

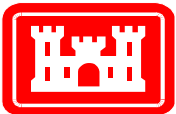


TRB Annual Meeting

Transportation Related Environmental Noise Standards

**Paul D. Schomer
US Army CERL**

January 10, 2001



USA “National” Acoustical Standards

- **American National Standards Institute (ANSI)**
 - **Acoustical Society of America (ASA)**
- **Society of Automotive Engineers (SAE)**
- **ASTM**
- **Others**
 - **ARI, ASHRA, Power Tool Industry**

International

- **International Organization For Standardization (ISO)**
 - **ANSI S12 Committee**
(Acoustical Society of America--Technical Advisory Group--TAG)
 - ♦ **SAE (Liaison)**
 - ♦ **ASTM (Liaison)**

Active Liaisons

- **SAE**
 - **Motor Vehicle Noise**
 - **ConAg**
 - **Aircraft**
 - **Small-engine equipment**
- **ASTM-E33**
- **Power tools**

Transportation Related Standards--Mainly ISO

- **Noise Barriers--also ANSI**
- **Vehicle Emission (road vehicles, trains, watercraft)**
- **Vehicle Immission (received sound--road vehicles, trains, watercraft, aircraft)**
- **Roads (surface, sound absorption)**
- **Tires (noise emissions)**

Emissions

- ISO 362--Motor vehicles accelerating--being revised
- ISO 5130--Stationary motor vehicles
- ISO 7188--Passenger cars--urban driving
- ISO 2922--Boats--newly revised
- ISO 3095--Rail-bound vehicles--CEN revising
- ISO 10844--Test track specification--being looked at

Emissions Continued

- ISO 10847--In situ barrier measurement
- ANSI S12.8-1998
- ISO **New:** 11819-1--Methods for measuring the influence of road surface on traffic noise--Part 1: The statistical pass-by method--
- ISO 11819-2--Part 2 Close proximity method
being developed

Emissions Continued

- ISO 13472-1--**New**: Measurement of the sound absorption properties of road surfaces in situ--Part 1: Extended surface method
- ISO 13473-1--**New**: Characterization of pavement texture by using surface profiles--**Parts 2, 3, 4, and 5 in development**

Inside Vehicles

- **ISO 2923--On board vessels**
- **ISO 3381--Inside rail-bound vehicles--(Under CEN revision)**
- **ISO 5128--Inside motor vehicles**
- **ISO 5129--Inside aircraft (newly revised)**

In The Community

- **ISO 1996--Measurement and assessment of community noise--under revision**
- **ANSI S12.9--Measurement and assessment of community noise**
- **New ISO--Continuous airport noise monitoring--in development**

Thrusts

- **More representative vehicle noise measurement--
lower community levels**
- **Improved community noise assessment**
- **“Quiet” roads**
- **Quieter tires**

Example

- **ISO 11819-2-- Methods for measuring the influence of road surface on traffic noise--Part 2: Close proximity method**
 - In development
 - Measure tires on a STANDARD road
 - Measure road surface noise using STANDARD tires
 - Measure tire/road combination

ISO 11819-2: Acoustics - Method for measuring the influence of road surfaces on traffic noise — Part 1: The Close-Proximity (CPX) method



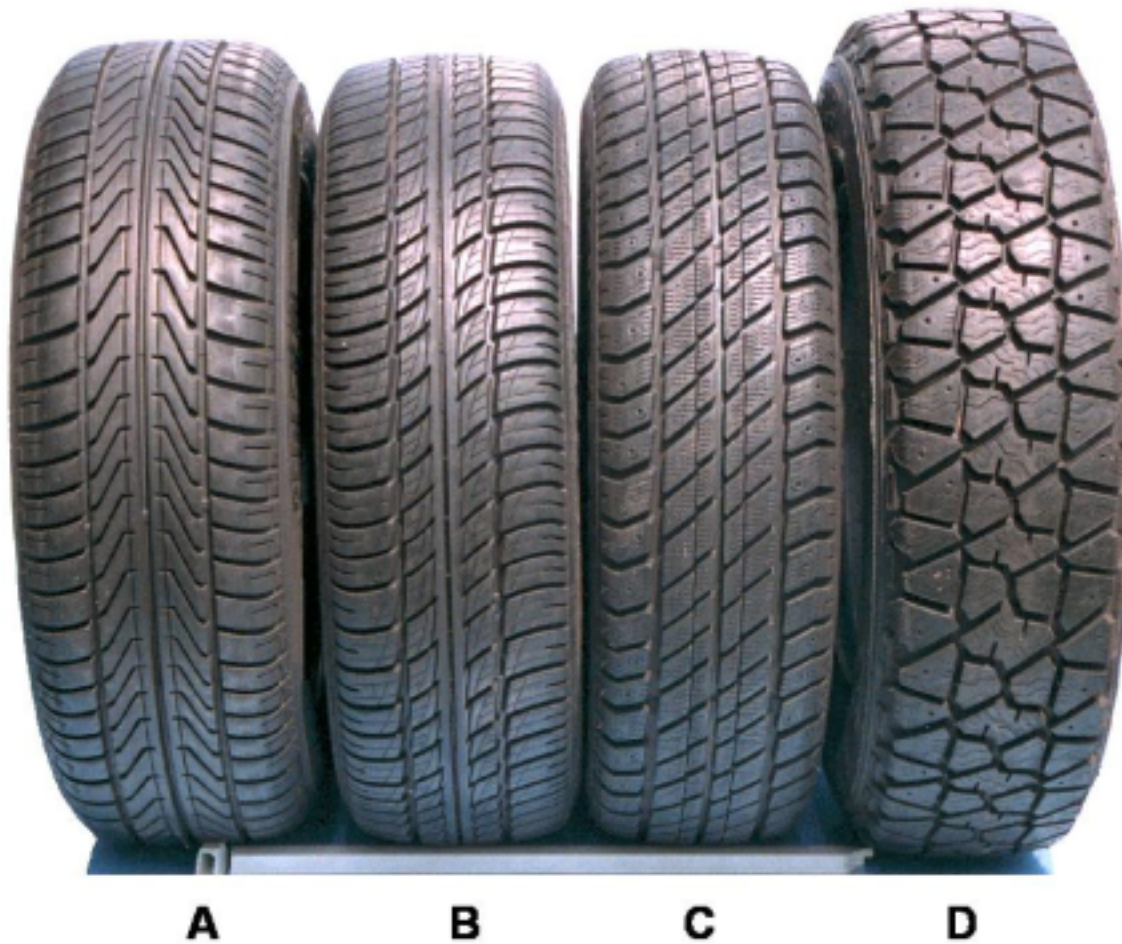
This is just an example of a CPX measuring system

