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# *National Automotive Sampling System*



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## **TIRE PRESSURE SPECIAL STUDY Update Tread Depth and Service Station Surveys**

**National Center for Statistics and Analysis**

November 2001

# *References and Authors*

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- Based on two technical reports
- Tire Pressure Special Study-Tread Depth Analysis
  - **Kristin Thiriez and Rajesh Subramanian**
- Air Pumps at U.S. Gas Stations: Major and Fees
  - **Joseph Stevano**

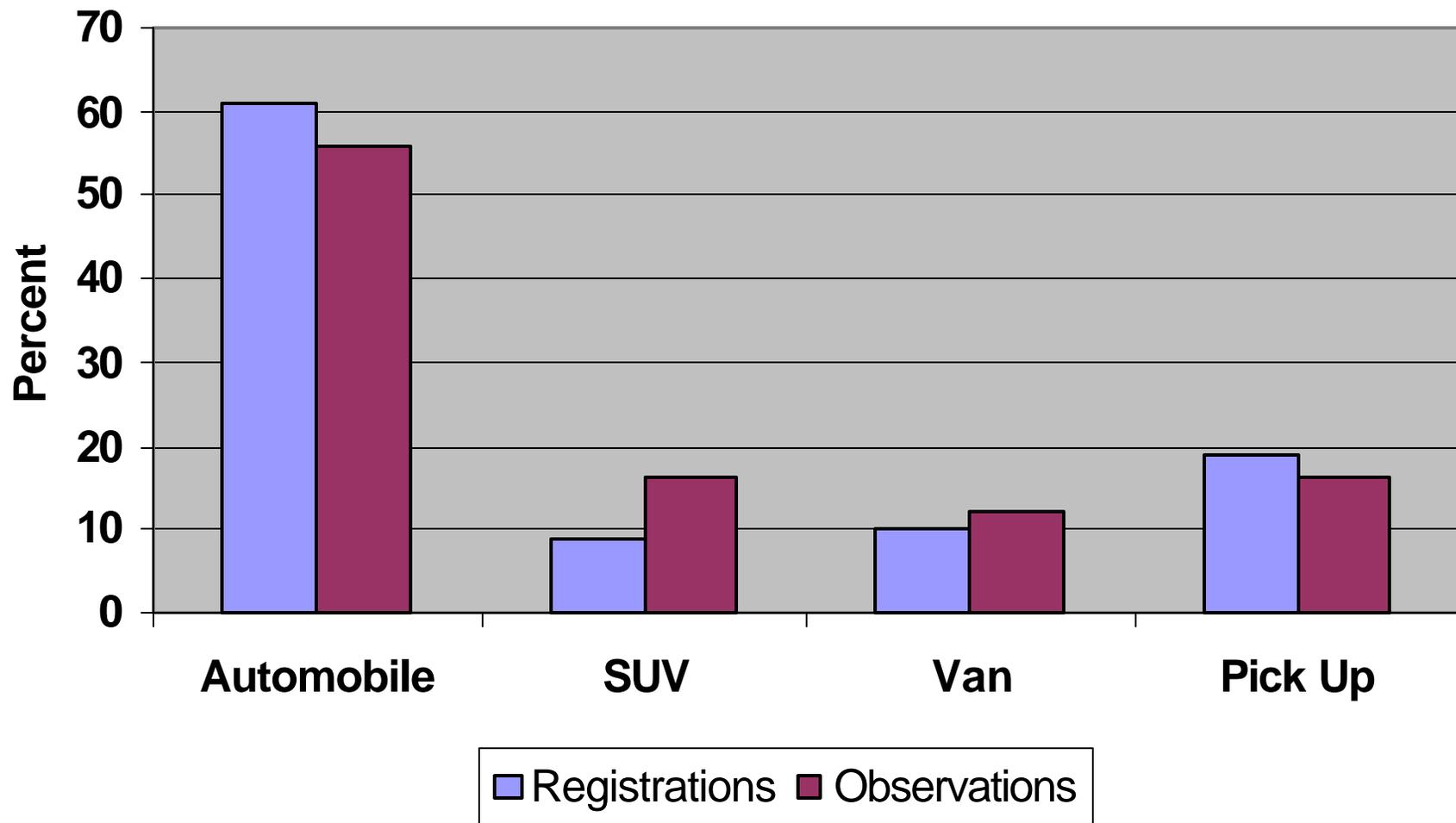
# *Survey Facts*

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- **Dates: Feb 1, 2001 through Feb 14, 2001**
- **Time: 8:00 am through 5:00 pm**
- **Data collected at NASS-CDS PSUs**
- **Vehicle mix**
  - **6,442 passenger cars**
  - **1,874 sport utility vehicles**
  - **1,376 vans**
  - **1,838 pickup trucks**

