



Chicago Freight Car Leasing Co.

A Snapshot in Time

Managing High Impact Wheels With Today's Technology

Presented By:

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Chief Mechanical Officer
Chicago Freight Car Leasing



Definition of a High Impact Wheel

- **A high impact wheel is one that records 90,000 pounds of impact or greater on a detector.**



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R3 Wheel from CRDX 13648





1st Step - Registration

- September 2004 car owners were asked to register their cars in the EHMS system.
- The EHMS is a secure system that allows the car owner to designate who will receive the daily Maintenance Advisory messages in e-mail format.



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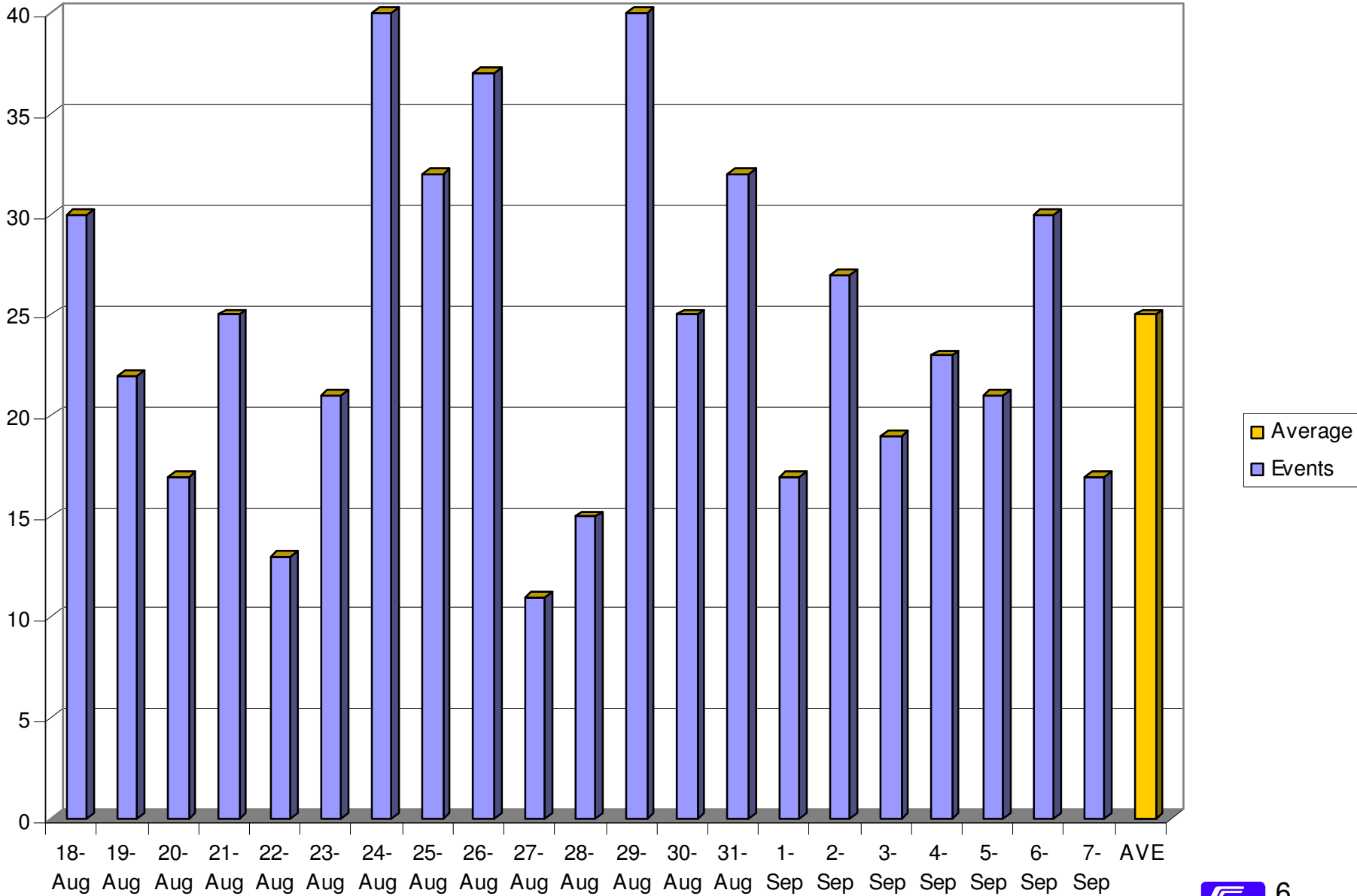
E-mail notifications sent from these addresses:

InteRRIS@Railinc.com	EHMS CRDX Final Alert_140KIP 1 Event	Fri 9/2/2005
InteRRIS@Railinc.com	EHMS CRDX AAR Condemnable _90-140KIP 4 Events	Fri 9/2/2005
InteRRIS@Railinc.com	EHMS CRDX Opportunistic Repair_80-90KIP 3 Events	Fri 9/2/2005
InteRRIS@Railinc.com	EHMS CRDX Window Open_ 65-80KIP 17 Events	Fri 9/2/2005

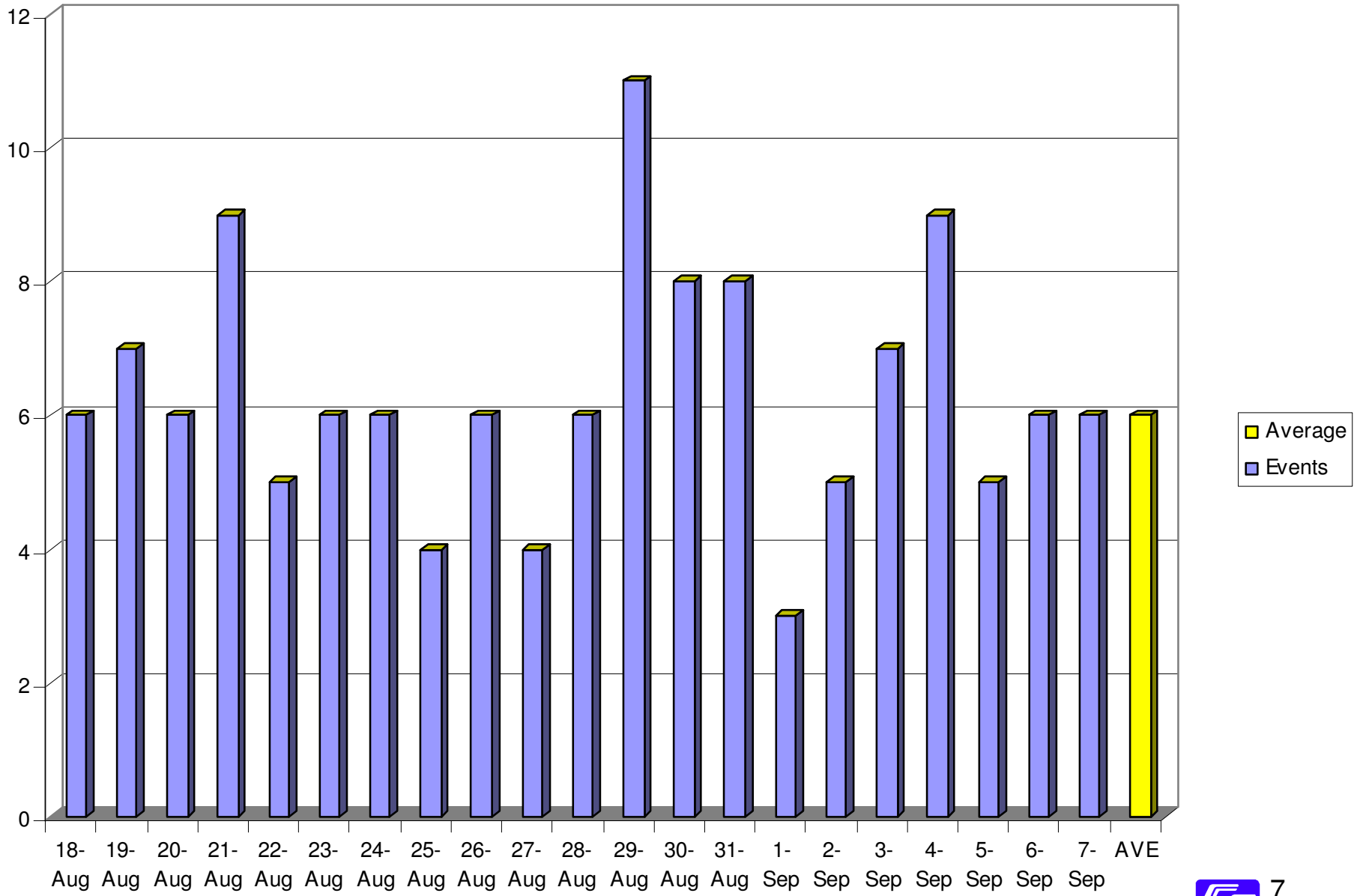
Data Provided in Attached Spreadsheet

• CAR_NAME	CRDX 11153
• UMLER_TYPE	C614
• TRAIN_DATE	01-SEP-05
• TRAIN_SPEED	45.71
• SITE_NAME	CSXT SPRINGFIELD TRACK_2
• EVENT_NAME	SWMV GT_EQ_90
• LEVEL_IN-GRP	1
• PRI_OR_SEC	P
• AXLE_NO	2
• TRUCK	B
• CAR_SIDE	L
• PCT_LOAD	92
• MEAS_TYPE	SWMV
• MEAS_VALUE	118.76
• CRITERIA_VALUE	90
• EVENT_FLAG	E
• CAR_MARK	CRDX
• CAR_NUMBER	11153

