

Field Safety Assessment Report by OZMOS, LLC

Date of Assessment: April 11, 2026
Location: Pittsburgh, Neville Island Area
Assessor: Shingo Ozaki
Founder & Engineering Consultant

1. Executive Summary (NIW-Oriented)

This field assessment was conducted in the Neville Island area of Pittsburgh, PA, focusing on commercial fleet vehicles operating within the region. The purpose of this assessment was to identify real-world tire safety risks, document maintenance gaps, and provide objective evidence supporting the national importance of improving tire-related safety in U.S. commercial transportation.

During the visit, I conducted on-site inspections at two fleet locations, including one fleet operating approximately 50 vehicles. A total 5 vehicles were inspected across 2 fleets. Several safety-critical tire issues were identified, including low inflation, embedded foreign objects, stone trapping, tread damage, and sidewall structural concerns. These findings directly align with the United States' national interest in reducing transportation-related accidents, improving fleet reliability, and lowering economic losses associated with tire failures.

This assessment was conducted independently without prior engagement from the fleets observed.

2. Purpose of Visit

The purpose of this assessment is to:

- Identify tire-related safety hazards in active commercial fleets in the Neville Island area
- Evaluate maintenance practices and risk factors
- Provide data-driven insights to support safety improvement initiatives
- Demonstrate ongoing professional activities that contribute to



U.S. transportation safety

- Strengthen evidence for NIW by documenting real-world safety contributions

This assessment is part of OZMOS LLC's ongoing efforts to reduce tire-related incidents and enhance fleet safety nationwide.

3. Overview of Fleet Observations

- Number of fleet facilities observed: 2 Fleets
- Estimated number of vehicles present: 5 Vehicles
- Types of vehicles: Tractor units and trailers observed
- Additional tires inspected: 1 removed tire
- Fleet size estimate: Approximately 50 vehicles
- Notes on accessibility:
 - ✓ One fleet had no personnel on-site
 - ✓ At another fleet, I was able to speak with a female staff member and a driver
 - ✓ No maintenance manager was available
 - ✓ Vehicle inspections were permitted and conducted on-site
 - ✓ Follow-up contact was requested for the following week

Despite limited access to personnel, the assessment successfully identified multiple safety-critical tire issues.

4. Detailed Findings with Photographic Evidence

4.1 Low Tire Inflation

<Description>

During the inspection, both steer and drive tires were found operating at significantly lower pressures than recommended. Drive tires measured **94.5 psi** (recommended 120 psi), and steer tires measured **99.2 psi** (recommended 105 psi).

This condition was visually confirmed through noticeable **deflection** in the sidewall profile.



<Safety Impact>

- ✓ Increased internal heat generation leading to accelerated casing degradation
- ✓ Higher likelihood of blowouts
- ✓ Reduced handling stability
- ✓ Accelerated irregular wear

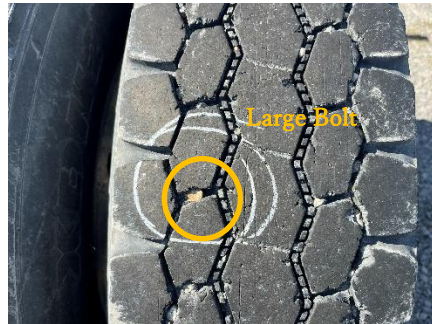
<National Interest Relevance>

Underinflation is a leading cause of tire-related crashes in the U.S., contributing to preventable fatalities and economic losses.

4.2 Embedded Nail & Bolts / Foreign Objects

<Description>

Multiple tires were found with **nails**, **large bolts** and **thick wire-like objects** deeply embedded in the tread area. These objects had penetrated far enough to pose an immediate risk of air loss or structural damage.



<Safety Impact>

- ✓ Slow or sudden air loss
- ✓ Penetration depth suggests potential casing damage
- ✓ Increased risk of roadside breakdown
- ✓ Elevated likelihood of catastrophic failure

<National Interest Relevance>

Preventing roadside breakdowns reduces delays, improves supply chain reliability, and enhances roadway safety.

4.3 Stone Trapping & Tread Chuck

<Description>

The fleet yards in this region were predominantly **unpaved gravel surfaces**, resulting in frequent stone trapping within tread grooves.

