

Report of Meeting
L-37 Surveillance Panel Teleconference

February 19, 2009

Attendees:

Dana -	Miller , Guzikowski,
SwRI -	Koehler
Lubrizol -	Bartlett, Gropp, Greene , Graziano
Afton -	Koglin , Rose
Intertek-Parc -	Smith
TMC -	Lind

Voting Members in **BOLD**

1.0 Approval of Minutes:

- **February 11, 2009 SP Meeting.**

Motion # 1 → Mr. Smith/second Mr. Lind to approve the minutes as presented. Motion for approval as written was unanimous with a vote of 6 for, 0 opposed, and 0 abstentions.

2.0 Summary of Meeting Discussions

2.1 Retrofit Hardware Update –

An action item from the last SP meeting was for the panel to come up with a test matrix and pinpoint exactly how many axles are needed for the pilot build. The following matrix and build comments were proposed at the last meeting:

Pilot Batch Matrix proposal:

- 1) Ft. Wayne, process 20 ring and 20 pinions to duplicate the P4L792/V1L417-2005 batch.
 - a. 10 non-lubrited
 - b. 10 lubrited (use custom coatings)
 - c. Assemble & ship non-lubrited retrofit to each of 3 labs first so testing can immediately commence
 - d. Assemble & ship lubrited retrofit to each of 4 labs second and test
- 2) Reference tests to be conducted totaled 14 tests at four labs on both hardware types. The extra hardware would/could be used to cover any aborted tests or other test needs identified by the panel. Here is the proposed plan:

a.	TMC 152	- 2 runs non-lubrited	- 2 runs Lubrited
b.	TMC 153	- 2 runs non-lubrited	- 2 runs Lubrited
c.	TMC 155	- 2 runs non-lubrited	- 2 runs Lubrited
d.	TMC 134	<u>-1</u> run non-lubrited	<u>-1</u> run Lubrited
	Total	7	7
- 3) Bartlett to work with Horvath (Maumee) to insure both lubrited and non-lubrited hardware is available for retrofit at Maumee facility. **We must not allow mixing of lubrited and non-lubrited housings and batch lot hardware** for consistency and standardization concerns. The order of non lubrited axle return to Maumee for retrofitting is:
 1. Lubrizol
 2. Afton
 3. SwRI

- 4) The Panel decided that we do not want to run low temperature testing at this point in time. We will do that as part of the final matrix.
- 5) Dana to perform full measurements per normal builds to insure consistency and success.
- 6) It was presumed it would take 1 week to ship axles and that the labs would work diligently to run the tests within 2 weeks after receipt of the axles.

Proposed Pilot batch test matrix:

Non-Lubrited:

	Axles Shipped
Lab SwRI	3
1. 155	
2. 152-1	
Lab Lubrizol	3
1. 155	
2. 153-1	
3. 134	
Lab Afton	4
1. 152-1	
2. 153-1	

Lubrited:

	Axles Shipped
Lab SwRI	3
1. 134	
2. 152-1	
Lab Lubrizol	2
1. 153-1	
Lab Afton	2
1. 155	
2. 153-1	
Lab Intertek PARC	3
1. 155	
2. 152-1	

Motion #2 → Koglin/Koehler – Approve Pilot Matrix plan, reference oil assignments to each lab, and shipment quantities
 Vote unanimous, 6-0-0

Steel Order and Timing update:

Dana (Papodemous, Miller) - discussed with the panel the projected timing of the ring and pinions being complete for both pilot and final batches. Best Guess is **April/May for pilot batch** and **June/July for all ring and pinions** to be produced.

- Presrite forgings would be available around March 9th.
- Colfor/Mac Steel will roll week of February 23rd, forgings available March 22nd.

Action Item # 1 - Papodemous will put together Gantt chart to detail best guess at timeline of build from pilot batch through final batch. This will include production, coating, retrofit and shipping. He will have this chart available for next teleconference on March 5th.

Papodemous - Reported that the ring gear second draw furnace has been removed from the floor about 6 month's ago. Lots of questions. May have to ask Dana to put the furnace back in or may have to outsource this part of the production (different than the 2005 batch. Generally though, should not be of great concern. If the steel is overdrawn, it is too hard. If under drawn, it is too soft. We are asking Dana to put this into the plan. Dana agreed to have an internal meeting to discuss resolution and will report back to panel.

2.2 Chipping Definition –

Chipping definition was discussed and modified to the definition below:

Chipping, n – Ring and pinion gears - A condition caused in the manufacturing process in which a small irregular cavity is present only at the face/crown edge interface. The edge-chipping phenomenon occurs when sufficient fatigue cycles accumulate after tooth surface wear relieves the compressive residual stress on the tooth profile side of the profile-to-topland interface. All chipping within 1 millimeter of the face/crown edge interface is to be called chipping, not pitting/spalling.

- Note 1: Anything which extends beyond a distance of 1 millimeter is to be rated as pitting/spalling and included in the final rating.

Add:

Annex A9.5 – Gear rating rules: Any chipping observations are to be noted in the comments section of the test report.

Motion #3 → Koehler/Smith – Issue information letter adopting above chipping definition, note 1, and place requirement for reporting chipping in the comments section of the final report.

Vote 4-0-2

Action Item # 2 – Greene/Bartlett/Lind – Update CRC manual 21 with relevant information.

Motion #4 → Lind/Bartlett – Place RCMS pinions 44 and 45 back into RCMS

Vote 5-0-1

Action Item # 3 –Bartlett – provide digital photos of RCMS pinions 44 and 45 to TMC

2.3 Rating Workshop Discussion

Lind: Cost of workshop is split up by number of raters slated to show up. The TMC expected 10 raters at the last workshop; however, only 6 showed up, TMC took loss of \$1000 because of this.

There are three main options in going forward:

Option 1: Have workshop at fixed location every time. This location would preferably be a lab to reduce cost. It would also help costs to be within driving distance of the TMC (reduces shipping costs)

Option 2: Rotate from Lab to Lab. The requirements would be: temperate control and enough space for 10-12 raters (typically 20 by 30, 8 to 10 chairs). 3 of 4 labs could avoid shipping. This would help to reduce costs while not penalizing any one lab.

Option 3: Stay as is; rotate from city to city at hotels. Lind must know raters attending 3 months in advance and if a rater doesn't attend, the lab will still be responsible for the costs.

PARC – unable to provide facilities to do workshop

After some discussion, Lubrizol volunteered to host the next workshop onsite. The next workshop will be at Lubrizol July 21st through 24th. The labs and TMC will revisit the long term plan at a later date. Afton volunteered to host the January 2010 workshop.

3.0 Adjournment

Motion to adjourn → Koglin/Smith

Meeting Adjourned at 11:25pm

The next meeting will be a HTF teleconference meeting on **Thursday, March 5th, 2009 at 10am EST**. Call in number is **608-250-0194 code 324160**.

Respectfully submitted,



Galen Greene
L-37 Surveillance Panel Chairman