

**L-37 Surveillance Panel Teleconference Minutes**  
**Thursday, 10/16/2008**

**Attendees:**

Dana -	<b>Basset, Miller, Guzikowski, Fett, Horvath, Okamuro</b>
SwRI -	<b>Koehler</b>
Lubrizol -	<b>Bartlett, Gropp, Graziano</b>
Afton -	<b>Koglin</b>
Park -	<b>Smith</b>
TMC -	<b>Lind</b>

**6 voting members**

The L-37 Surveillance Panel teleconference call was directed to convene at this time by the Panel at its October 9<sup>th</sup> teleconference meeting to review testing options and progress to date.

Agenda:

- Approve the October 9, 2008 SP teleconference meeting minutes.
- Review pending action items.
- Review next round of SwRI modified test condition matrix.

**Approval of Minutes**

**Motion #1:** Mr. Koehler motioned/ Second Mr. Koehler – That the October 9, 2008 meeting minutes be approved as written. Motion passed unanimously with a voice vote of 6-0-0.

**Retrofit Lubrited Hardware – Review and Discussion**

**Prior Action Item Review & Update:**

- **Dana/Labs** - At the September 4 panel teleconference call the labs were directed to convene and draft a letter to Dana representatives specific to laboratory questions and issues that were directed to Mr. Brazeau, Miller, Ramsey, Fett and Guzikowski. Most questions have been answered, still waiting on Dana Root Cause Analysis for testing materials and specifications summary. **Open**
  
- **Dana/Labs** - The L-37 Surveillance Panel is requesting Dana to immediately begin the process of manufacturing a new batch of pinions and rings for use in the L-37 test. This hardware should be manufactured using the same specifications for metallurgy, hardness, case depth, surface profile, etc. as was used in the V1L417/P4L792 batch of non-lubrited hardware.  
The intent of the Panel is that a portion of this batch will remain non-lubrited, and that a portion of this batch will be lubrited and a sufficient quantity of pinions and rings should be manufactured to allow for the V1L500/P4T813 batch of non-lubrited hardware to be retrofitted with these new pinions and rings, as well as for a sufficient quantity to be lubrited so that they may be used to retrofit the V1L500/P4L870A batch of lubrited hardware (both the new and the retrofitted subsets of this batch) with these new pinions and rings.

1. All companies who intend to purchase a portion of this new batch of pinions and rings are to provide Dana with an initial indication of the size of their order no later than the end of the business day on Friday, October 24.
2. Formal purchase orders are to be provided to Dana no later than the end of the business day on Friday, October 31.
3. Dana is to provide the Surveillance Panel with a projected date for the availability of this hardware no later than the end of the business day on Friday, November 1, 2008.

**Action Item:** Since Mr. Ramsey was not on the October 16 teleconference, Miller is to contact Ramsey to provide an official quote to the labs by Monday, October 20<sup>th</sup> so the labs can move forward with their respective purchase order processes.

**Open.**

### Continued Reduced Torque Testing on the Retrofit Lubrified Axles

1. **Gear Conditioning Phase** will be conducted per the Standard, no change.
2. **Gear Test Phase** – Test alternate conditions will be provided by Dana:
  - o 80 wheel rpm and reduced lbf-ft torque per Dana and Panel direction.
  - o Axle oil temperature will be the same as a standard test.
  - o Test length will be 24 hours of on-test time.

### Discussion and Comments

During the October 9, 2008 SP meeting, it was agreed that SwRI would run 1 run test each on TMC 134 & 153-1 initially for discussion today. The torque load at pinion tooth surface contact would be reduced to 11% (1287.5 lb-ft at each wheel for the set point).

**Koehler** – Reviewed the testing results for both oils that were conducted on non-polished toplands with the build pattern to flank neutral.

<u>TMC 134</u> (discrimination/fail oil)			
<u>Ring</u>		<u>Pinion</u>	
Wear	6.0	Wear	6.0
Rippling	9.0	Rippling	8.0
Ridging	7.0	Ridging	7.0
Pit/Spall	9.7	Spitting	6.0
Scoring	10.0	Scoring	10.0

There is some pinion tooth surface cracking but no teeth have failed.

<u>TMC 153-1</u> (pass oil by definition)			
<u>Ring</u>		<u>Pinion</u>	
Wear	8.0	Wear	7.0
Rippling	10.0	Rippling	9.0
Ridging	9.0	Ridging	9.0
Pit/Spall	9.9	Spitting	8.0
Scoring	10.0	Scoring	10.0

Spalling noted on 2 pinion teeth. Surface cracks on all pinion teeth  
No broken teeth.

It was noted that, with respect to the standard, if both tests had been actual candidates, both would be classified as 'valid' because there were no broken teeth. It is most encouraging that we appear to have shifted out of the realm of tooth breakage. What we are seeing appears to be a surface cracking phenomena (the outer level of the pinion appears to be shifting on the core metal) and a precursor to spalling.

Since we only have 2 pieces of hardware left (non-polished topland, flank neutral build pattern) much discussion ensued on what we should do next. Do we; (1) Stick to the plan and run the two tests on TMC 152-1 and 155 using the remaining two pieces of hardware? (2) Conduct a second test TMC 153-1? (3) Run at least one test on the 14 % reduced torque load? The chairman reminded the panel of the agreement made last week and suggested that the panel stay on target and finish item 1.

**A motion** was then made by Koglin/second Koehler- Instruct Data to assemble 4 more axles using the hardware that has non-polished toplands and to flank neutral build. Axles to be shipped to SwRI for testing at the '14 percent' contact stress reduction option. Horvath confirmed that the axles could be assembled and shipped to SwRI by Wednesday, October 22. The panel voice vote was 5-0-1.

The panel consensus was to continue with option #1 and report the two results for our next teleconference call, which the panel agreed to move to Tuesday, October 21. Koehler agreed to conduct the remaining two tests into and out of this weekend.

As for running more donated tests on the 14 % reduced contact stress, he indicated that SwRI would need to revisit discussions on how many more donated tests they are willing to run.

### **New Lubrited Hardware – Discussion**

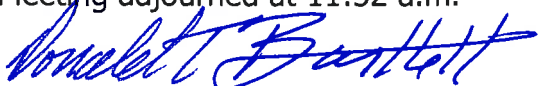
Continued testing was put on hold by Panel as we focus the attention on the retrofit hardware first.

### **Non- Lubrited Hardware – Discussion**

Continued testing was put on hold by Panel as we focus the attention on the retrofit hardware first.

- **Next Meetings will be a Surveillance Panel Teleconference**
  - **Meeting Tuesday, October, 21, 2008 at 10:00 a.m. EDT.**
  - **Call in info is 608-250-0194, code 324160.**

Meeting adjourned at 11:52 a.m.



Donald T. Bartlett, L-37 SP Chairman