

2004 AAR CAR REPAIR BILLING WHEEL REMOVAL ANALYSIS

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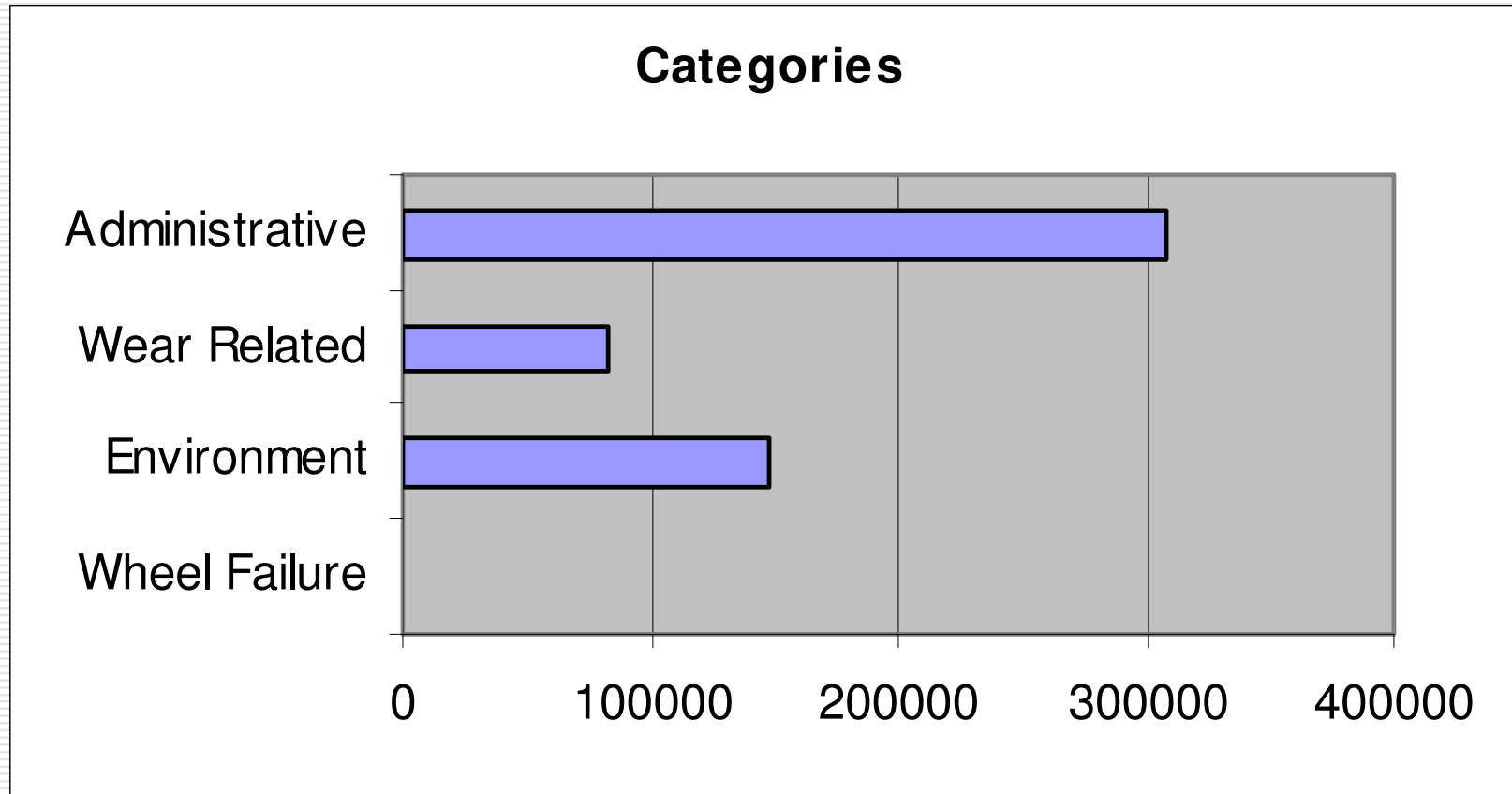
RWMEC

