Identification – Locations that have discrepancies
- ▲ Discussion of Definitions
 - ▲ Gleason vs. Dana Hardware (Tooling vs. Shot Peening)
 - ▲ Unidentified Distress (How to handle. Should it be included?)
 - ▲ Changing “New” to “None” on Ridging/Rippling/Spitting?
- ▲ Rating Exercise – Full Ratings on Gear Photos
- ▲ Multiple Examples in Aid for given rating and category
 - ▲ I.E. (2) examples of a 7? Or a 7.5?
- ▲ July Workshop – Review of Supplemental Draft

Panel Requests

Rating to .5 units (Minimum)

Gear Reference Rating Aid

▲ [TMCGEARDISTRESS2010PR](#)



Numerical Distress Rating Scales for Gears

Numerical Value	Level of Distress
10	None
9	Trace
8	Trace-Light
7	Light
6	Light-Medium
5	Medium
4	Medium-Heavy
3	Heavy
2	Heavy to Catastrophic (Up to 50% of the Gear Tooth Surface not Ratable)
1	Heavy to Catastrophic (Greater than 50% and less than 100% of the Gear Tooth Surface not Ratable)
0	Catastrophic (100% of the Gear Tooth Surface not Ratable)

This is a continuous numerical scale and distresses between the defined levels can be expressed in tenths of a number.

III. Exception to the Continuous Scale Rule

This is a continuous numerical scale and distresses between the defined levels can be expressed in tenths of a number.

variety of different shapes, however, it is the raters' responsibility to estimate the size of the spall based on the geometrical shapes, or the measurements provided on the template, as a guide to determine the rating. It is then assigned the corresponding numerical or verbal rating.

- If a spall is determined to be larger than a particular template size, then the next more severe whole number rating should be assigned.

6/29/01

34

Supplemental Rating Aid Process (Gleason Pinions)

51 Pinions

- ▶ Gears have been rated by Afton, LZ, Intertek, and currently as SwRI

Ridging/Rippling/Wear to be rated (1.0 Units)

- ▶ Ridging/Rippling Priority

Gears will be identified based on data set results

- ▶ Criteria - Whole/Half Merit based on data set (Average to scale)

Photos will be printed, and presented at January Workshop

- ▶ Photos do require ratings as well. This data will be crucial for accuracy
- ▶ Photos do not always accurately represent level of distress

Best Candidates

- ▶ Hardware/Photo ratings that are in closest agreement

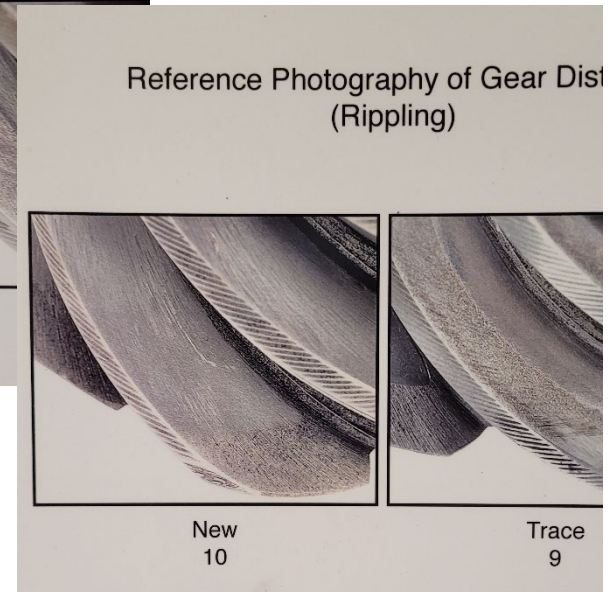
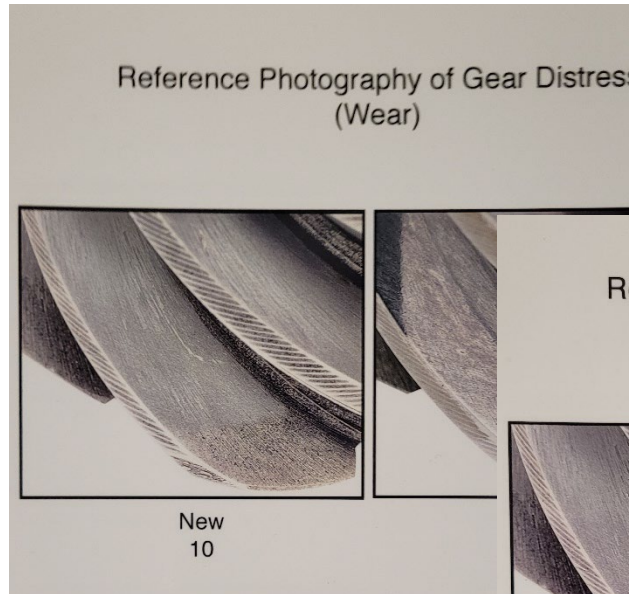
“New” vs “None”

Reference Aids

- ▲ Wear/Rippling/Ridging state
“NEW” = (10)
- ▲ Rippling/Ridging should state
“NONE” = (10)
- ▲ 10.0 = Absence of distress
(p.37)

Test Parts

- ▲ Can no distress be present?
YES



Pinion Discrepancies

Ridging

- ▲ 662,702,731,663,641

Rippling

- ▲ **625,626,719,731,751**,641,664,690

Unidentified Distress – Does it exist? Should we have representation in the Supplemental Rating Aid to differentiate it from the other categories?

