

R41-04 ASEP 2.0 Detroit Demonstration

Sept 25 to 26 2019

Demonstration Test Vehicle

Harley-Davidson Street Bob FXBB model

1745 cc V-twin

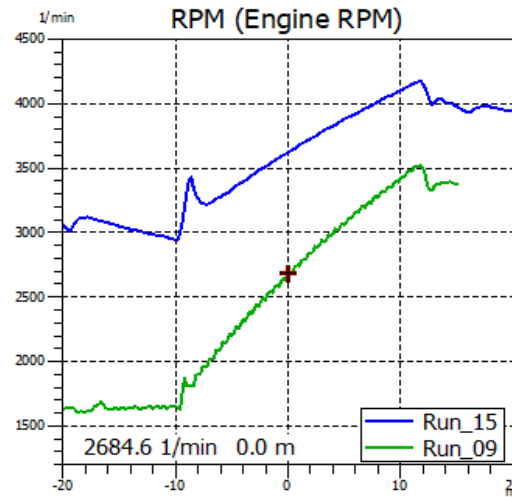
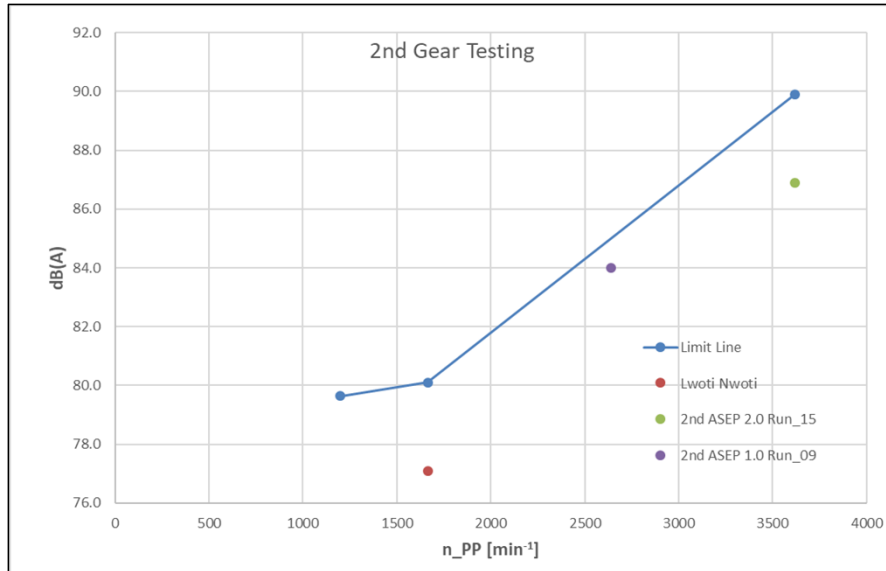
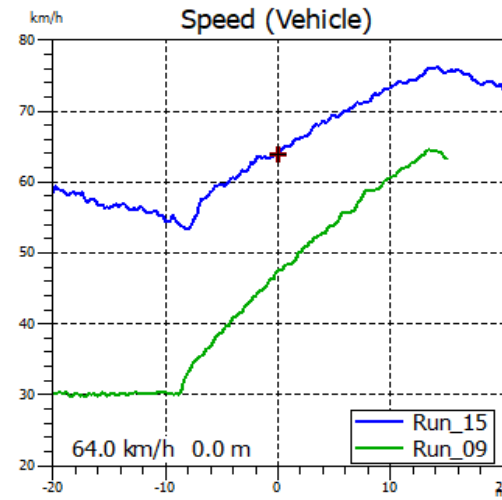
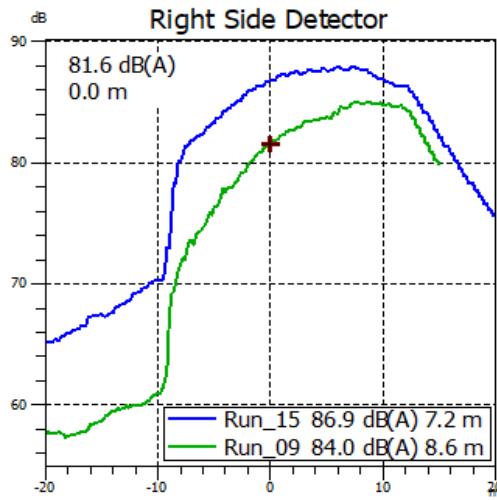
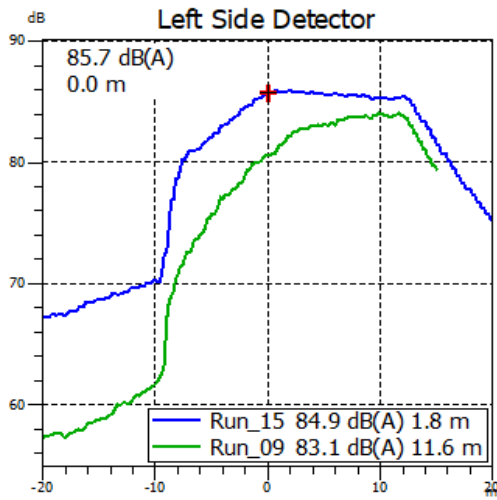
PMR = 170