# Sample Population

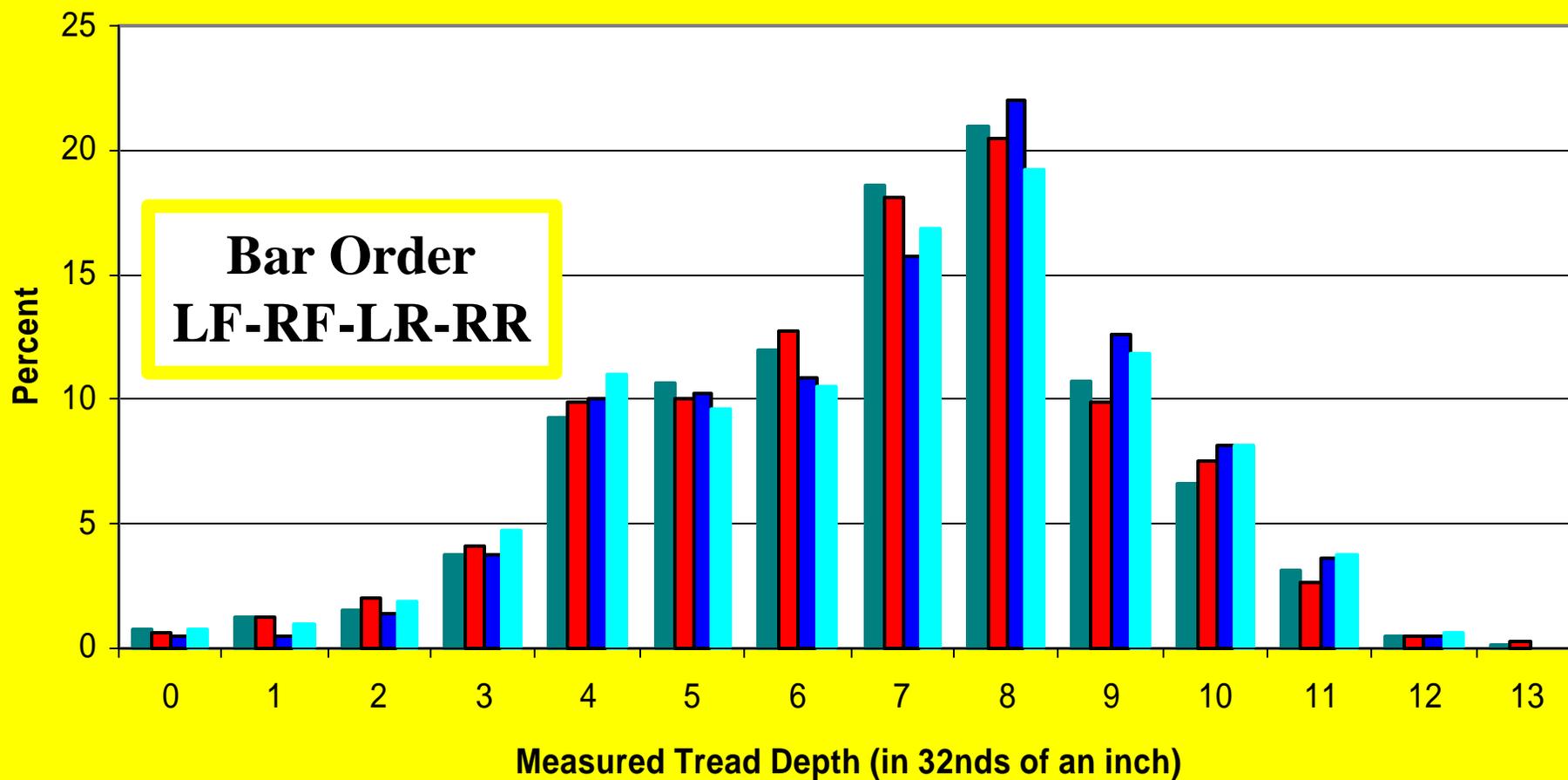


# *Tread Depth*

# *Tread Depth Measurement*

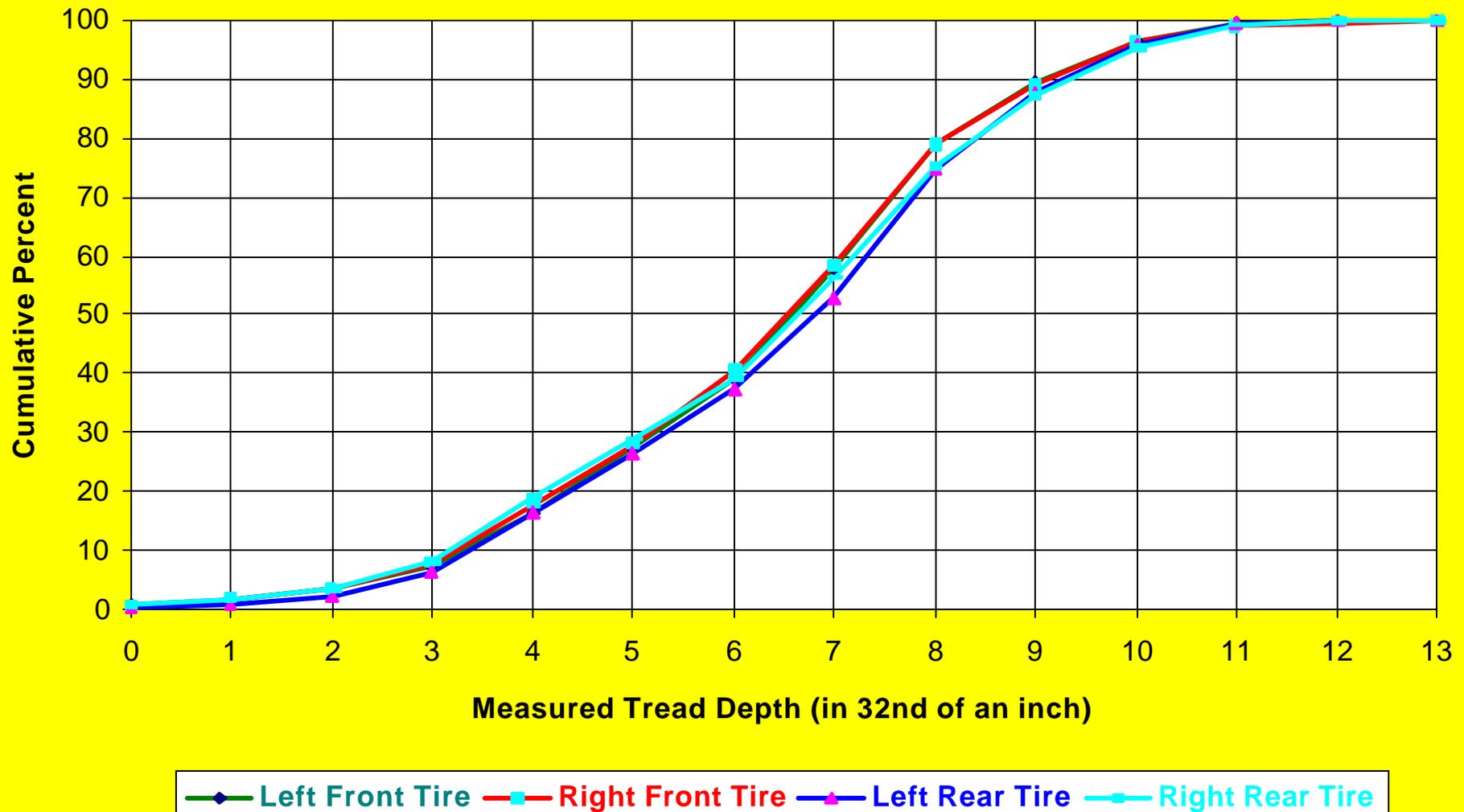


# Tread Depth Distribution (each tire)



■ Left Front Tire ■ Right Front Tire ■ Left Rear Tire ■ Right Rear Tire

