Nissan Task Force
Teleconference Meeting Minutes
July 23, 2009

1. The group reviewed the objectives of the task force.
    a. Solve the mild severity shift problem
    b. Ensure that the industry has enough calibrated stand capacity for GF5.

2. The current status of the industry:
    a. Intertek has 2 stands calibrated and 1 more available that is in shakedown
    b. SWRI has 3 stands calibrated and 2 more available
    c. LZ has 1 stand calibrated
    d. Ashland has 1 stand available

3. In regards to the mild severity shift, there is strong data showing that driveline stiffness and engine mounting damping are the main contributing factors. SWRI has conducted several modeling experiments and correlated the stiffness levels to severity. At Intertek, the same effect was seen when switching from an undamped system to a damped system. In addition, the Intertek lab showed that failed mounts caused high levels of vibration and also contributed to a mild result. Eric Liu has provided us with the results of his modeling experiments (See Attachment 1) Eric stated that if the resonance point of the driveline system occurs at 800 rpm the test results will shift mild.

4. Discussion continued on how to address these issues. It was agreed that a minimum level of stand maintenance should be adopted into the procedure. It was recommended that engine mounts and driveline torsional couplings be replaced every other reference cycle. This presents a cost issue with labs that have the rubber element built into the drivelines. Furthermore, the engine mounts at some labs may not be available. At the next Surveillance Panel, meeting there will be a motion to incorporate some level of maintenance that will satisfy the intent of the procedure and allow labs flexibility in replacing hardware depending on what they use. In the meantime, the labs were going to check on the availability of their engine mounts.

5. A concern was voiced on replacing driveline elements in the middle of a reference cycle. Some felt that this may change the severity of the stand and another reference test may be required. Buscher argued that the system was not being changed by replacing a set of U-joints or failed couplings. However, changing a torsional coupling may affect the resonance point. This is an on going debate and will be further discussed at the next Panel meeting.

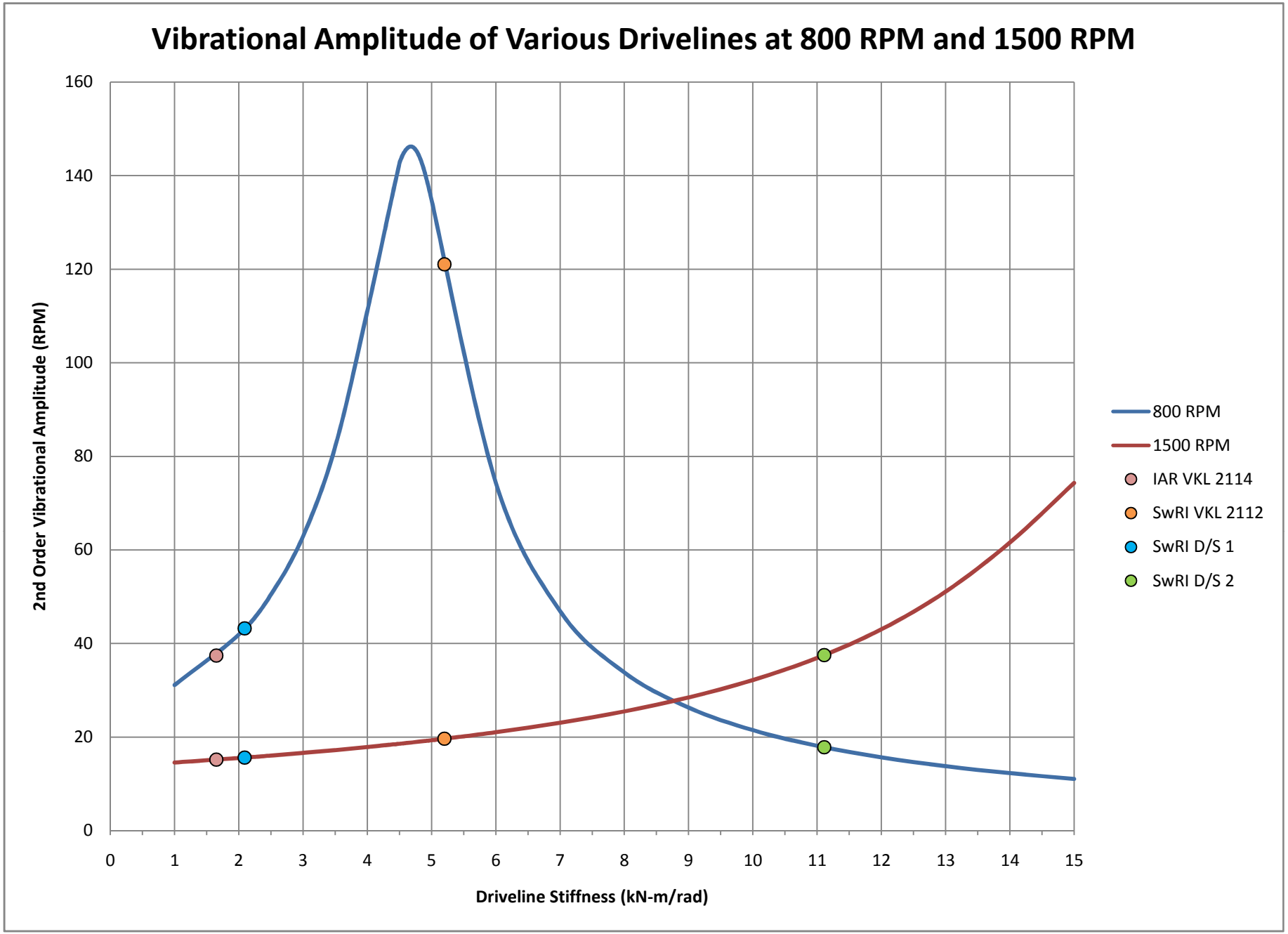
6. Ricardo Conti presented a theory on why we are seeing less wear with more vibration. His theory is that the extra vibration is producing more heat at the contact points between the cam and followers. This extra heat activates the additive package. It is a good theory, however. The Intertek run on EF411 oil

points more to a mechanical phenomena that we yet do not understand. The question is whether or not to spend the resources to try and solve this. The group felt that this was not part of the Task Force objectives. Further efforts will be addressed at the Surveillance Panel level.

7. The agenda included a discussion on the PCV plumbing. Both SWRI and Intertek are using a IIIG cart to measure blowby and this requires a cut-off valve between the intake and the PCV valve. Back in May of 2004, a motion was passed to allow the use of this system but no information letter was ever issued. The procedure will be amended to incorporate this method of measuring blowby and the required plumbing. Bill Buscher and Rich Grundza will work on changing the wording and adding a drawing to the procedure.

8. There is an open action item to review load cell capacities at he labs and perhaps consolidate to one range. The task force feels that with the current vibration level findings, there is no longer a need to do this and should be dropped.

9. At the next Surveillance Panel meeting, a summary of task force activities and findings will be presented. At that time, a motion will be brought forth to declare task force objectives completed and no further action necessary.


Vibrational Amplitude of Various Drivelines at 800 RPM and 1500 RPM
2nd Order Vibrational Amplitude (RPM)
160
140
120
100
80
60
40
20
0
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Driveline Stiffness (kN-m/rad)
800 RPM
1500 RPM
IAR VKL 2114
SwRI VKL 2112
SwRI D/S 1
SwRI D/S 2