Who we are

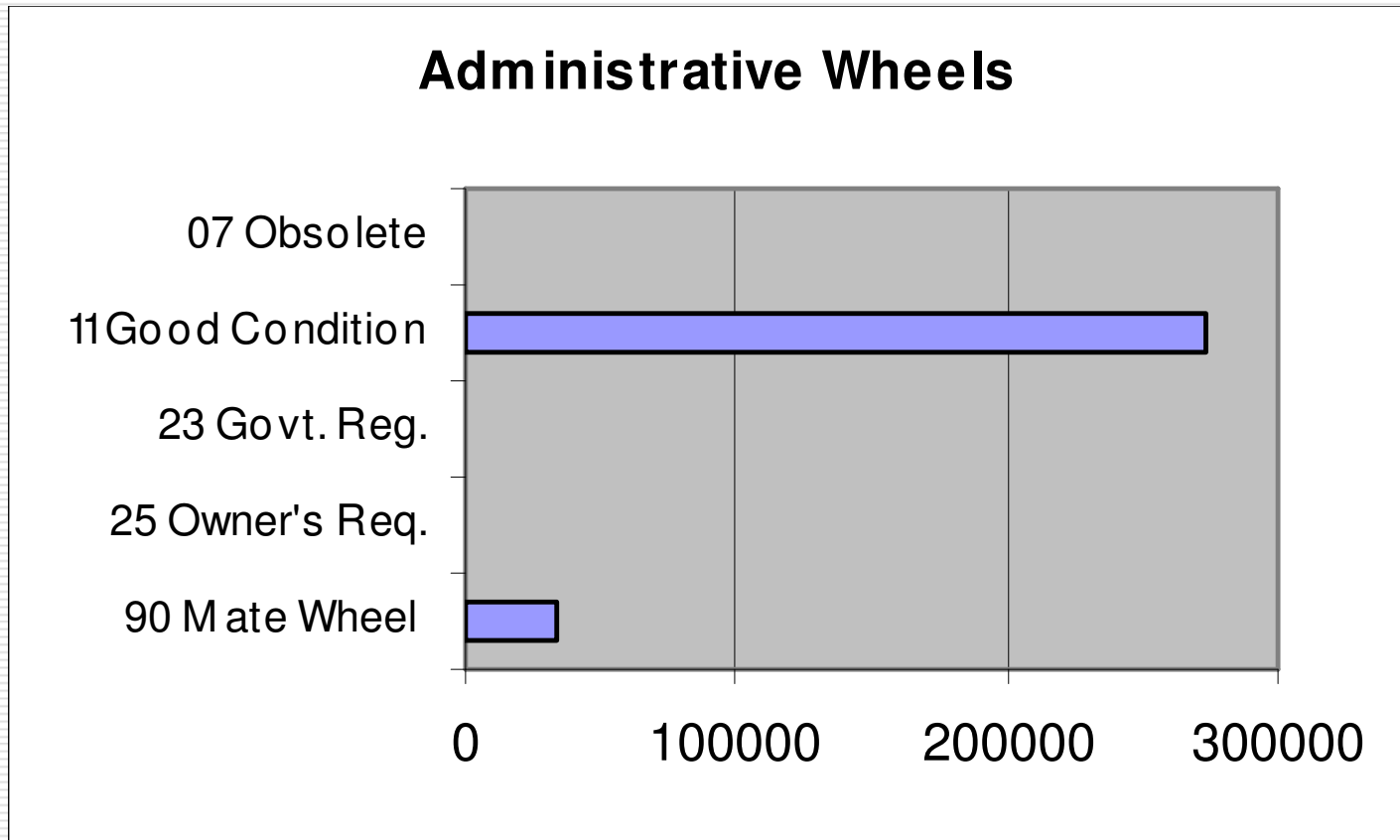
Approved AAR Wheel Manufacturers

**Mission - Support the WABL
Committee
and the Railroad Industry**

WHEEL REMOVAL CATEGORIES



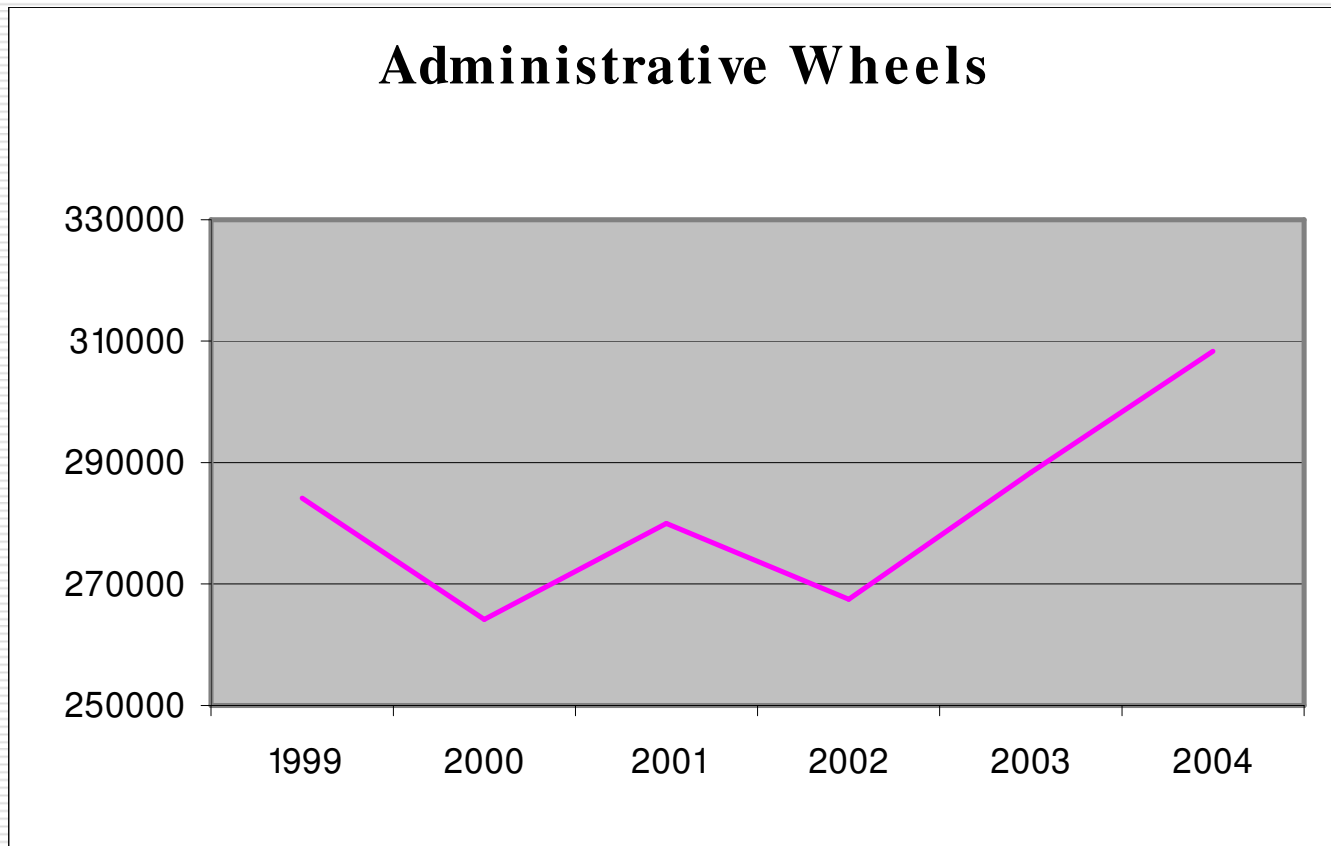
Administrative



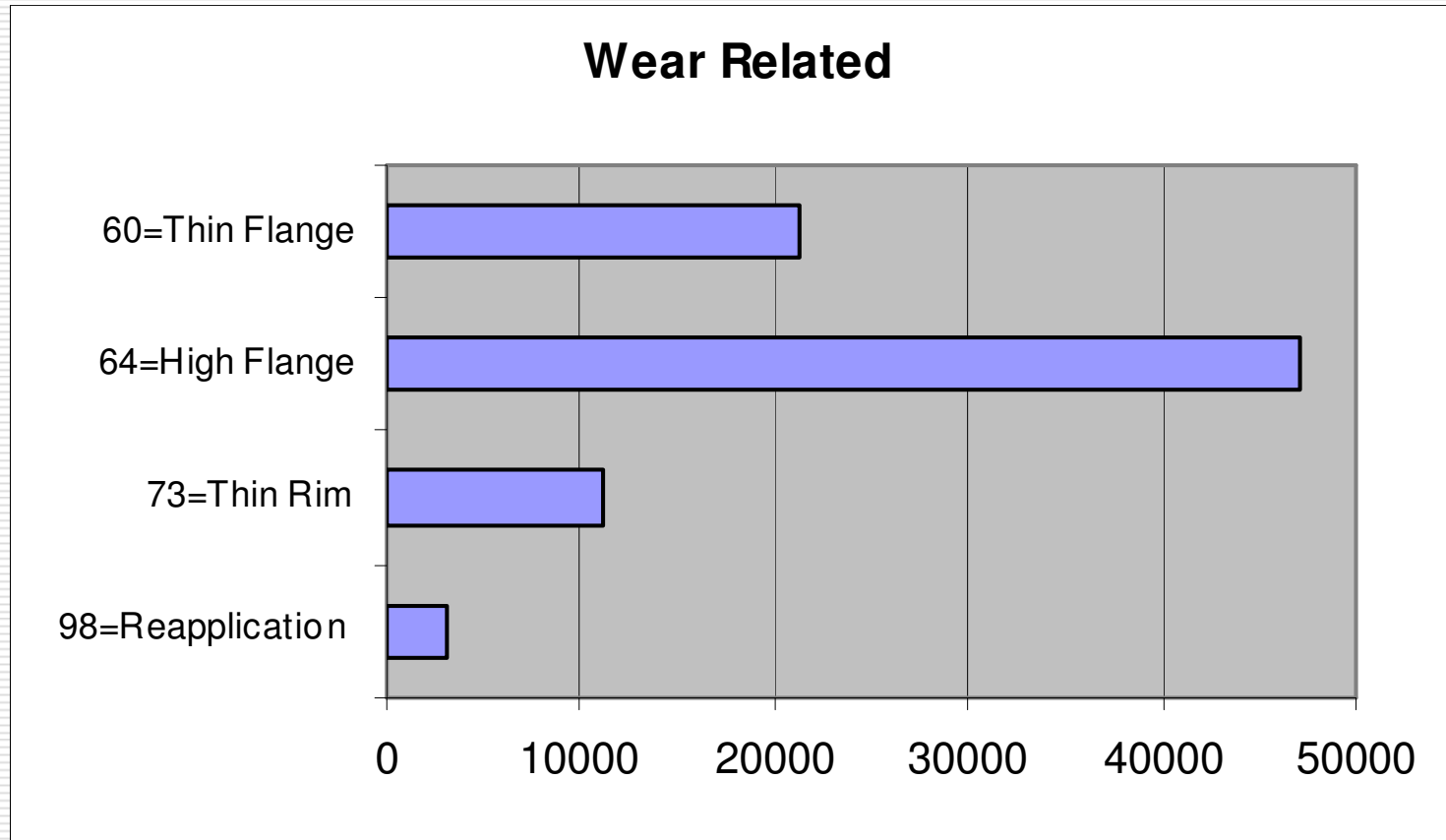
Unusual Trends