Significant differences in stone retention were observed depending on tread pattern, indicating that certain designs are unsuitable for this operating environment. This indicates a mismatch between tire design and operational environment.



<Safety Impact>

- ✓ Accelerated tread wear
- ✓ Potential casing damage
- ✓ Increased risk of puncture
- ✓ Higher likelihood of retread rejection

<National Interest Relevance>

Preventable tire damage increases operational costs and contributes to unnecessary tire disposal and environmental waste.

4.4 Sidewall Damage (Expert Witness-Level Analysis)

<Description>

A drive tire exhibited a **localized sidewall cut** aligned with a corresponding **rim damage mark**, suggesting contact with a sharp, rigid object.

The cut depth indicates potential involvement of the **ply cords**, raising the possibility of structural compromise.

Due to the tire being inflated at the time, detailed probing was not performed for safety reasons.



<Technical Assessment>

- ✓ The observed damage pattern is inconsistent with typical curb contact, which usually results in broader abrasion marks.
- ✓ The localized cut, aligned with rim damage, is more consistent with impact from a sharp, rigid object.
- ✓ This suggests a high likelihood of external impact as the primary cause of damage.
- ✓ This assessment is based on visual inspection and engineering judgment.

<Safety Impact>

- ✓ High-risk condition requiring immediate removal
- ✓ Moisture intrusion → cord corrosion → Sudden Air Loss
- ✓ Potential for catastrophic failure during operation

<National Interest Relevance>

Sidewall structural failures are a known cause of severe accidents and litigation cases. This analysis demonstrates advanced causation reasoning, directly relevant to Expert Witness work.

4.5 Removed Tire Inspection (Center Wear)

<Description>

One removed tire was inspected and showed **center wear**, indicating operation under **excessively high inflation pressure**.

Tread depth measurements varied significantly (4.2 mm / 2.2 mm / 3.2 mm / 4.8 mm), confirming uneven wear progression. Uneven wear indicates suboptimal pressure management and load distribution.



<Safety Impact>

- ✓ Reduced traction
- ✓ Shortened tire life
- ✓ Increased operating cost
- ✓ Potential for irregular wear–induced vibration

<National Interest Relevance>

Proper inflation and rotation practices reduce waste, improve fleet efficiency, and support sustainable transportation operations.

5. Professional Assessment

Based on my 20+ years of experience in tire safety, quality, and failure analysis, the observed conditions indicate systemic maintenance gaps within regional fleets. These issues that can directly contribute to:

- Increased accident risk
- Higher maintenance costs
- Reduced operational efficiency
- Premature tire failure

Similar patterns have been observed in other regional fleet assessments.

The findings reinforce the need for expert-led safety programs, training, and preventive maintenance strategies—areas where my expertise provides immediate and measurable value to U.S. fleets. These conditions are preventable through proper maintenance practices.

6. Contribution to U.S. National Interest

This assessment supports the NIW criteria by demonstrating that:

1. My work addresses a matter of substantial merit

Transportation safety, economic efficiency, environmental impact.

2. The issue is of national importance

Tire-related incidents affect interstate commerce, logistics, and public safety.

3. I am well positioned to advance this work

Through OZMOS LLC, I am actively conducting field assessments, identifying risks, and preparing to deliver safety solutions to U.S. fleets.

This report provides objective evidence of ongoing activities that directly support U.S. national interests.

7. Planned Follow-Up Actions

1. Conduct follow-up visits with fleet management
2. Provide a summary of findings and improvement recommendations
3. Offer on-site tire safety seminars and training
4. Develop fleet-specific maintenance improvement plans
5. Continue periodic field assessments to document ongoing safety needs
6. Offer pilot safety assessment program

8. Conclusion

This field assessment demonstrates the presence of significant tire safety risks in the Neville Island area.

OZMOS LLC will continue to support local fleets by providing expert guidance, training, and safety solutions that contribute to reducing tire-related incidents and improving transportation safety in the United States. Immediate action is recommended to mitigate identified risks

This assessment was conducted based on visual observation only.

No fleet operator was formally engaged.

This report is for informational purposes.