S = 5450 rpm

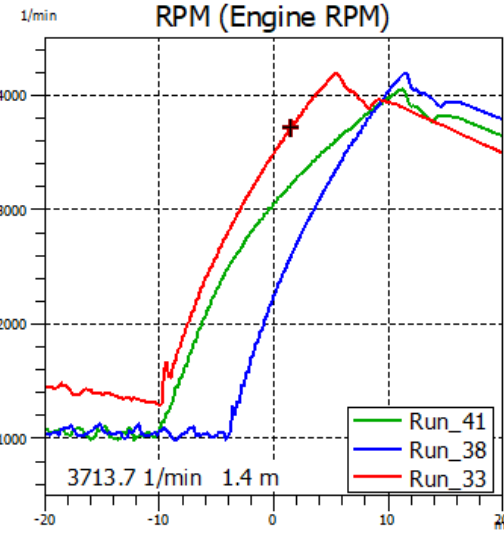
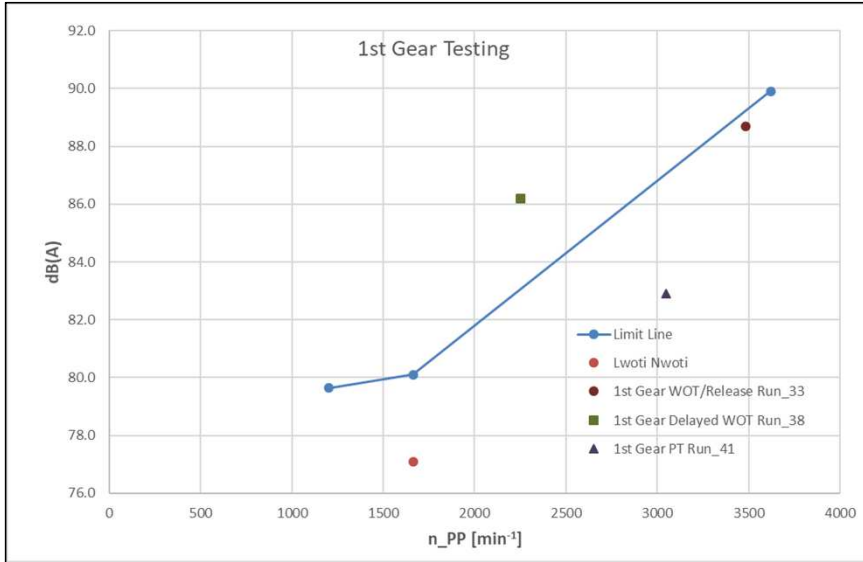
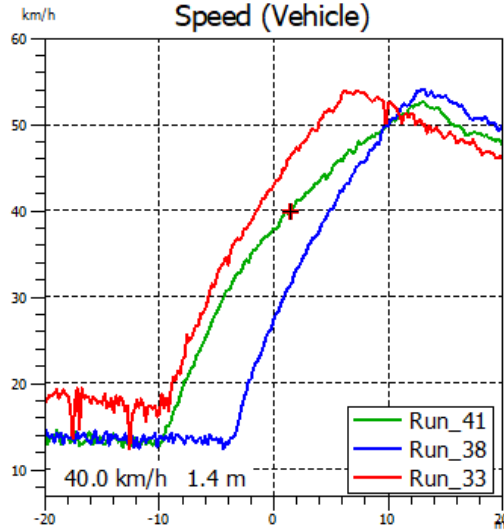
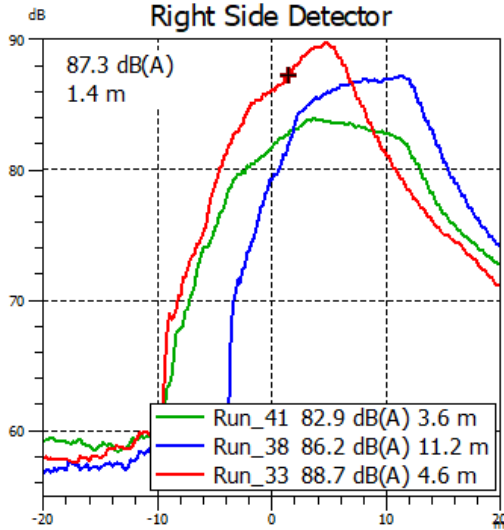
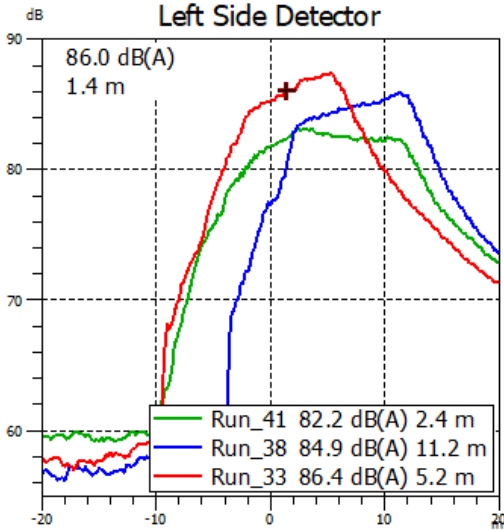
Test Plan