- Why Made Code 11 Removals have increased 75,000 during the past three years.**
 - Why Made Code 90 removals have decreased 55,000 during the past five years.**
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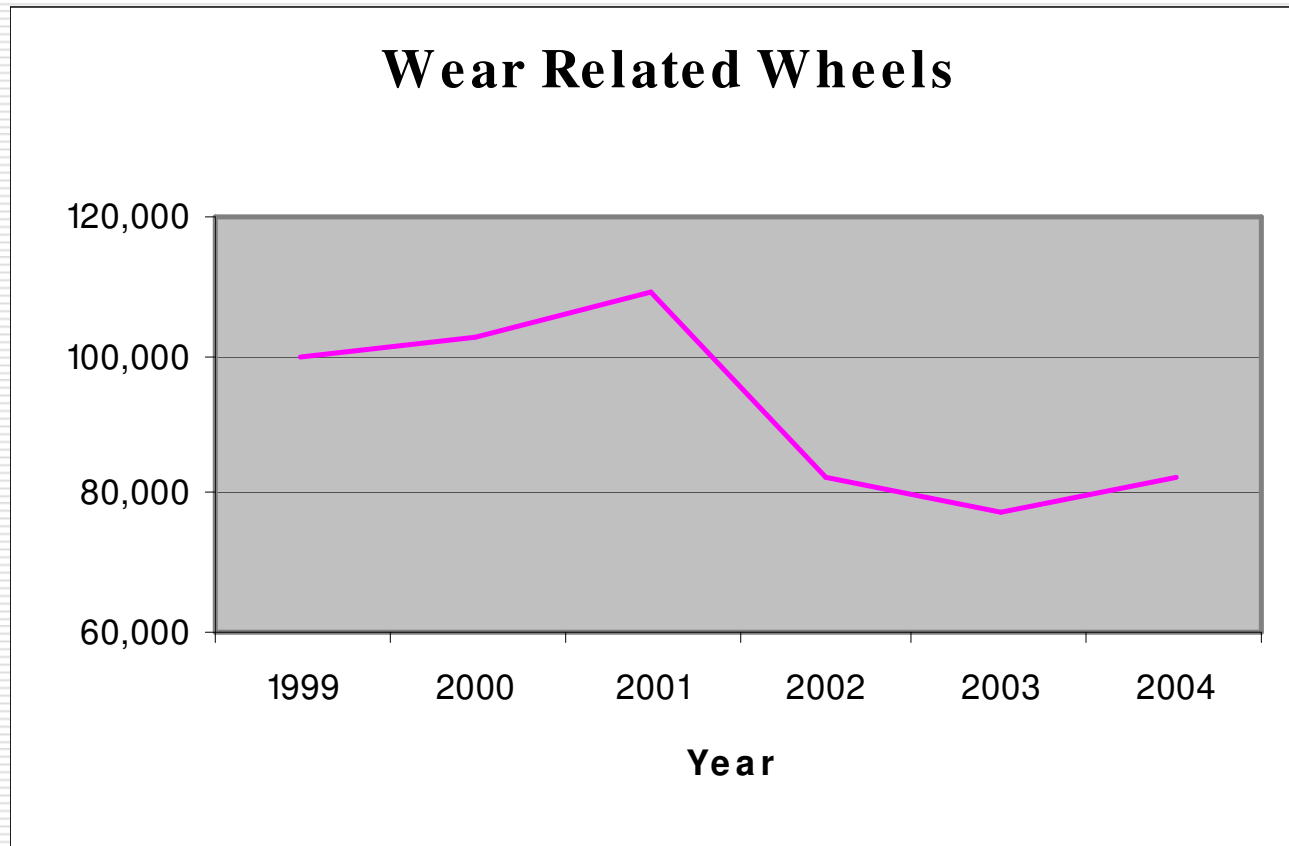
6 Year Trend – Administrative Wheels



