

Report of Meeting
L-37-1 Surveillance Panel Teleconference

January 18th, 2018

Attendees:

SwRI -	Warden
Lubrizol -	Venhoff , Drlja, Marsic, Ebner, Slocum
Afton -	Donovan , Bell
Intertek -	Smith , Trader
TMC -	Parke , Beck
ExxonMobil -	Kanga
AAM -	Dharte
BASF -	Goyal
Dana -	Guzikowski
Gleason -	Dennis, Reardon

Voting Members in **BOLD**

The meeting was called to order at 3:00PM EST.

1.0 Discussion of Metallurgical Analysis Findings on Gleason Non-lubrited Gears

Both Gleason and Dana performed metallurgical analyses on Gleason non-lubrited gear sets exhibiting the “undefined distress.” Both analyses came to the same conclusion and characterized the “undefined distress” as a form of adhesive wear. Lots of discussion ensued, covering potential options from the hardware processing side as well as test conditions to further investigate at the test labs. A. Reardon suggested that when he has seen this distress in the past, many times it is an indication of improper gear “break-in” or conditioning. The following two sections capture the options discussed on the teleconference. W. Venhoff asked that the labs, as well as the other S.P. participants, continue to consider options to remedy this situation for continued discussion at the February 7, 2018 meeting.

2.0 Hardware Process Options to Remedy Adhesive Wear Distress

1. W. Venhoff asked if case depth had any potential effect on the formation of the adhesive wear distress and Gleason advised that it is quite possible. One option is to adjust the case depth spec. from 0.050-0.060” to 0.055-0.065”.
2. R. Warden asked if lapping (instead of grinding) was an option and Gleason did inform that they have the capability to lap the gear set. The option was considered to remove the shot peen from the gear tooth contact surfaces without disturbing the shot peen in the root area where it is most critical.
3. J. Guzikowski asked about options for designing a “relief” in the gear set which would allow the current manufacturing process to be altered slightly to not have shot peen be the last step. The “relief” would allow final grind to be the last processing step without disturbing the shot peen in the root area.

3.0 Test Condition Options to Remedy Adhesive Wear Distress

1. A. Reardon suggested adjusting the wheel load down by 10-15% during the gear conditioning phase, keeping all other conditioning phase and test phase parameters the same as current.
2. R. Warden shared results from two tests where the conditioning phase was run with a duration of 200 minutes vs. the standard 100 minutes with mixed results. This is a potential area for further investigation.
3. D. Smith suggested that we potentially try a stepped-load conditioning phase where the wheel load is gradually increased over a set period during the conditioning phase.

4.0 Adjournment

Meeting Adjourned at 4:00pm EST

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'W. Venhoff', written in a cursive style.

Wes Venhoff

L-37-1 Surveillance Panel Chairman