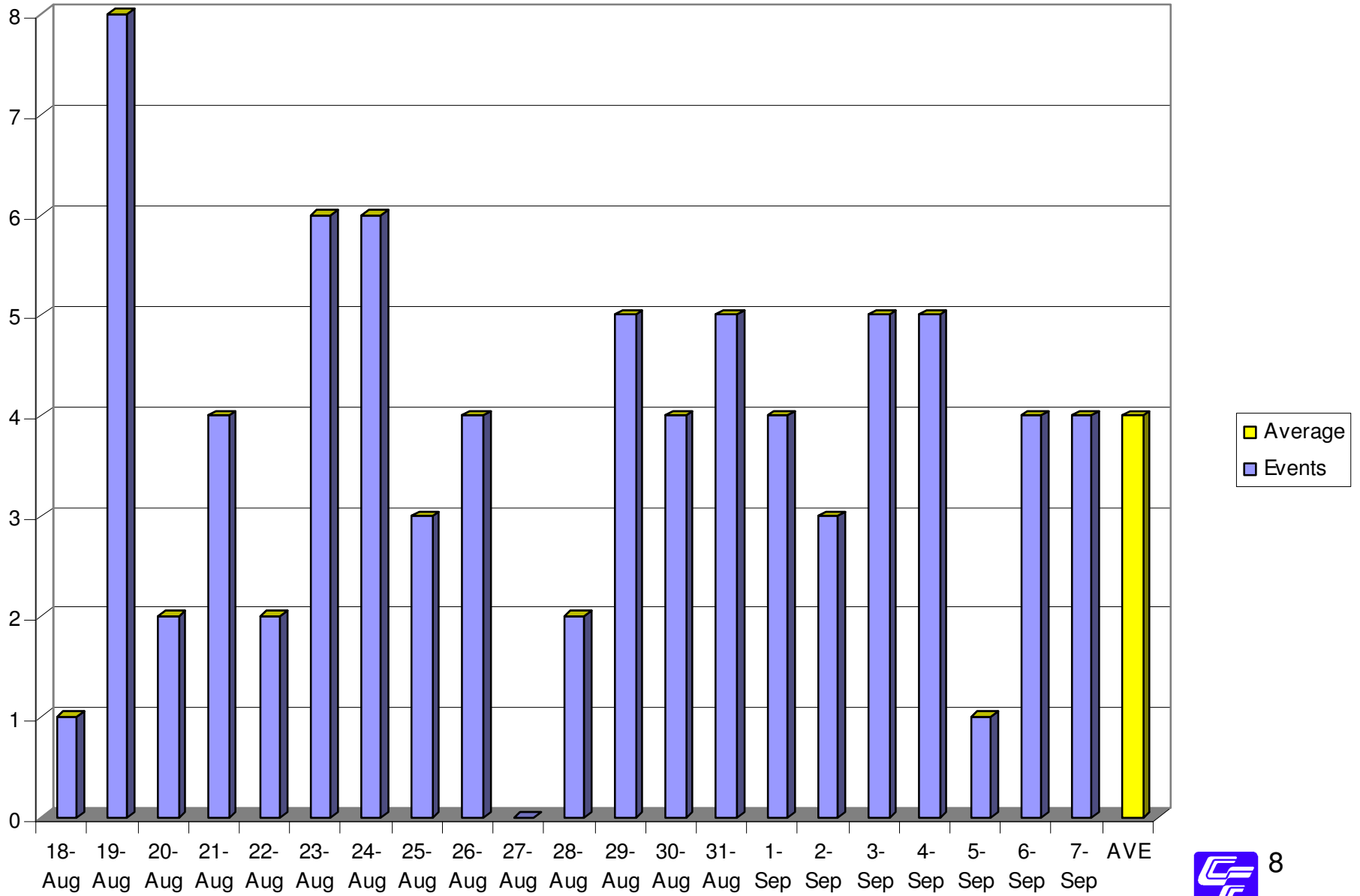
Events in Window of Opportunity



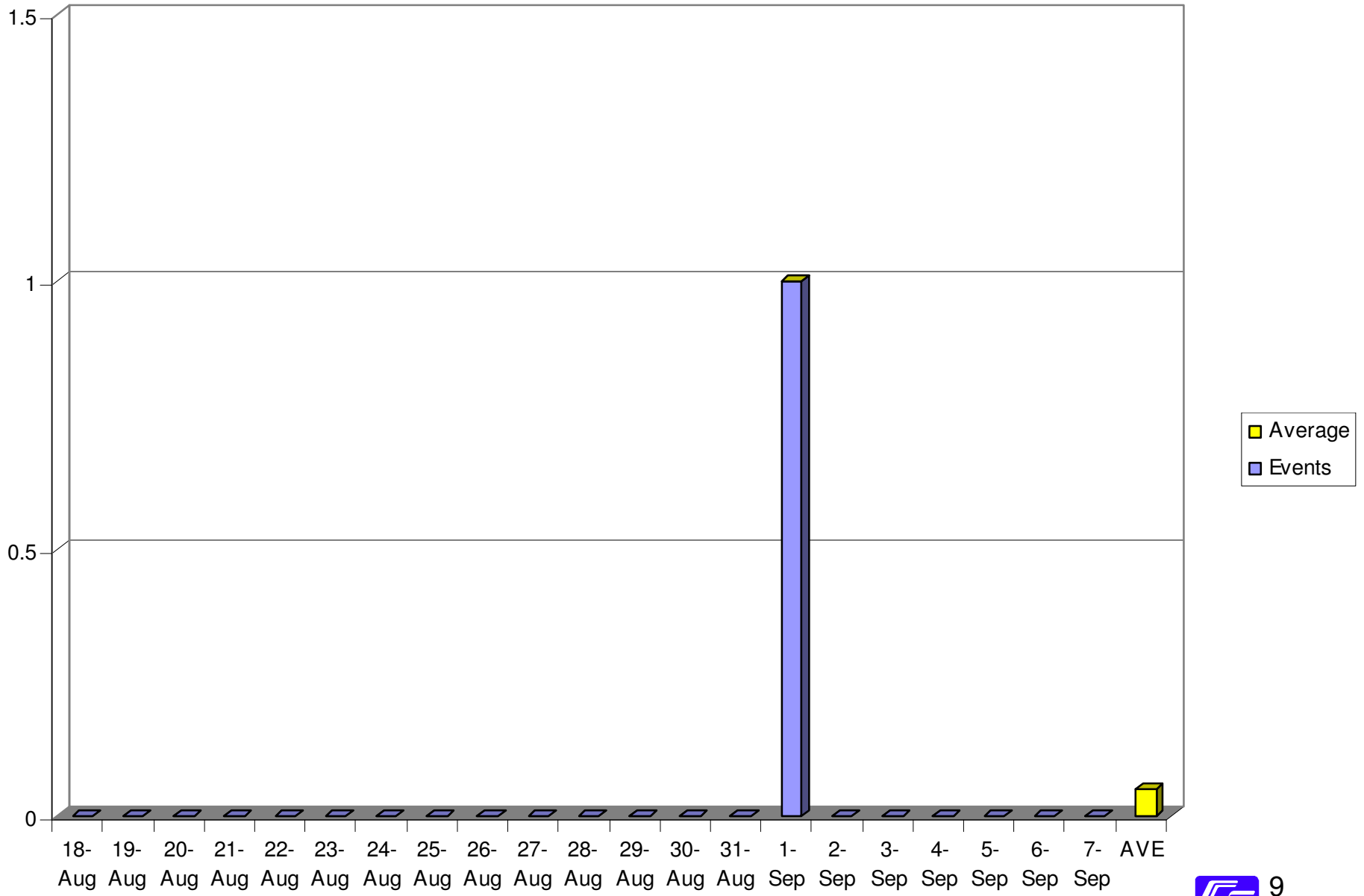
Opportunistic Repairs Events



AAR Condemnable Events



Final Alert Events





NOW “YOU” HAVE THE DATA

How do you compile it?

- a) copy & paste into flag types
- b) automate the download
- c) use 3rd party software
- d) turn it over to the “IT” dept.
- e) purchase additional “WILD” data



Speed and Load Correction

- 1 mile per hour = 1,000 lb momentum
 - 56 mph = 7 KIPS per wheel
- 286,000 lb car = 35.75 KIPS per wheel
- 263,000 lb car = 32.875 KIPS per wheel
- *Average car = 40-43 KIPS per wheel*