Inside View of the CPX Trailer



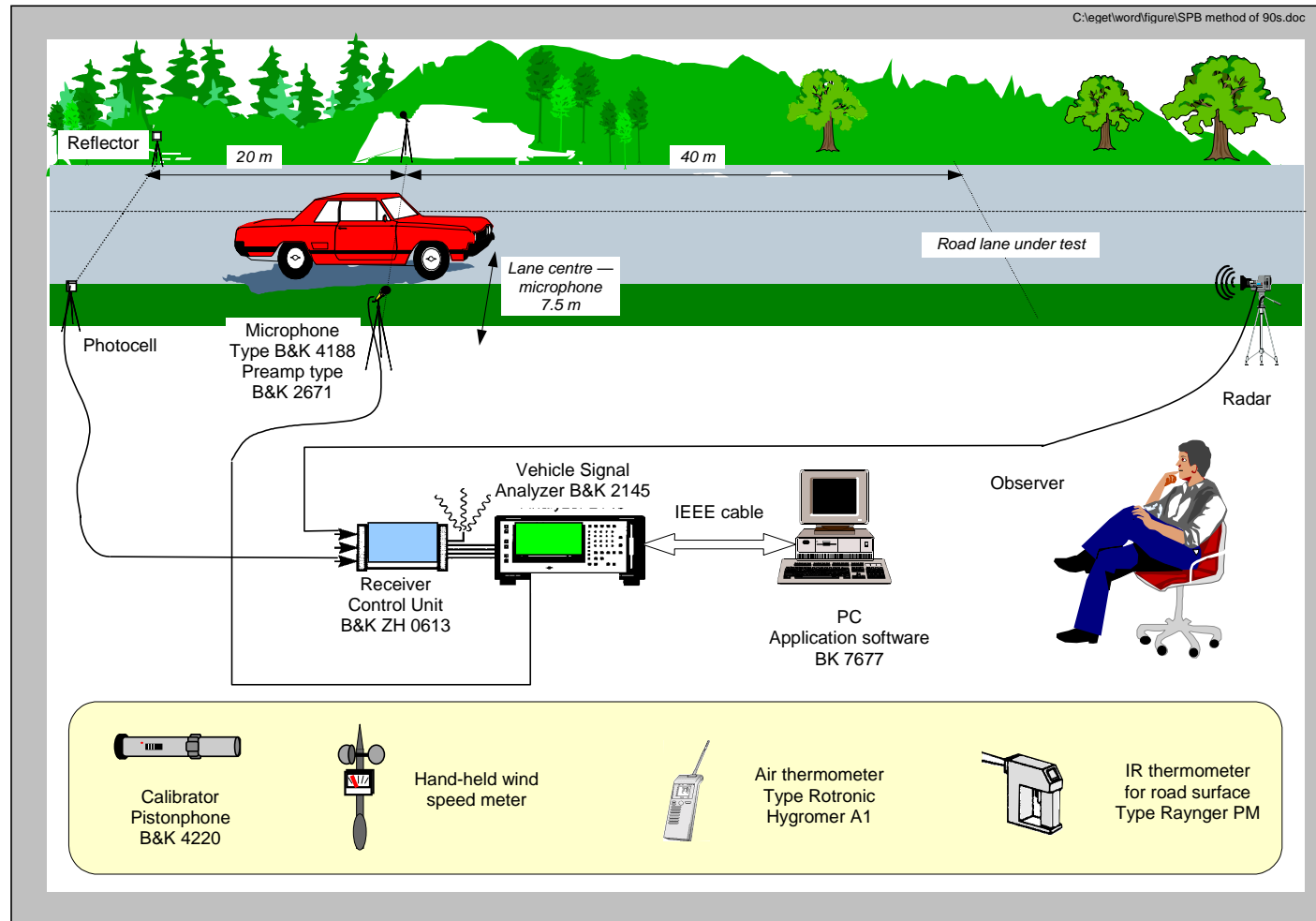
CPX Used to Measure Tire Noise

Photo: Ulf Sandberg, VTI, June 1999



ISO/TC 43/SC 1/WG 33

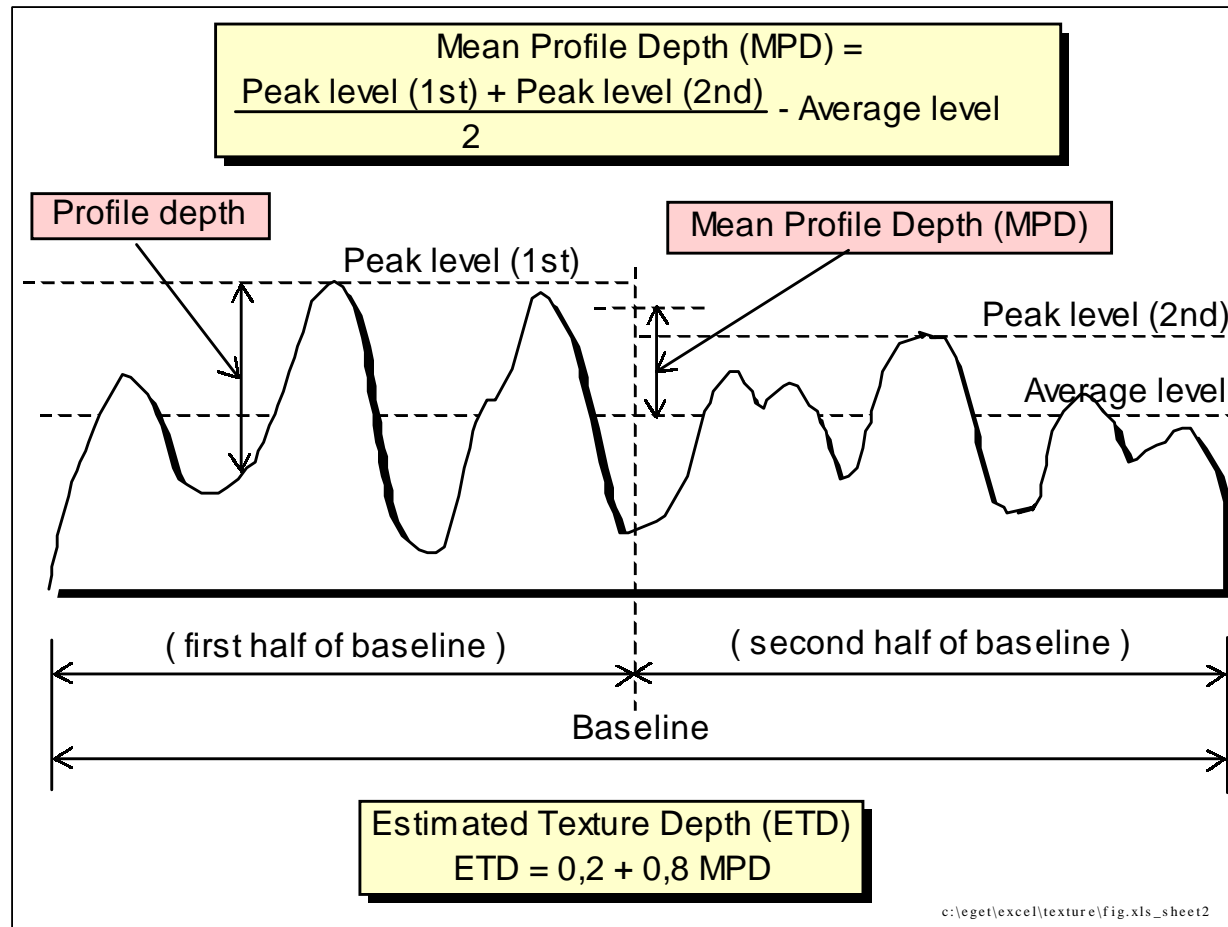
ISO 11819-1: Acoustics - Method for measuring the influence of road surfaces on traffic noise — Part 1: The Statistical Pass-By method



This is just an example of an SPB measuring system

ISO/TC 43/SC 1/WG 39

ISO 13473-1: Characterization of pavement texture by use of surface profiles - Part 1: Determination of Mean Profile Depth



ISO/TC 43/SC 1/WG 39
ISO/FDIS 13473-3:

Characterization of pavement texture by use of surface profiles -
Part 3: Specifications and classification of profilometers



Conclusions

- **ISO is the name of the game**
- **Mainly being pushed by the EU**
- **Expect**
 - **lower vehicle limits**
 - **tire limits**
 - **quieter road surfaces**
- **US DOT doing some road and tire work**
- **US manufacturers participating**