# Tread Depth Cum Dist



# *Average Tread Depth*

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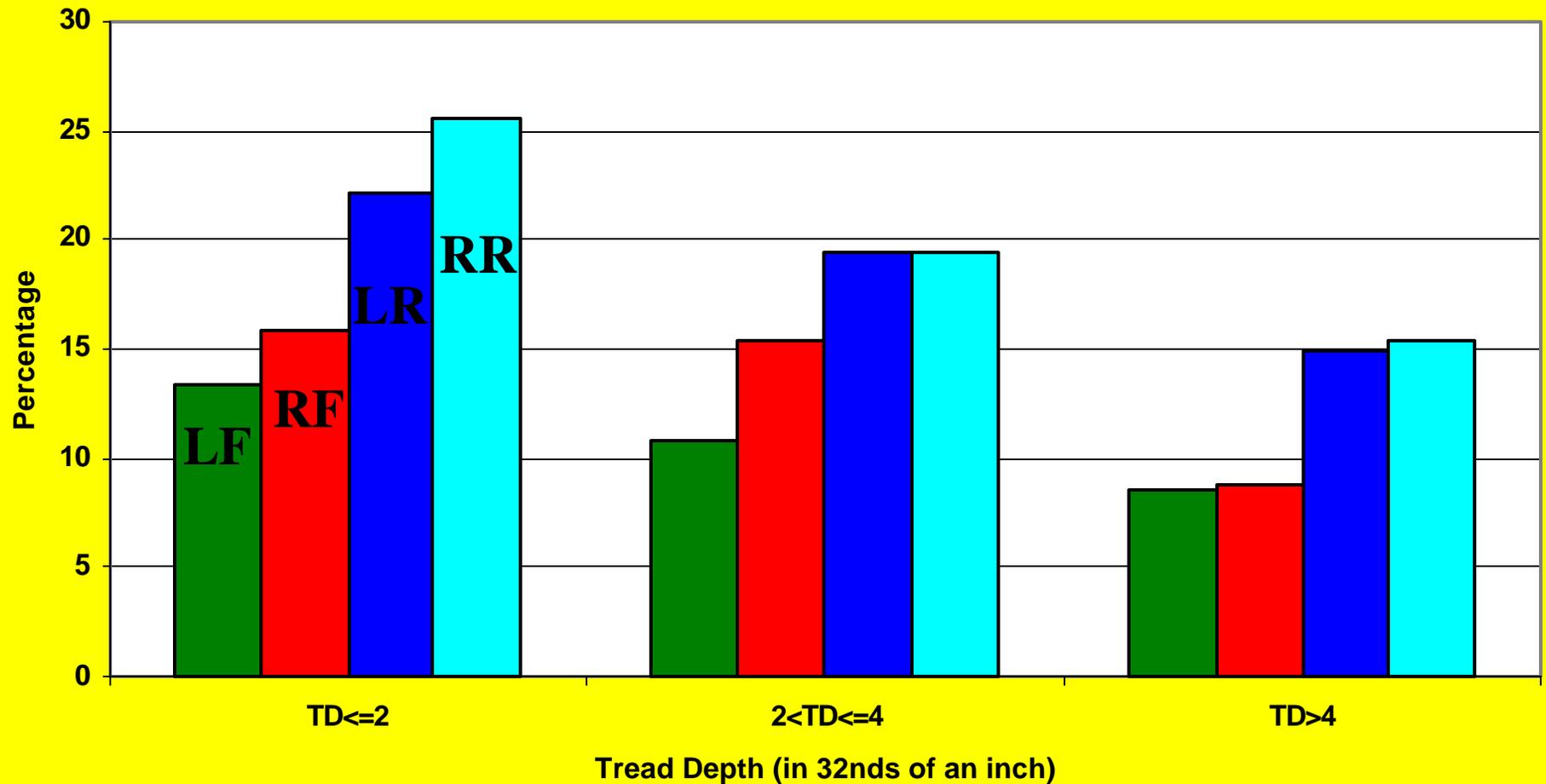


- **Left Front**                      **6.8**
- **Right Front**                     **6.8**
- **Left Rear**                        **7.0**
- **Right Rear**                      **6.8**