- Test 1 (slide 4)
 - Current ASEP: 2nd gear ASEP reference point high, WOT
 - ASEP 2.0: 2nd gear, reference point high (= with new exit target 80% or 100 km/h), decreasing entry speed, WOT
- Test 2 (slide 5)
 - 1st gear, enter at just above idle, WOT or high throttle,
- Test 3 (slide 6)
 - 5th gear ASEP 2.0 exit target 80% of S, or 100 km/h, decelerating entry speed, WOT
 - 5th gear ASEP 2.0 target 70 km/h midpoint, PT, accelerating entry speed

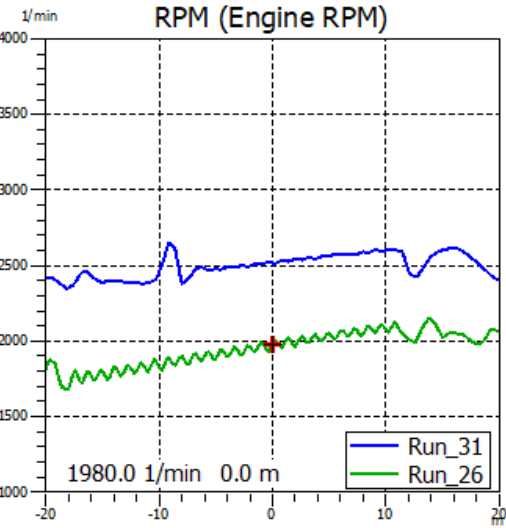
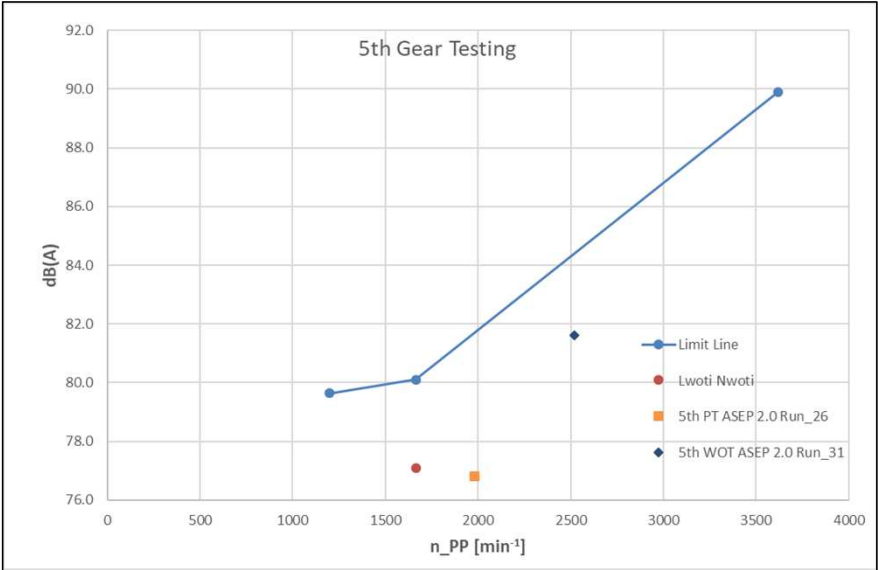
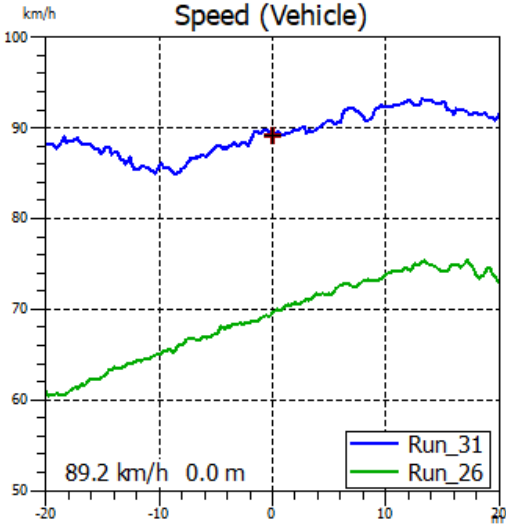
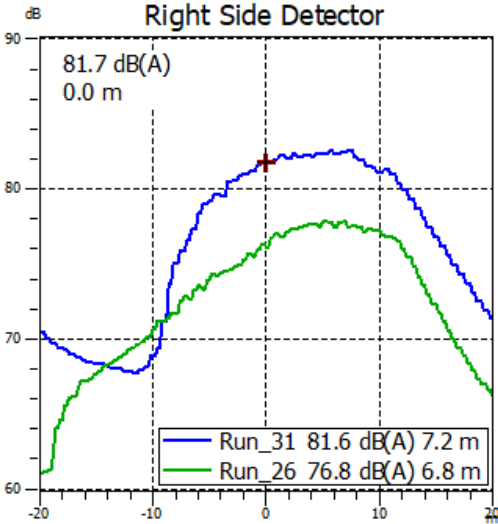
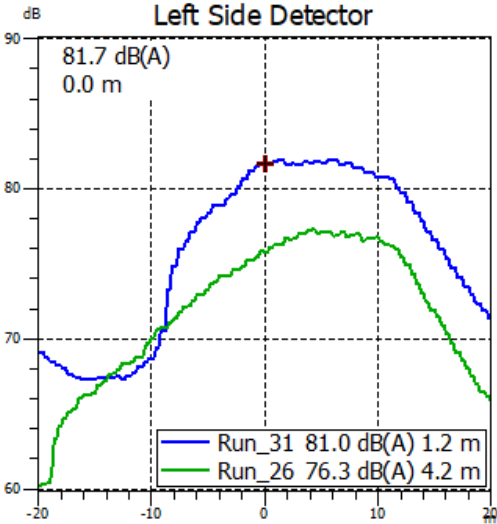
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Conclusions

- 1st Gear Testing Procedure

- Run 33
 - WOT to rpm Limit then release throttle – not acceptable
- Run 38
 - Delayed throttle to rpm Limit at “BB” – not acceptable
- Run 41
 - Partial throttle to rpm limit at “BB” - acceptable

- 1st Gear Results

- Engineering design will be required to reduce the levels and move away from the ASEP limit line
- WOT to rpm Limit produces worst case
- Partial throttle produces acceptable results

Recommendations

- 1st Gear Testing
 - Acceleration must start at “AA” as delaying the acceleration causes n_{pp} to be too low and the noise level exceeds the limit line - unacceptable
 - In order to avoid an exceedance of $0.8xS$ in 1st gear, apply partial throttle between “AA” and “BB”.

Thank You

- From IMMA and USMMA
- Questions?