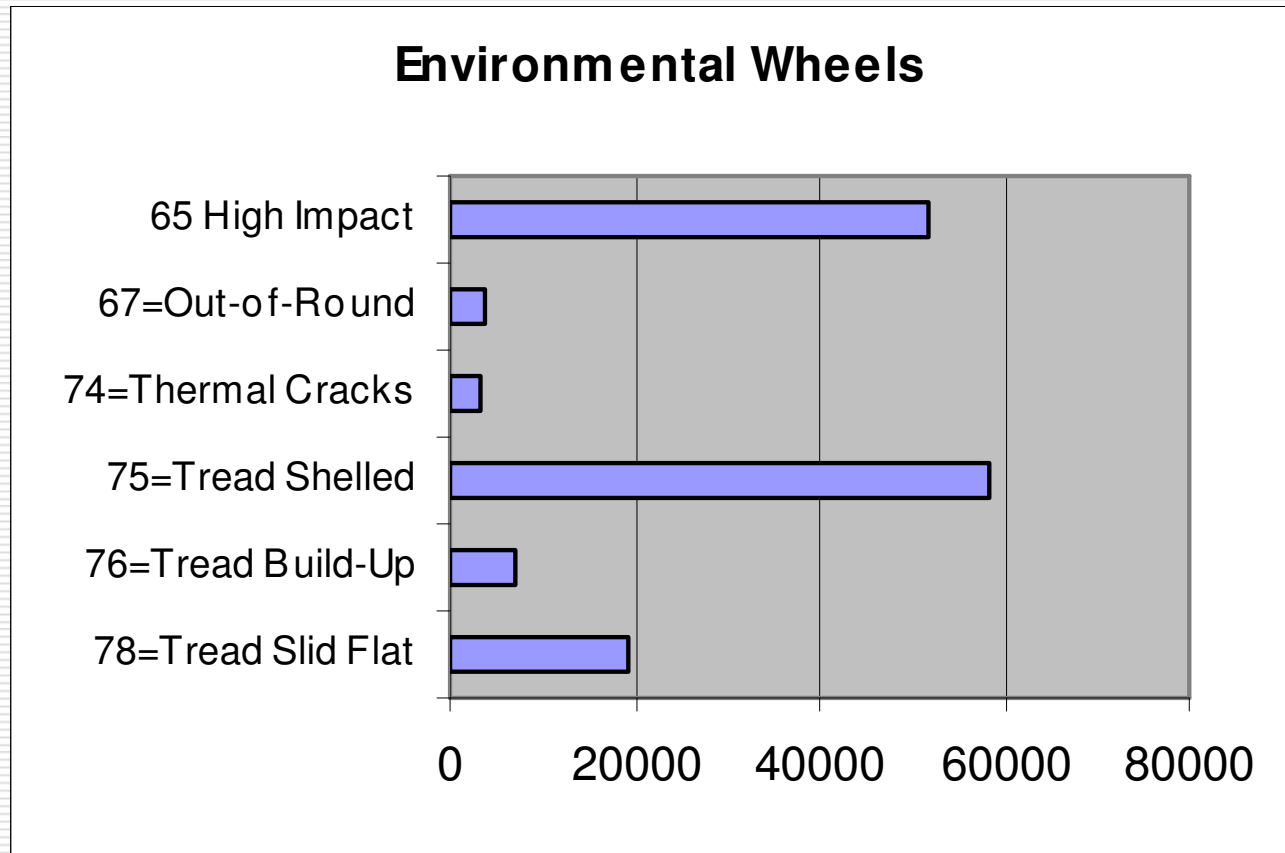
Wear Related



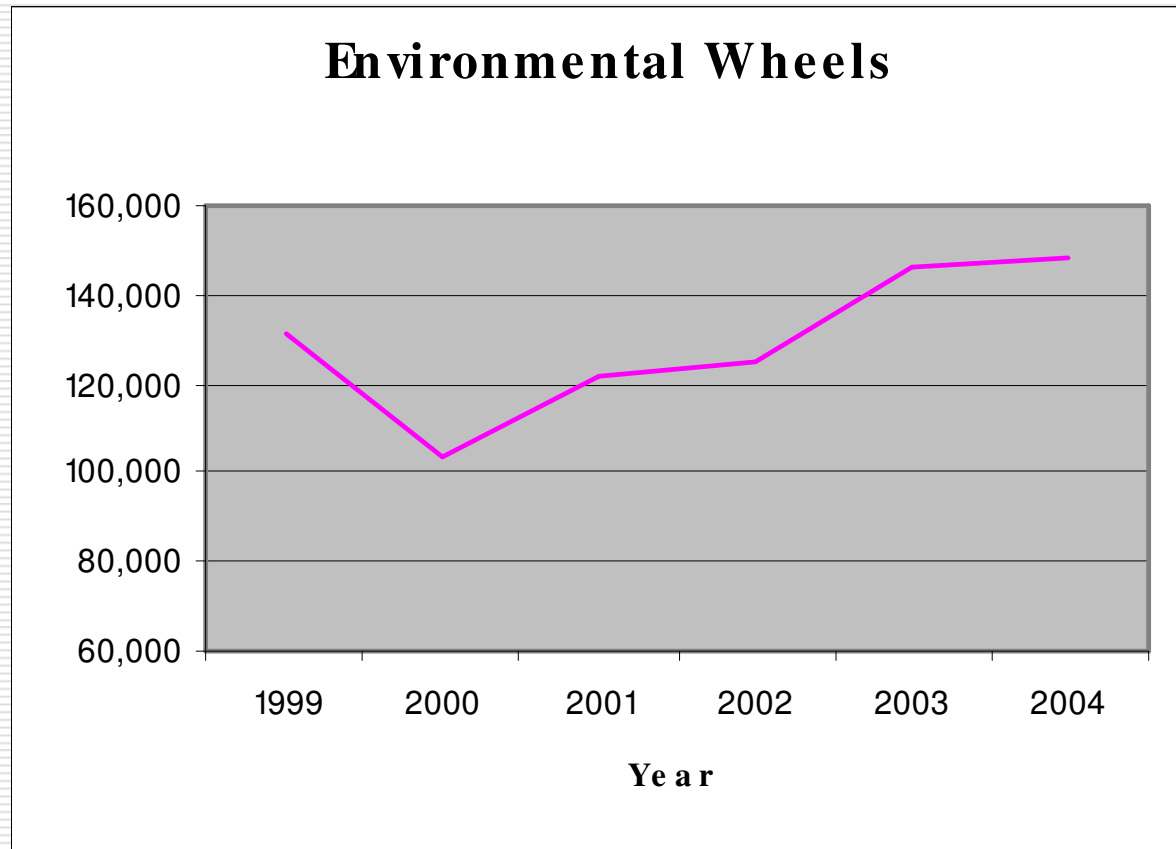
6 Year Trend – Wear Related Wheels



Environmental