# Minimum Measured Tread Depth



# Inflation and Tread Depth



■ Left Front Tire ■ Right Front Tire ■ Left Rear Tire ■ Right Rear Tire

# *Tread Depth Findings*

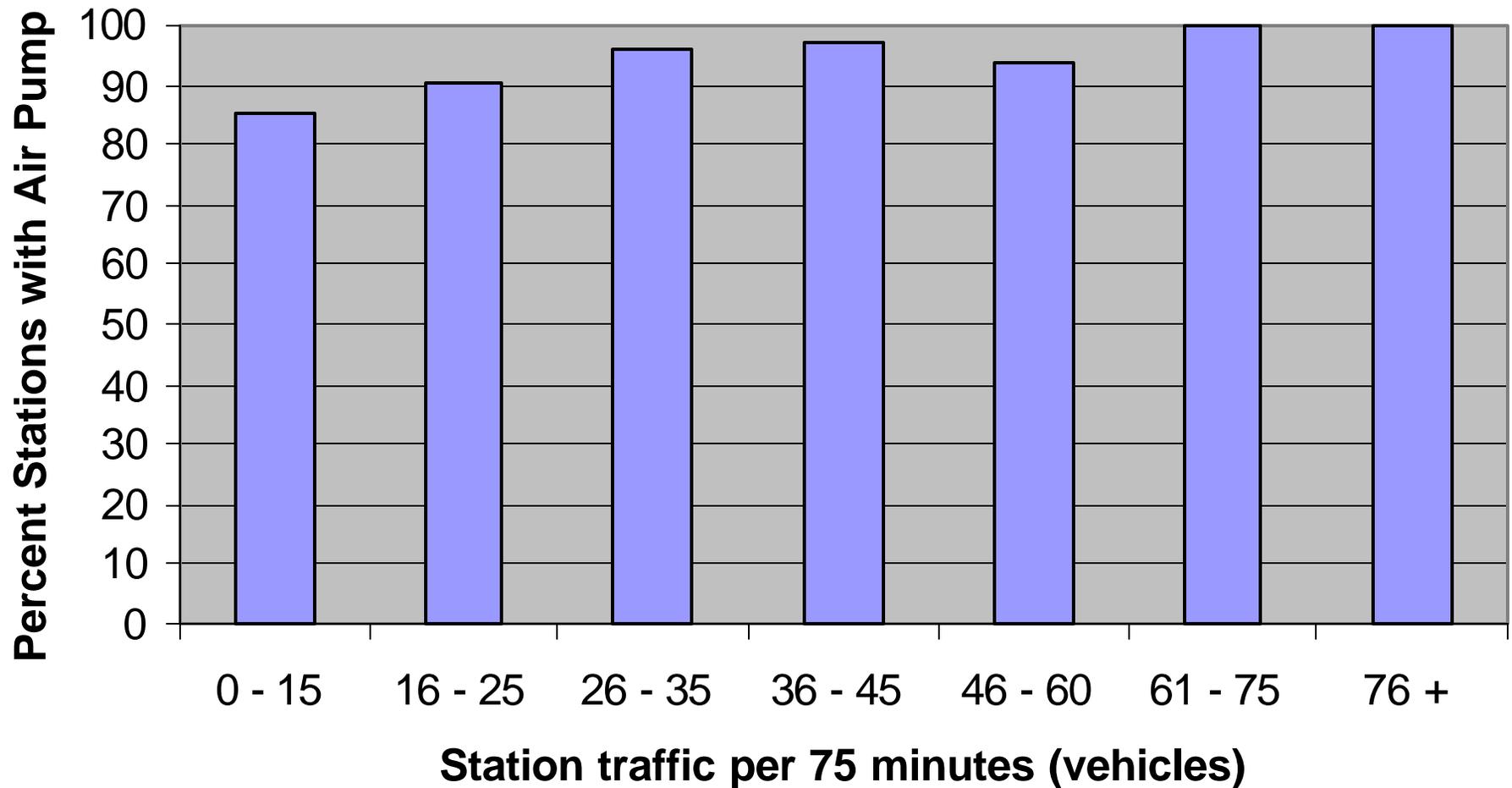
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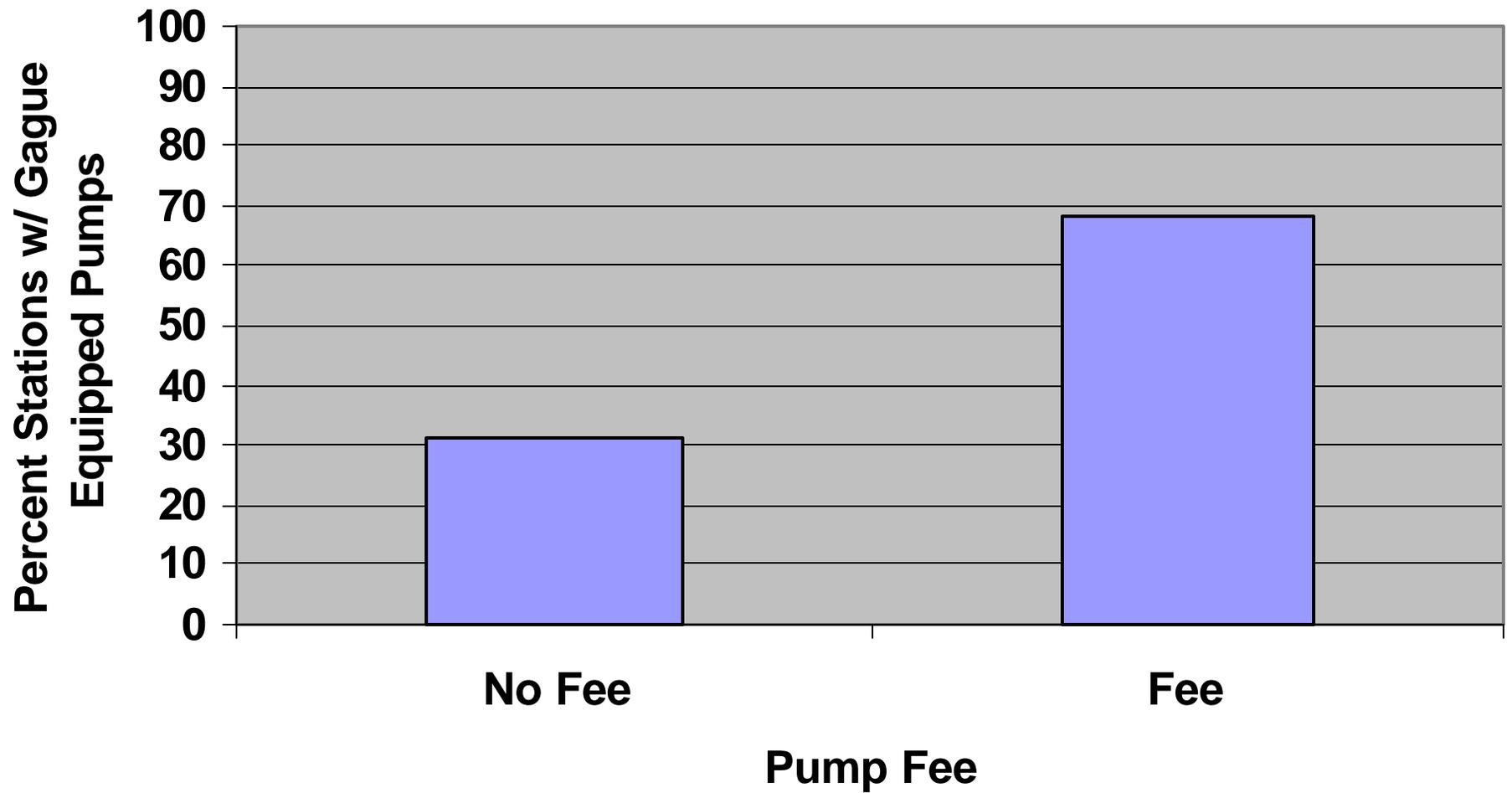
- **Cars are being driven with minimal tread depths tires**
- **9 percent of passenger cars have at least one tire with 2/32” of tread depth or less**
- **Minimal tread depth tires are between 1.5 as tires with deeper tread.**

