

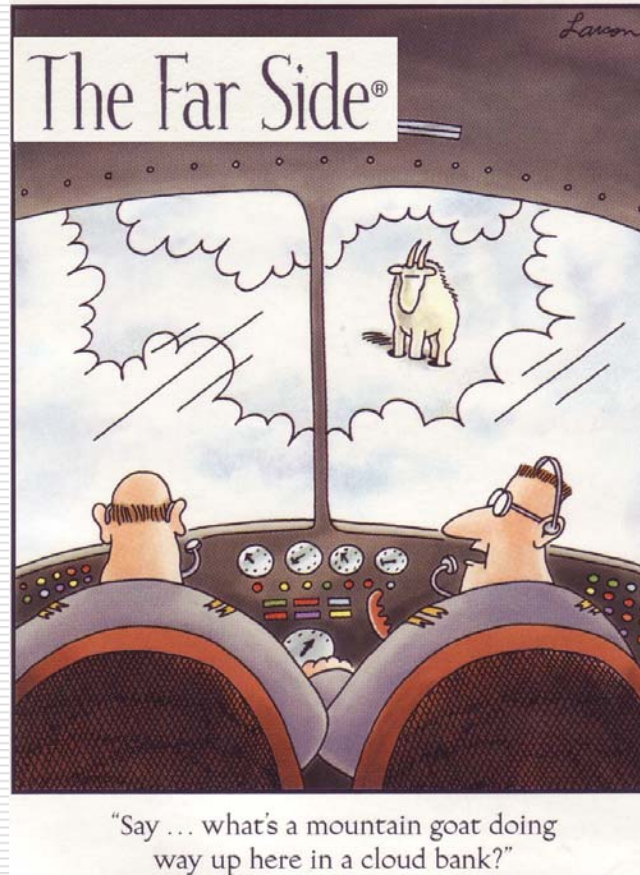
# The Growth Curve

---

Composite Rail Road Ties

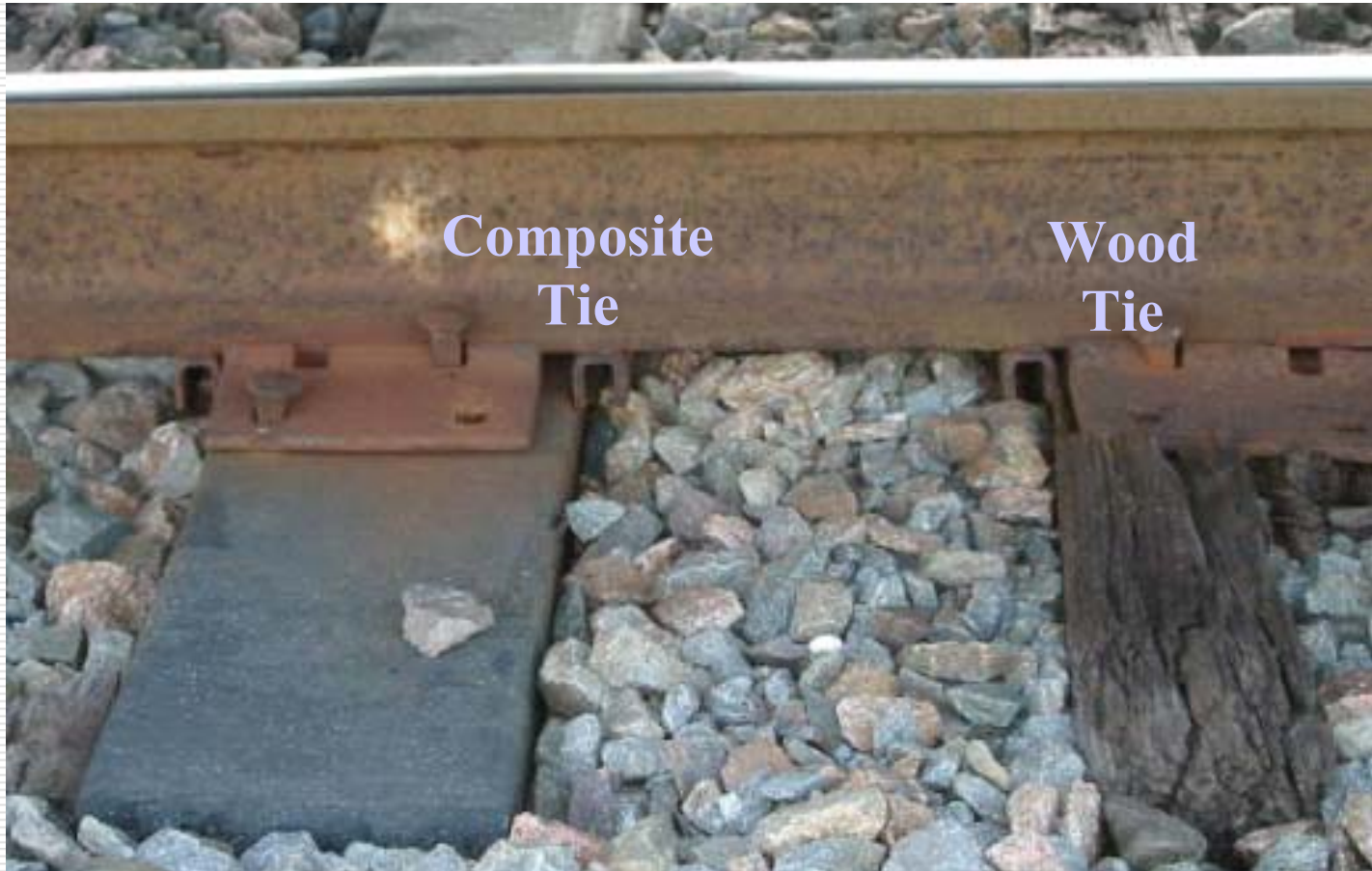
# The Ruth Factor

---



# Composite Rail Road Tie

---



# The Market Need

---

- Replacement of Existing
- Proven Performance
- Ability to Deliver
- Leaching
- Life Cycle
- Cost
- Ability to Deliver

# Rail Road Ties

---



# Challenges

---

- Product Development
- Testing & Certification
- Handling Issues
- Cost
- Overall Acceptance
- Supply – Supply - Supply

# Compressed Carpet Pellets

---

- 100% PC Carpet
- Readily Available
- Cost Effective
- An Active Material (not filler)

# Compressed Carpet Pellets

---

- Easy to Handle
- Used With Existing Equipment