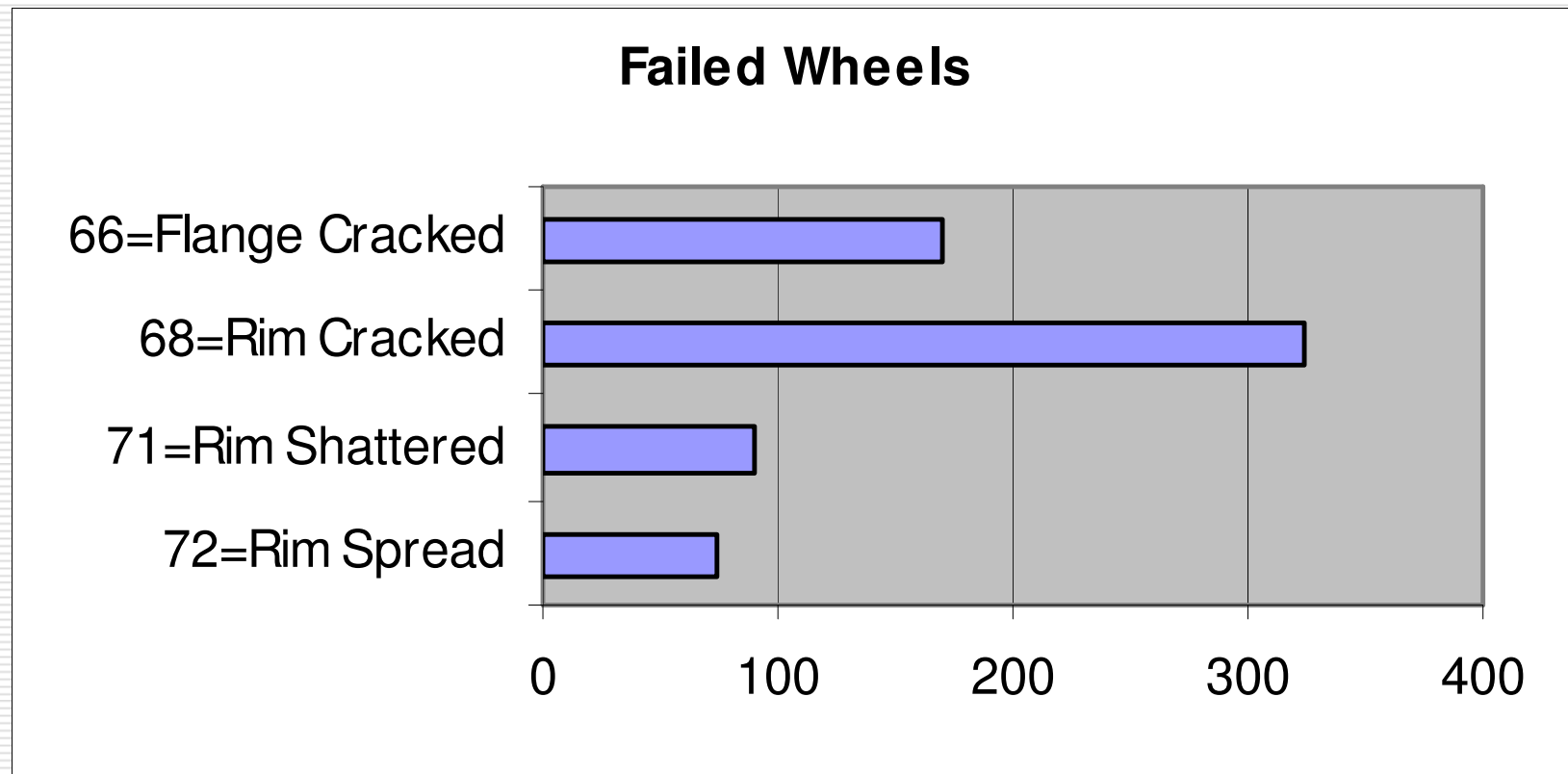
6 Year Trend- Environmental Wheels



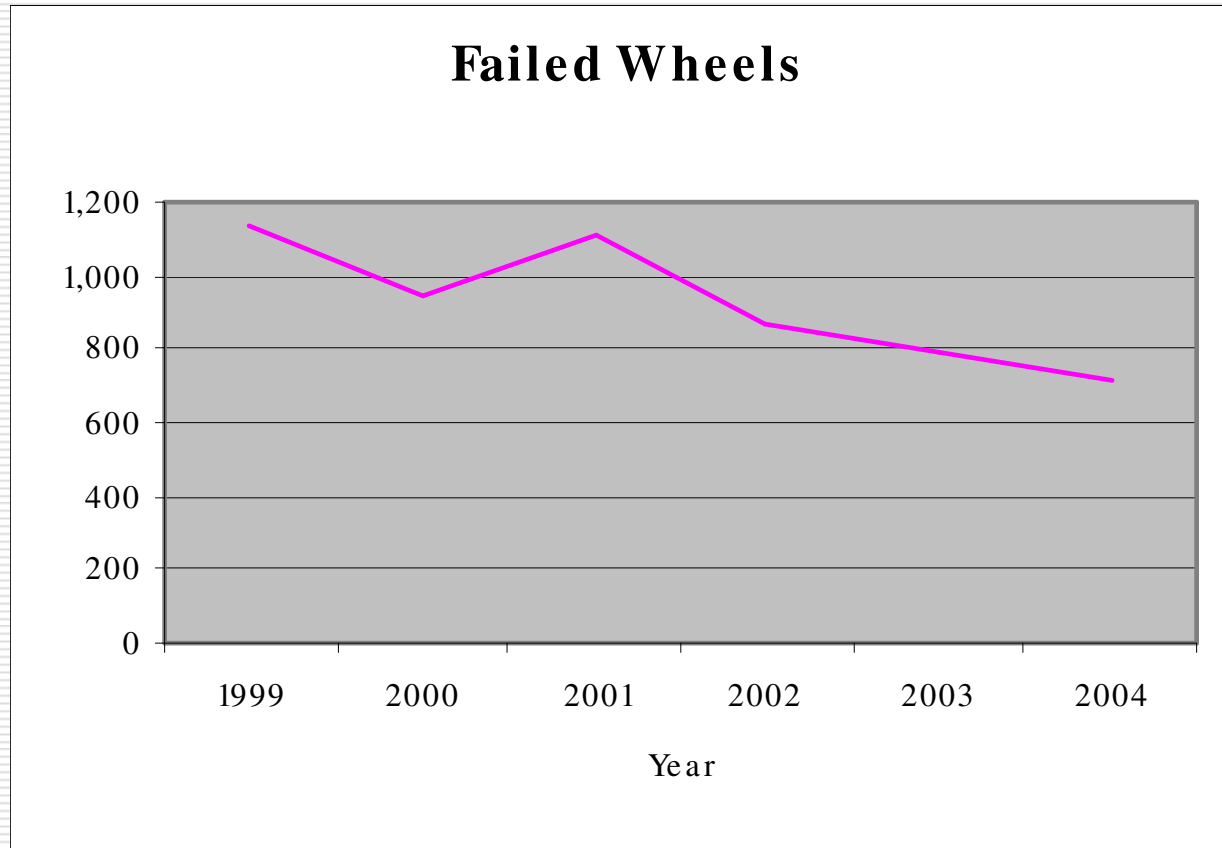
Cause for Removal

- 3 Most Frequent Cause for Removal of Environmental Wheels