# *Service Station Survey*

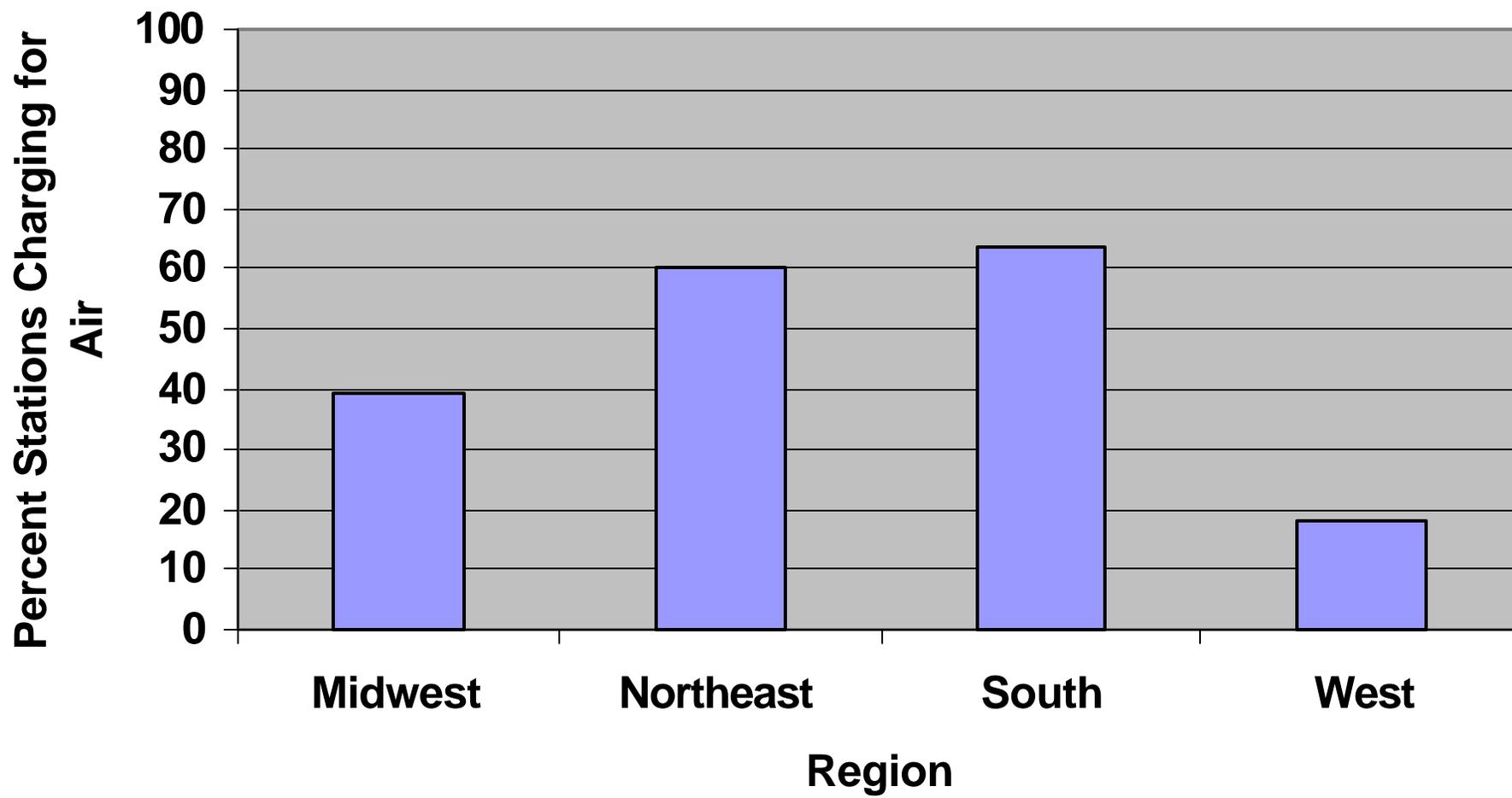
# Air Availability by Station Traffic Volume