Wear

- ▲ 716, 659

Gleason vs. Dana

- ▲ Gleason – No Tooling Marks
- ▲ Wear step at Toe and Heel less prevalent
- ▲ Wear step in Root more prevalent?

How do we redefine in Supplemental Aid?

Appendix

Passion for Solutions[®]



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Test Monitoring Center

<https://www.astmtmc.org>

Gear Rating Workshop Update To Surveillance Panels

February 2025

Background

- **August 2024:** The L-37-1 surveillance panel asked the rating task force for a plan to correct the rating variability that currently exists in the L-37-1 test
- **November 2024:** Previous to this meeting the rating task force asked the TMC for an overview of how the deposit rating workshop calibration process works, and how it could be applied to gear rating.
 - A takeaway from this meeting was for the TMC to provide a potential roll-out plan for the gear calibration workshop to move to this model.

SLIDES FROM NOVEMBER

Current Rater Calibration

L-37 and L42 use the RCMS System:

- TMC mails parts to the raters for a calibration attempt
- The parts are rated, and the results are sent to the TMC
- If the ratings fall within the target range, then the rater calibrates

Current Gear Workshop

There are no pass/fail requirements for ratings at a gear workshop.
Participation based.

Deposit Rating Workshops

Rater calibration is based on rating performance at workshops

- Session A rates to set the targets of the parts
- Session B rates to attempt to calibrated based on those targets
- Each rater receives a color code that determines their calibration status.

Deposit Rating Workshops

Three values are used for the color code.
LT1, LT2, and STD(Yi).

Blue: LT1 $\geq 85\%$, LT2 $\geq 98\%$, STD(Yi) ≤ 1.2

Red: LT1 $\geq 80\%$, LT2 $\geq 95\%$, STD(Yi) ≤ 0.85

White: LT1 $\geq 60\%$, LT2 $\geq 90\%$, STD(Yi) ≤ 0.75

Yellow: Any value outside requirements.

- If a rater receives a blue, red, or white color code then they calibrate
- If a rater receives a yellow color code then they do not receive calibration
 - The rater can attempt to calibrate again at the TMC.

Gear Workshop Example With Color Codes

- Format applied to January 2024 gear workshop data:

ASTM Gear Calibration Workshop
Intertek Automotive Research, San Antonio, TX, January 16-18, 2024

		L-37 PINION GEARS									
SET #	DISTRESS	22	34	36	37	38	42	47	48	50	54
	COUNT	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0
	LT1	37	43	39	41	42	42	38	40	37	35
	LT2	47	48	48	48	47	48	48	48	48	46
	LT3	48	48	48	48	48	48	48	48	48	48
	GT3	0	0	0	0	0	0	0	0	0	0
	STD(Y(i))	0.6	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.6	0.7
	LT1%	77%	90%	81%	85%	88%	88%	79%	83%	77%	73%
	LT2%	98%	100%	100%	100%	98%	100%	100%	100%	100%	96%
	Rater Color Code	WHITE	BLUE	RED	BLUE	BLUE	BLUE	WHITE	RED	WHITE	WHITE

ROLLOUT PLAN

Gear Calibration Based Workshop

- Condense gear rating workshops to one a year instead of two
 - Location can rotate between the labs or be hosted by the TMC
 - All gear raters will be required to attend a single workshop
- The TMC will build a website for raters to submit their workshop ratings and receive a color code for each test type.
 - Something similar already exists for the deposit workshops
- Raters will receive a color code to determine their calibration status
 - If passing, then rater calibrates for one year
 - If failing then rater is not calibrated
 - Rater is then allowed to come the TMC to attempt to re-calibrate
- After the first calibration based workshop then raters no longer need to request RCMS parts for calibration (L42 and L371)

Things to Consider

- Currently the ratings oversight for gear test type is owned by each individual test panel
 - Example: L-37-1 panel owns the rating oversight for the L-37-1 test type
- In order to vote for this change each individual gear test panel would have to conduct a vote to make this change to the gear rating workshop.

Hypothetical Schedule

- The TMC is requesting 4-6 months notice to prepare for this workshop change (time to prepare website)
- Example of if the vote passed today:
 - RCMS document and test procedure will be updated
 - The first calibration based workshop could take place between July – November 2025
 - All gear raters would be required to attend
 - Raters would then be calibrated for 1 year when then next rating workshop takes place
 - RCMS parts will continue to be shipped until this first workshop takes place

Document Changes

- RCMS Document:
 - Complete document overhaul, remove L37RC and L42RC requirements, revise new rater section, workshop attendance section
- Section 12.5 of the L-33-1 test procedure
 - Rater must meet requirements in RCMS document
- Section 12.2.4 of the L-37-1 test procedure (INFO LETTER NEEDED)
 - Rater must attend a calibration workshop within the last twelve months and is calibrated according to the RCMS document. **RCMS cal period is every 6 months**
- Section 11.1.2 of the L-42 test procedure
 - Rater must participate in gear rating workshop within the previous twelve months
- Section 11.6 of the L-60-1 test procedure
 - Rater must meet requirements in RCMS document



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Hardware Order Update

- Received an email from Chris Huber on 1/22/2025 that contained this quote:
 - “Gears are currently being cut and pinions will follow. We’re anticipating seeing a log jam at heat treat operations due to some furnaces being down. The effect of this is something we’re working through scheduling and will follow up.”
- Multiple labs have reached out, no response. To arrange a system for all labs to reach out on a continual basis until we get a response.
- Original ship date was this Friday, and 3/14/2025.



D02.B0.03

Old Business

New Business

Adjournment