 - Shelled
 - High Impact
 - Slid Flat
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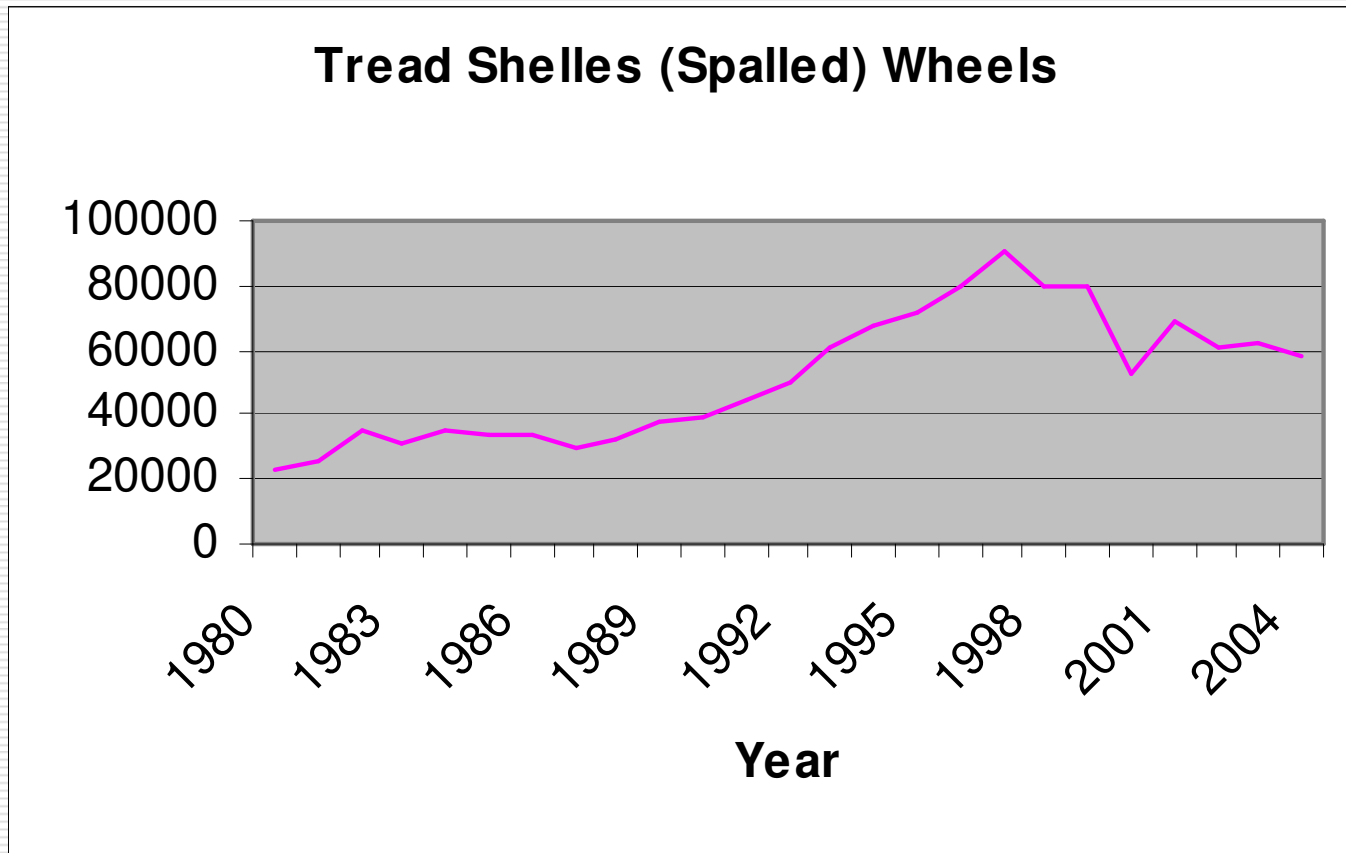
Wheel Failures