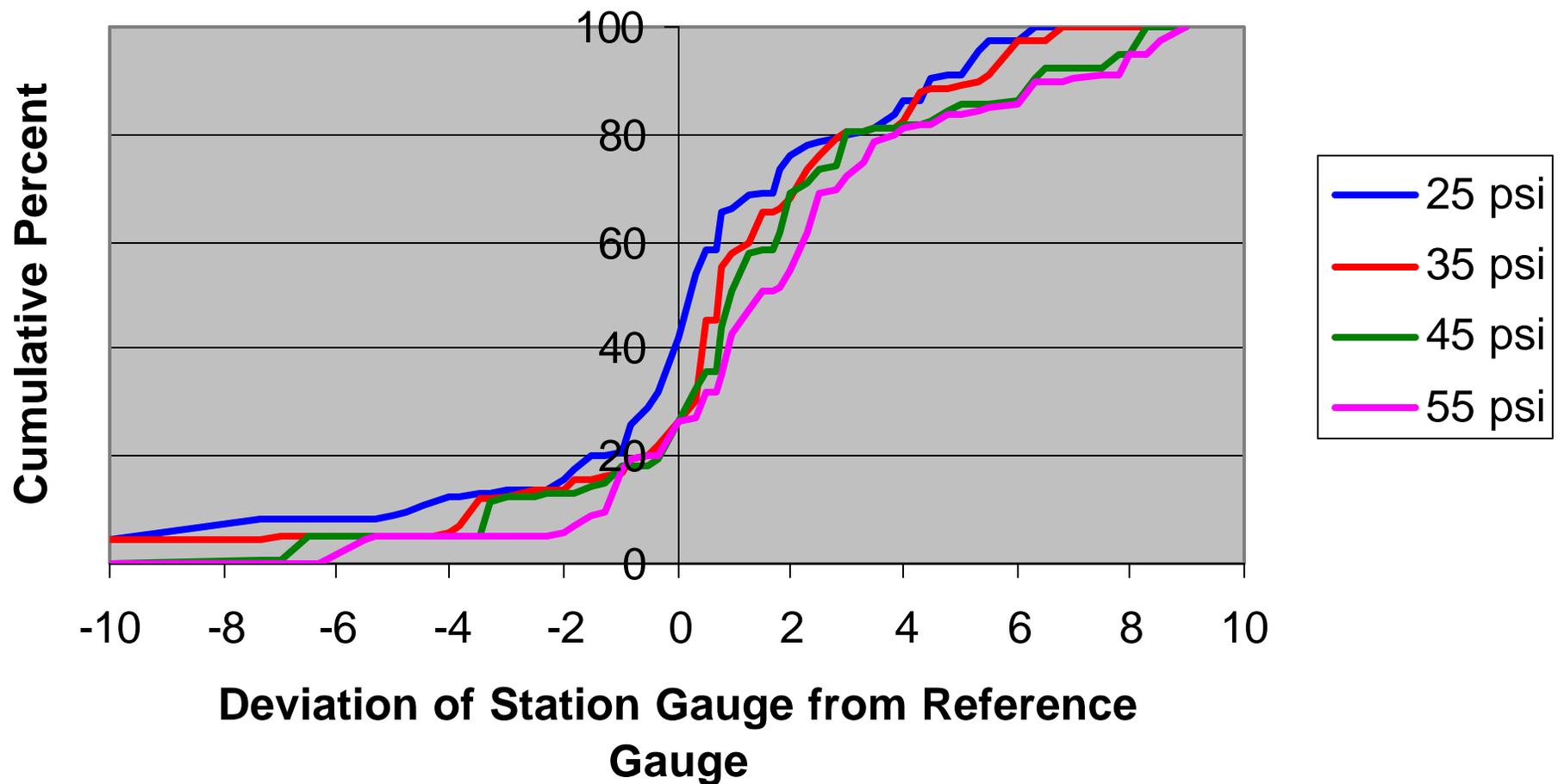
# Station Station Gauge Availability



# Air Fees by Region



# Station Gauge Accuracy

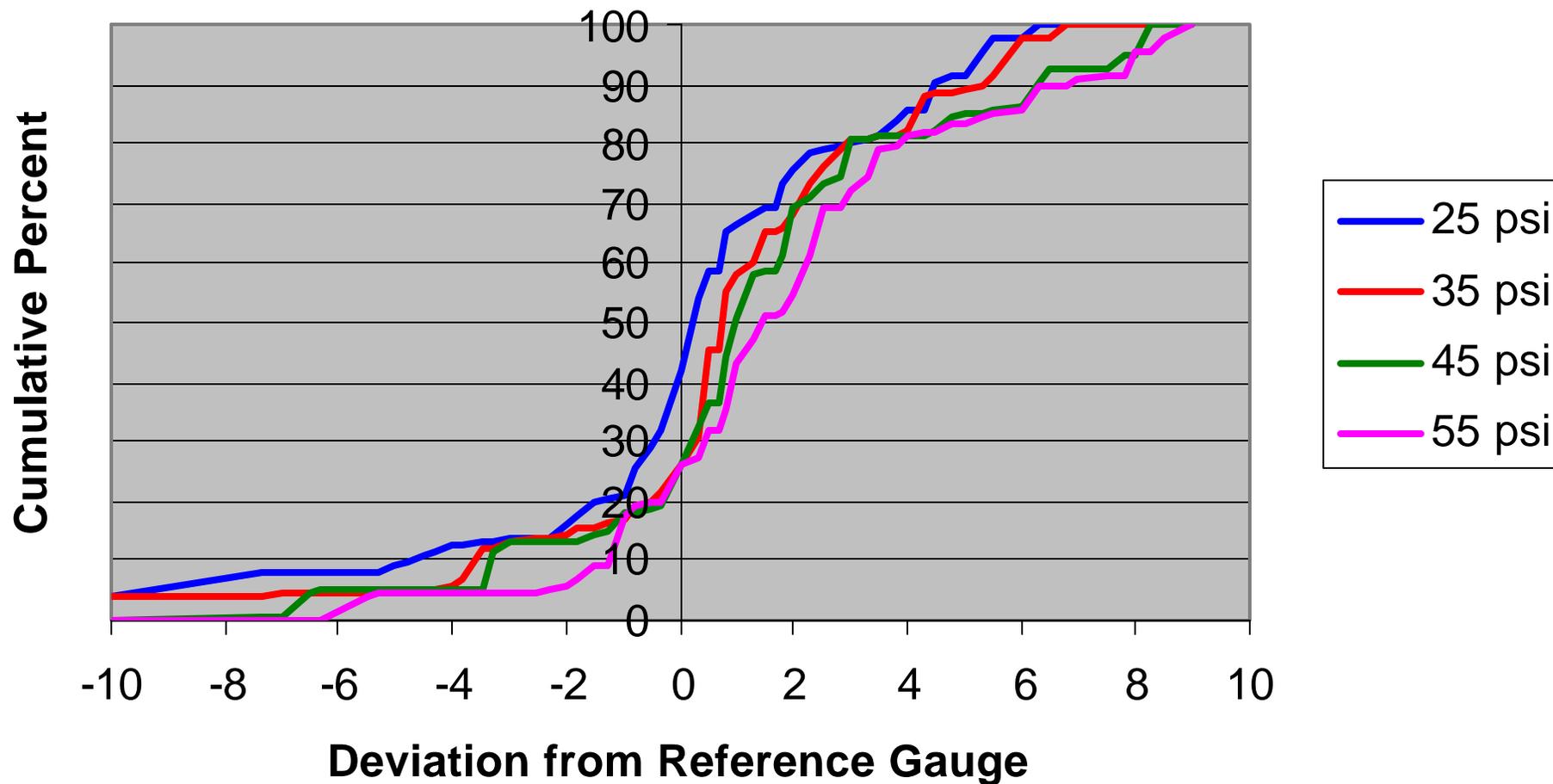


# Over-Reporting by Station Gauges



■ Station Gauge <u>Pressure (psi)</u>	Percent over-reporting		
	<u>4 psi</u>	<u>6 psi</u>	<u>8 psi</u>
25	6	2	0
35	19	9	0
45	19	14	5
55	20	15	9

# Hand Held Gauge Accuracy



# *Service Station Survey Findings*



- U.S. gas station gauges tend to report a tire pressure which is higher than the actual pressure
  - nearly one gas station gauge out of five will over-report the tire pressure by 4 psi or more
  - nearly one gas station gauge in 10 will over-report tire pressure by 6 psi or more
- Results in tires being under inflated!

# *Service Station Survey Findings (pg2)*

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- Working available pumps - about 86%
  - Well over 90% of gas stations (having at least two islands) come equipped with air pumps
  - Nearly 10% of them will be out of order
- Less than half of the pump-equipped gas stations also have a tire gauge

# *Further Information*

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- These research notes and other general information on highway traffic safety may be accessed by internet users at <http://www.nhtsa.dot.gov/people/ncsa>