Snowmobile Sound Level Measurement

Presented by Gary Eddy, Snowmobile Administrator
WI Dept. of Natural Resources – Bureau of Law Enforcement

gary.eddy@wi.gov
(608) 245-2315

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Enforcement Techniques

• Targeted patrol
• Two sound test officers at a set location
• Patrol officers direct or escort “loud” sleds to location
• Run targeted enforcement for a few hours and then all
  • resume normal patrol
• Word of mouth will usually help alleviate noise issues in
  • targeted area for a lengthy period of time
Equipment:

- Sound level meter (SLM)
- Windscreen
- Calibrator
- Tape measure
- Vibrating Tachometer
- Tripod
- Recreational Noise Enforcement Log

Optional:
- Wind speed meter
- Traffic cones
Vibrating Tachometer
(Treysit Sirometer)
General Guidelines:

- Obtain a copy of the SAE J2567 test standard and follow.
- Avoid test sites adjacent to large reflective surfaces (trees, hills, buildings, etc.) for sound test procedure.
- Ambient (background) sound level must be at least 10dB lower than the measured sound level(s).
- Avoid snowmobile tests when wind speed is greater than 12 mph. Check forecast or use wind speed meter.
- Talking is forbidden during measurements.
- Always observe the 10dB rule. Measured sound level shall be at least 10 dB higher than the ambient level.
- Note that every 10 decibel increase in noise equals a doubling effect, similar to going 50 MPH vs 100 MPH.
Sound Level Meter Considerations

- Type I or Type 2 meters are recommended for law enforcement.
- Meter must use the “A” weighting scale and set for “S” = slow response.
- Meter should be set to read constant sound pressure levels or “SPL”. Do not use the “Max” setting as that will lock in the maximum decibel level reached, rather than the decibel level reached at the specified RPM.
- Recalibrate before and after conducting a test as specified in the owner’s manual.
- Calibration must be within 0.1 dB of the set calibration level.
Stationary Snowmobile Test

- Applies to all snowmobiles
- Snowmobile exhausts can not be repacked
- Wisconsin sound level limit for snowmobiles 1975 and newer is 88 decibels at 4000 rpms
- Society of Automotive Engineers (SAE) J2567
Snowmobile Stationary Test
Notations:

- Test surfaces are limited to grass and/or snow.
- Blacktop, bare ice or hard packed snow/ice is not a permitted test surface.
- Some snowmobiles without a factory tach may be difficult to measure using a handheld tach. The piston firing order and each plug wire acting as a coil which in turn throws off the rpm measurement.
Drive Belt Damage Concerns

- Some snowmobiles may engage the drive belt at or very near 4000 rpms. The +/- 250 rpm threshold should be used to avoid belt engagement.

- The owner/operator should always be provided the option to remove their belt in order to alleviate any concerns or later complaints regarding possible belt damage.
157.5 " from midline (center) of snowmobile

4000 RPMs for 4 seconds

48 " high
Snowmobile Stationary Test Procedures:

- Clear personnel from the test site for at least a 16 foot radius from the machine and meter.
- Position riders to sit on the seat; feet on foot rests.
- Verify snowmobile engine is warmed up. (Where did you just come from?)
- Point machine in safe direction, set or hold brake.
- Review and use hand signals with the rider once the test has initiated.
- Repeat the test twice and average. Readings must be within 2dB of each other. If not, repeat until they are.
350.095(2)(d) Noise level standards; exhaust and engine noise

- For every snowmobile manufactured on or after July 2, 1975, the noise level standard for exhaust and engine noise shall be 88 decibels.
350.095(1)(b)
Cannot modify exhaust to make it louder than the originally manufactured machine, regardless of date of manufacture.
Questions?