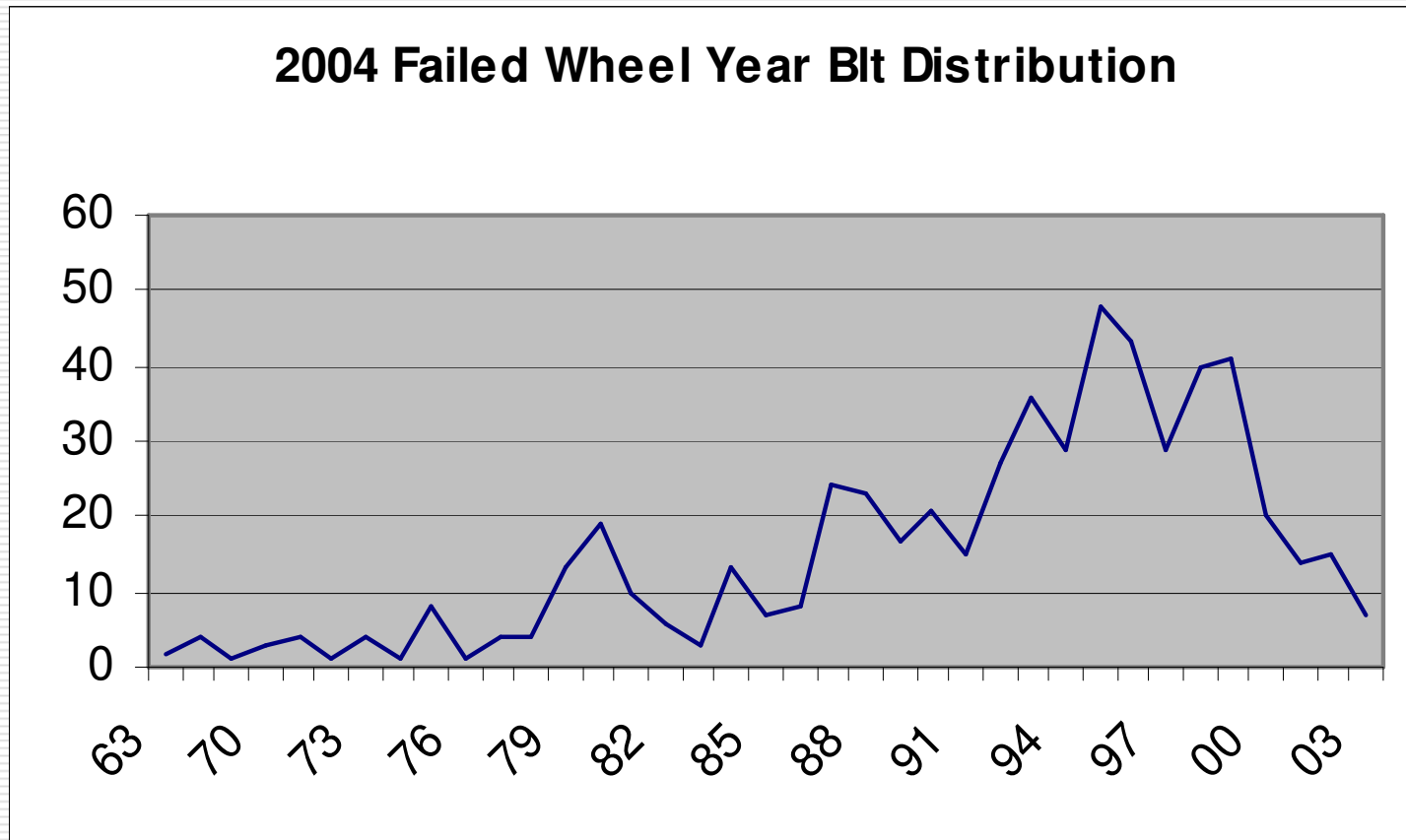
6 Year Trend – Wheel Failures



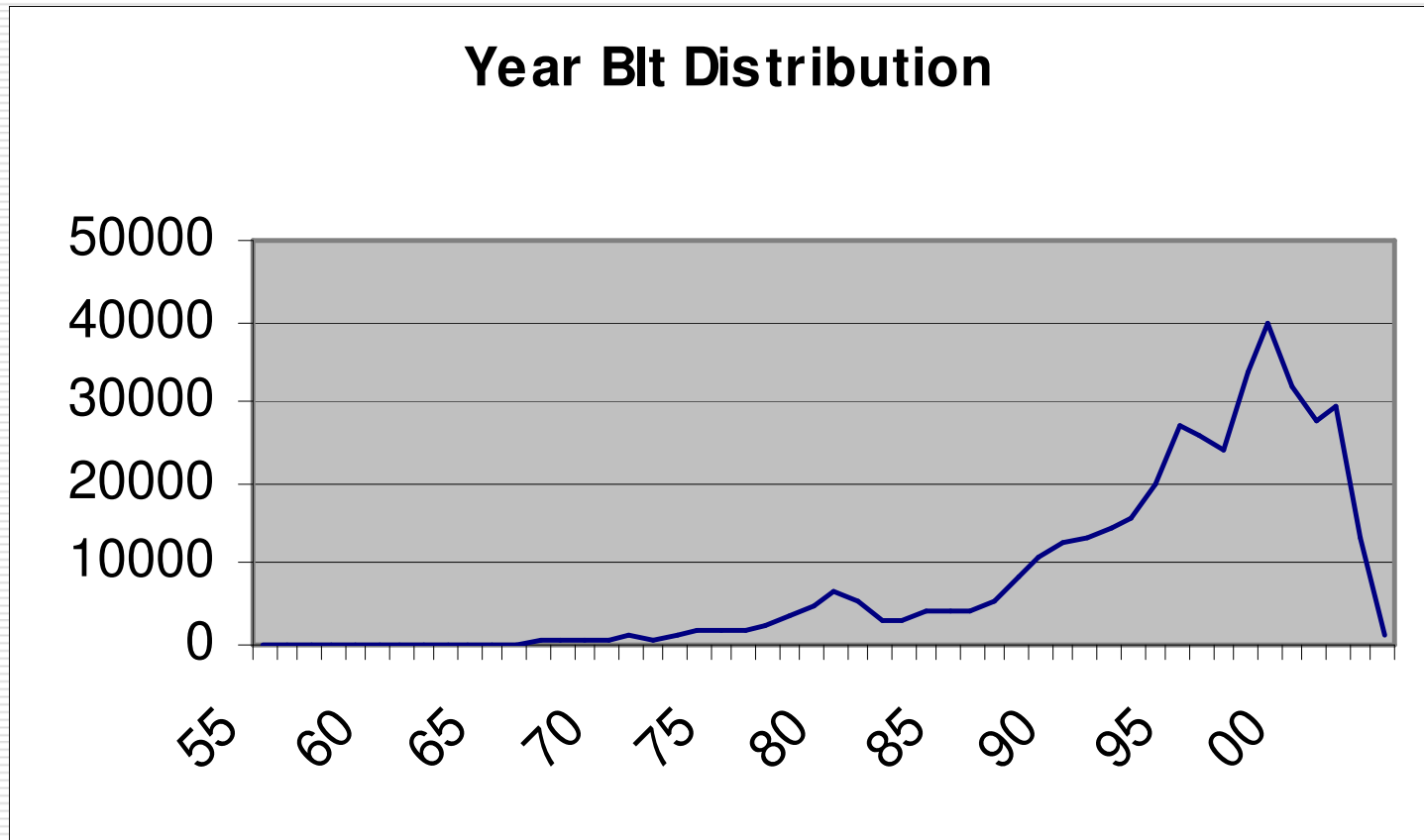
25-Year Trend Shell/Spall Wheels



Distribution of Failed Wheels by Year



Wheel Removals by Year Manufactured



Average Wheel Life/Category

<input type="checkbox"/> Administrative	8.2 Years
<input type="checkbox"/> Wear Related	10.0 Years
<input type="checkbox"/> Environmental	7.1 Years
<input type="checkbox"/> Wheel Failure	10.7 Years