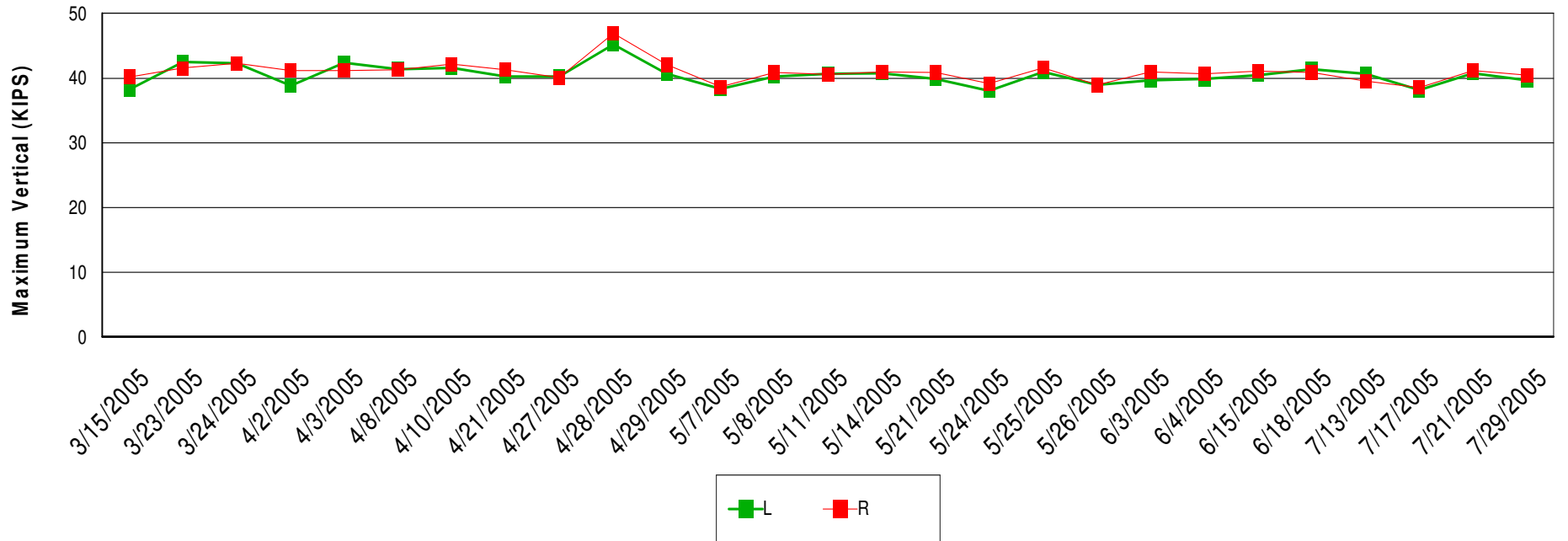


WILD Flags Report

Axle Location: 3

Car: CRDX 9550

Maximum Vertical By Train Date For This Wheel

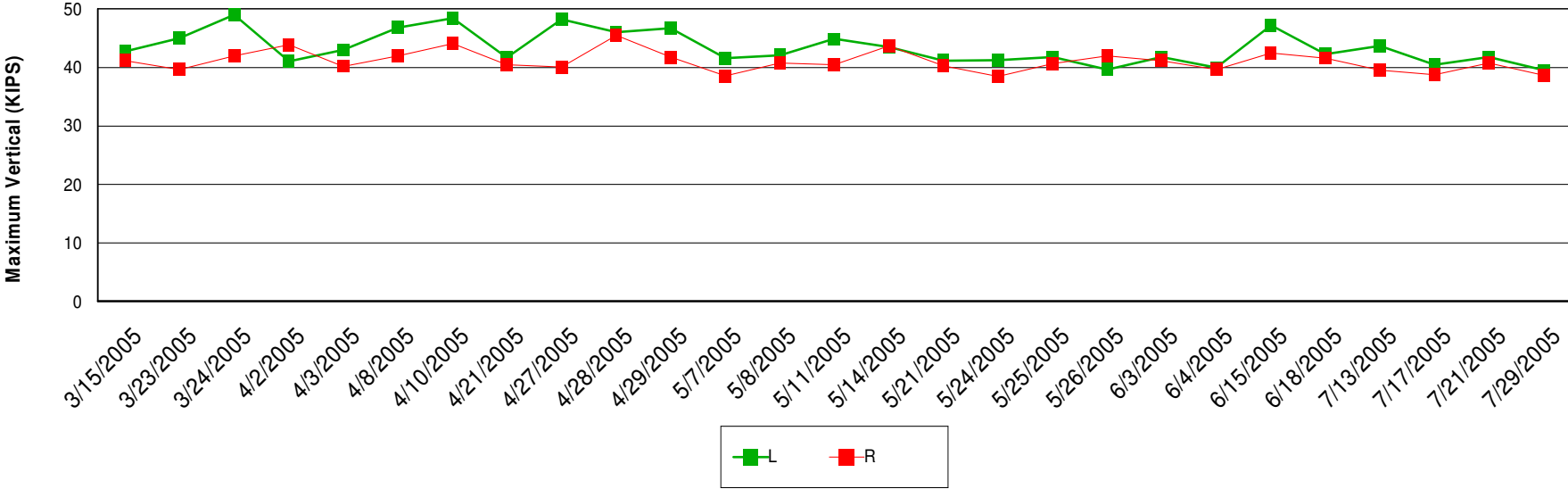




WILD Flags Report

Axle Location: 4
Car: CRDX 9550

Maximum Vertical By Train Date For This Wheel



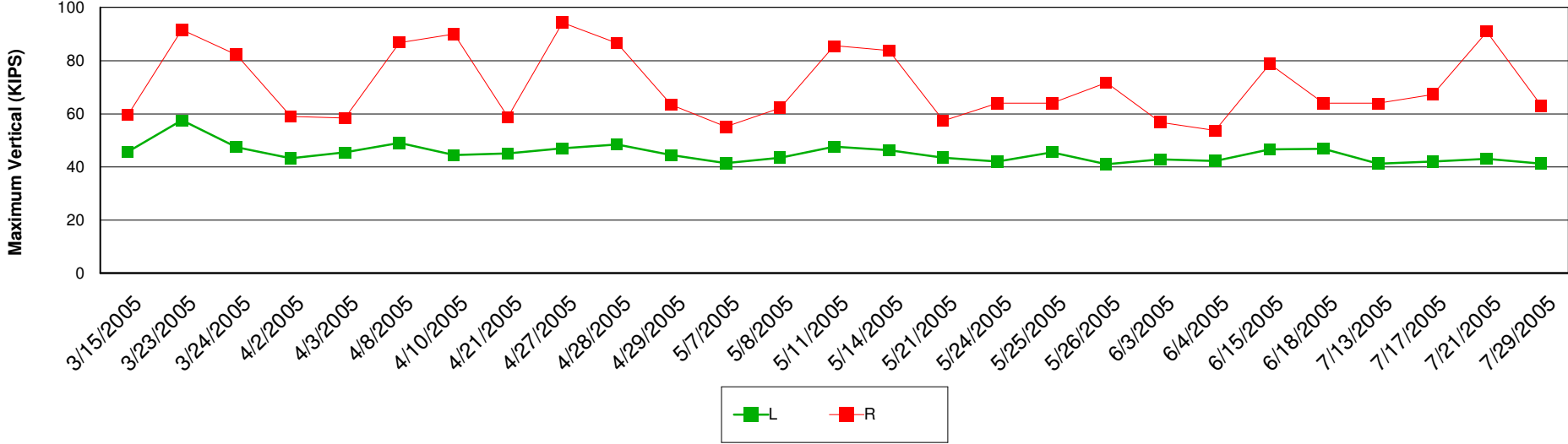


WILD Flags Report