- High Melt/Low Melt Components
- Fiber Component

# Compressed Carpet Pellets

---



# Rail Road Tie Requirements

---

- MOE
- Drop Test
- Weight
- Spike Pull-Out
- Water Pick-Up
- Insect Resistance
- Leaching
- Line Testing

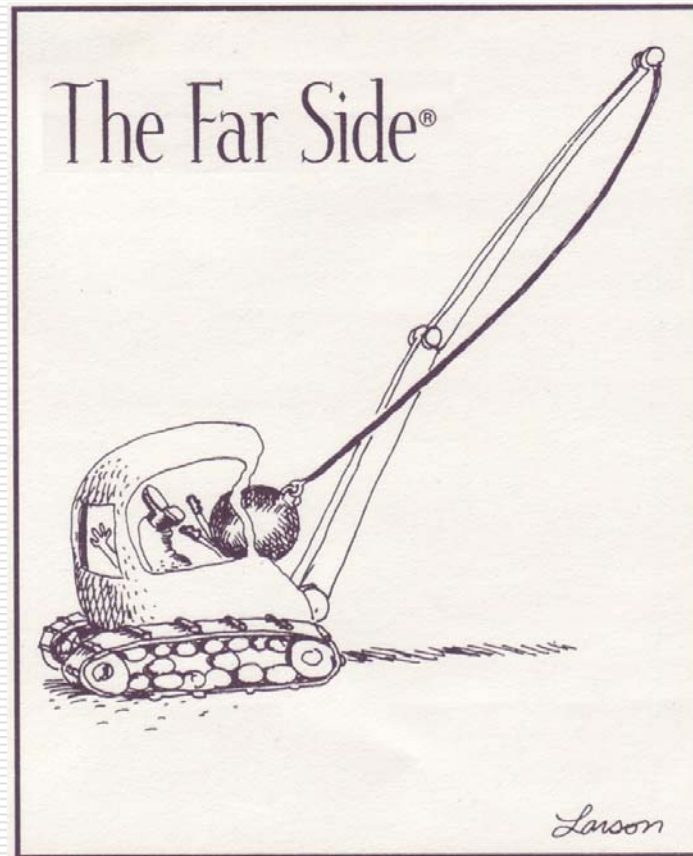
# The Success of Recycled Carpet

---

- ❑ PC Pelletized Carpet used in RR Ties
- ❑ 40% - 70% By Weight
- ❑ Compatible With Existing Equipment
- ❑ Compatible With Existing R/M
- ❑ Replaces Fiberglass
- ❑ 10-14 Million Pounds per Year – Plant
- ❑ 90,000 Ties per Year - Plant

# The Cost of Failure

---



# The Challenge

---

- Technology Established
- Raw Material is Available
- Supply Chain Understood
- Product is Viable
- WE MUST DELIVER!**