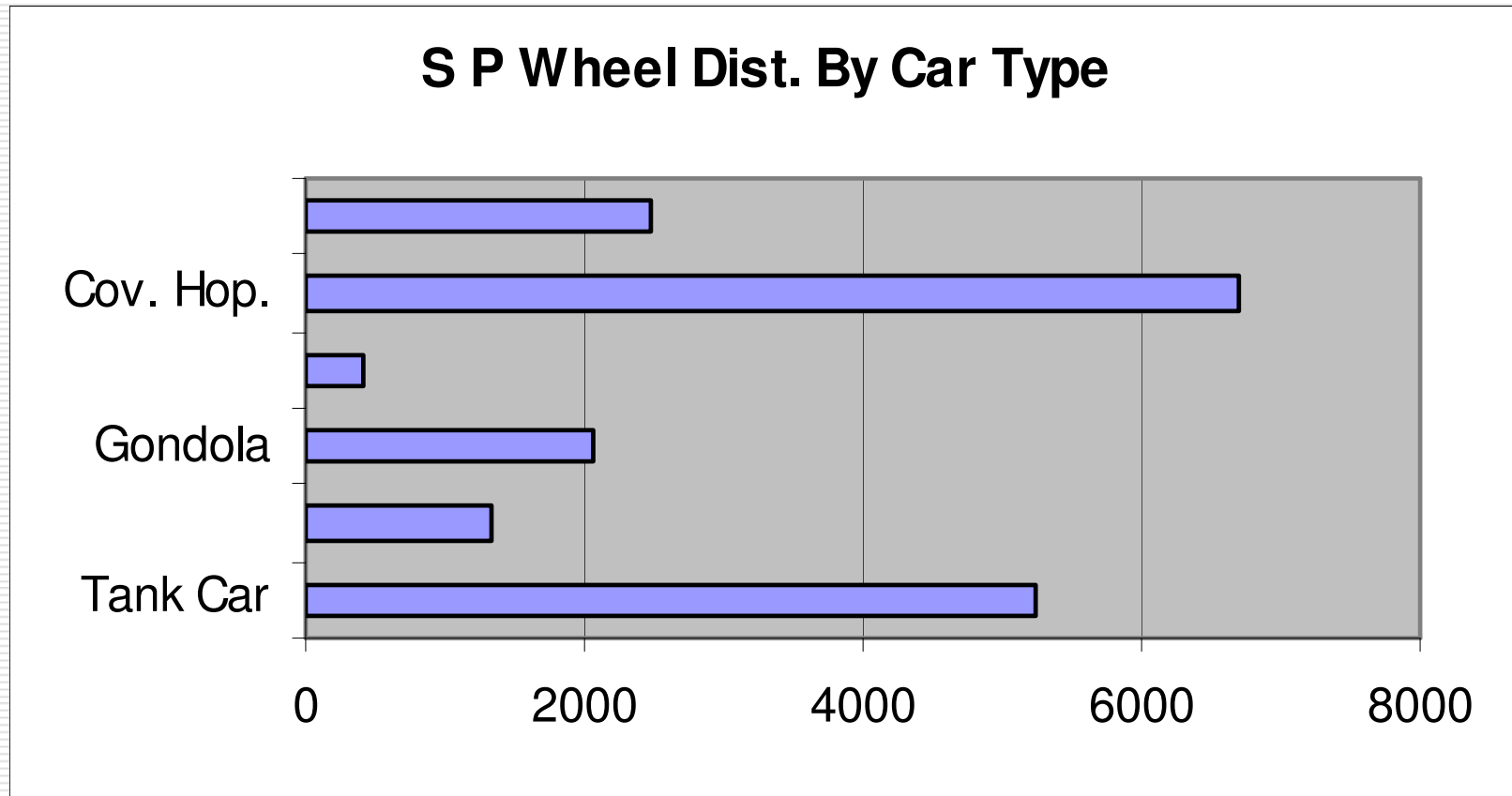
Average Wheel Life/Car Type

<input type="checkbox"/> Type of Car	Wheel Life, Years
<input type="checkbox"/> Box	9.6
<input type="checkbox"/> Gondola	6.9
<input type="checkbox"/> Hopper	7.9
<input type="checkbox"/> Covered Hopper	10.0
<input type="checkbox"/> Tank	10.3
<input type="checkbox"/> Flat	6.8
<input type="checkbox"/> Articulated	4.4

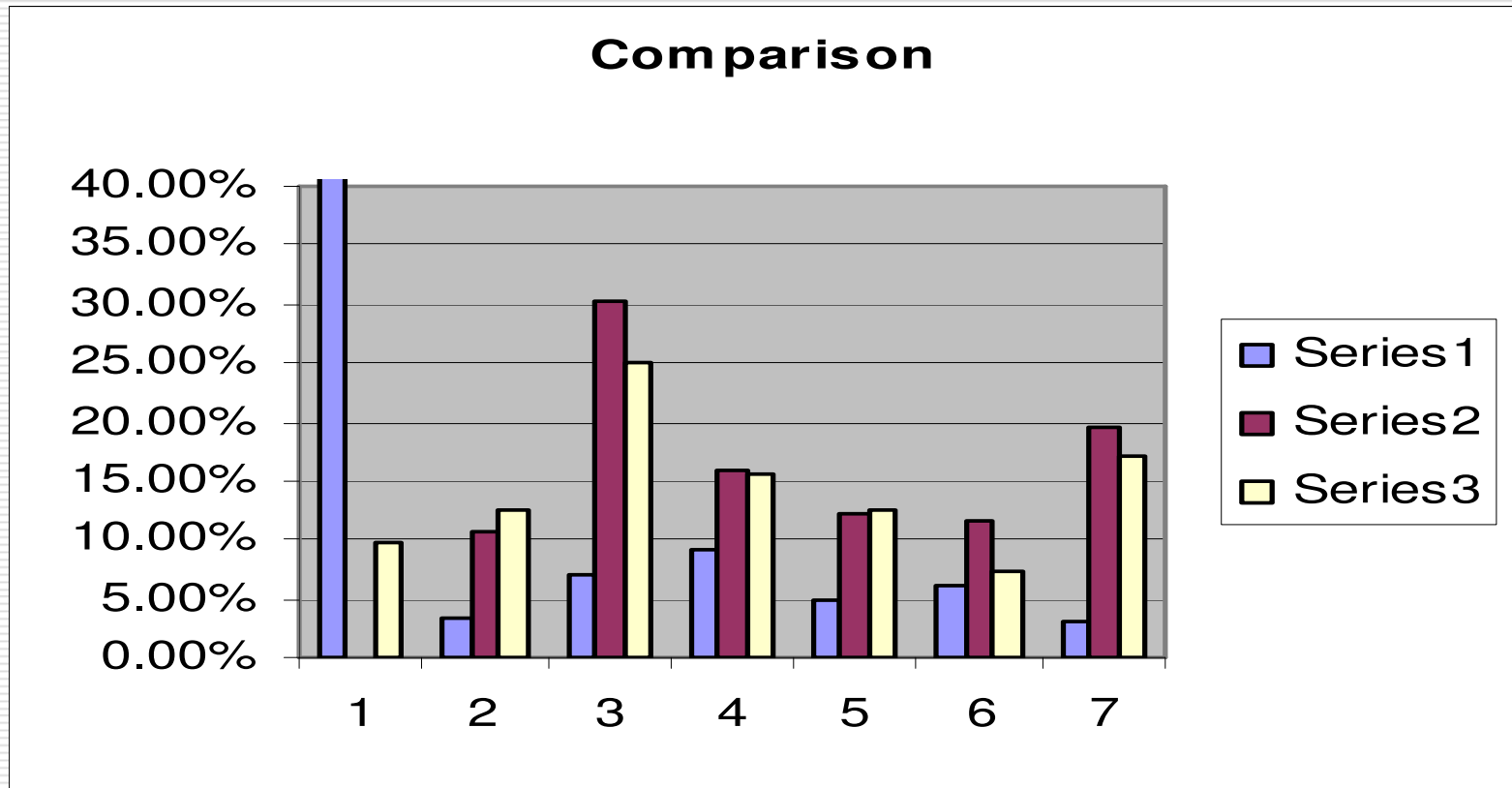
Distribution of Wheel Types

Wheel Type	HT-CP	NHT-CP	HT-SP	NHT-SP
AAR Raw	89.3%	7.2%	1.1%	2.4%
AAR Accel.	90.5%	7.3%	0.7%	1.5%

Distribution of SP Wheels



Comparison of Proposals to Normalize Wheel Data



RWMEC Recommendations

Already Implemented

- accelerate removal of straight plate wheels
 - improving their wheel marking procedures
 - Proposal to accelerate earlier removal of Non-Heat Treated Curve Plate Wheels
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RWMEC Recommendations

- Improve air brake testing methods.
 - Train employees about the proper use of hand brakes.
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Comparisons

- ❑ Removals for high impact are more common for 36-inch and 38-inch wheels.
 - ❑ 36-inch wheels have a higher percentage of wheels removed for slid flat, thin flange, built-up-tread and out-of-round.
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Comparisons

- ❑ Covered Hopper Cars have the most wheels for all causes.
 - ❑ Tank cars and covered hopper cars have the most wheel removals for shelling
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Future

- ❑ Wheel manufacturers continue to revise their wheel designs and process controls
 - ❑ RWMEC continues to review information from the CRB database
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THANKS

- RWMEC thanks the AAR for providing 2004 wheel repair data for this analysis and report.
 - RWMEC thanks the Railway Supply Institute and MARTS for the opportunity to present this information at the 2005 RSI conference.
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