Axle Location: 2

Car: CRDX 9550

Maximum Vertical By Train Date For This Wheel

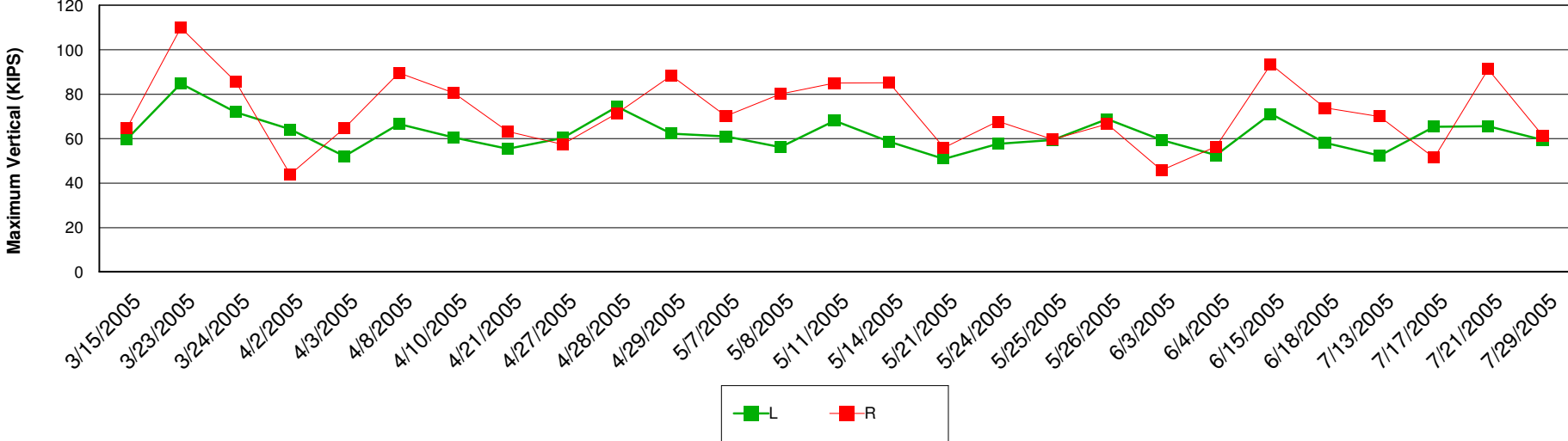




WILD Flags Report

Axle Location: 1
Car: CRDX 9550

Maximum Vertical By Train Date For This Wheel





Rule 44 – Wheel Sets

- Wheels identified in EHMS through a maintenance advisory as high impact must be reported within 24 hours by the repairing company when wheel change out has been performed. The instruction manuals for this application can be accessed at www.railinc.com.
- Before replacing a wheel set for any reason, repairing party must determine if there is any active wheel impact AAR Maintenance Advisory outstanding and remove from the Maintenance Advisory when the wheel is replaced.

NOTICE

As of September 16, 2005, Early Warning users are required to use Railinc Single Sign On (SSO) to access the Early Warning System.

<http://sso.railinc.com>

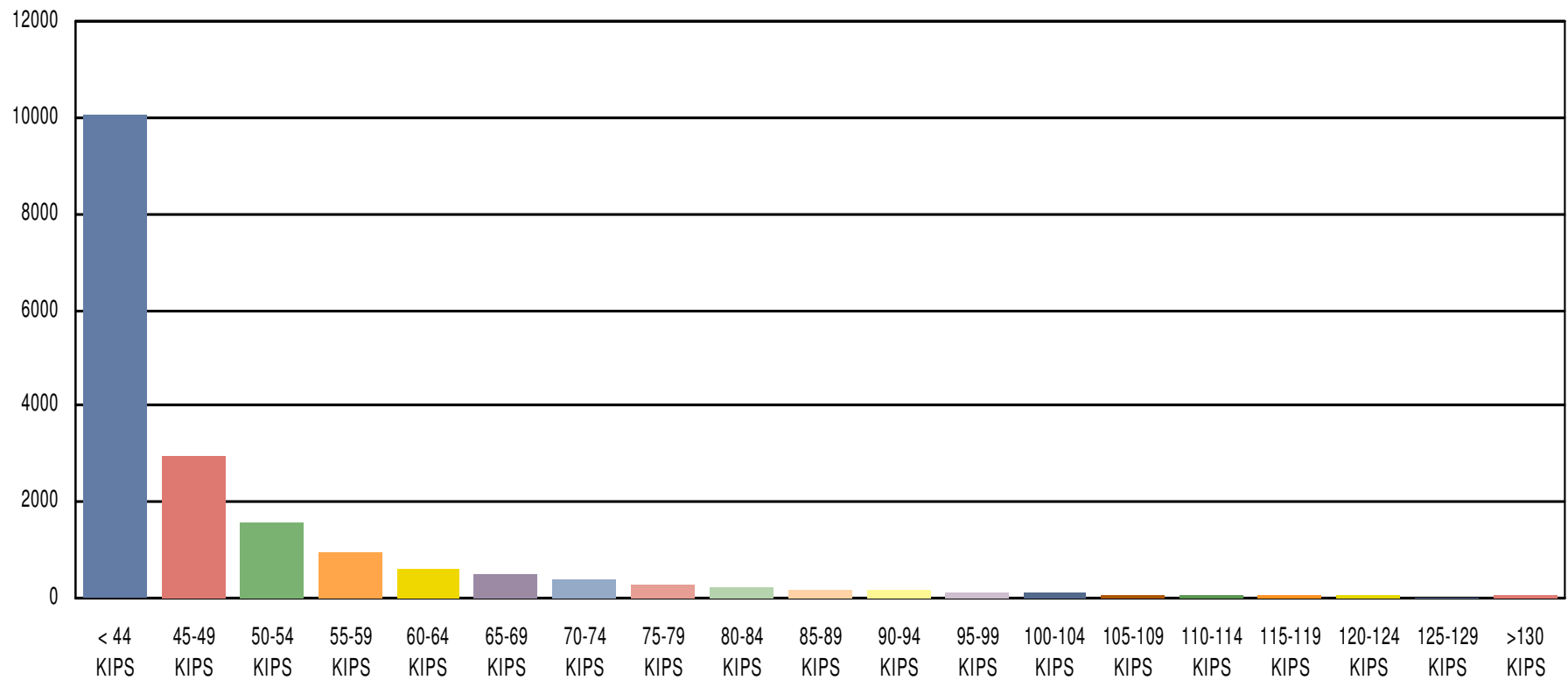


CHICAGO FREIGHT CAR LEASING CO.

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Wheel Set Distribution



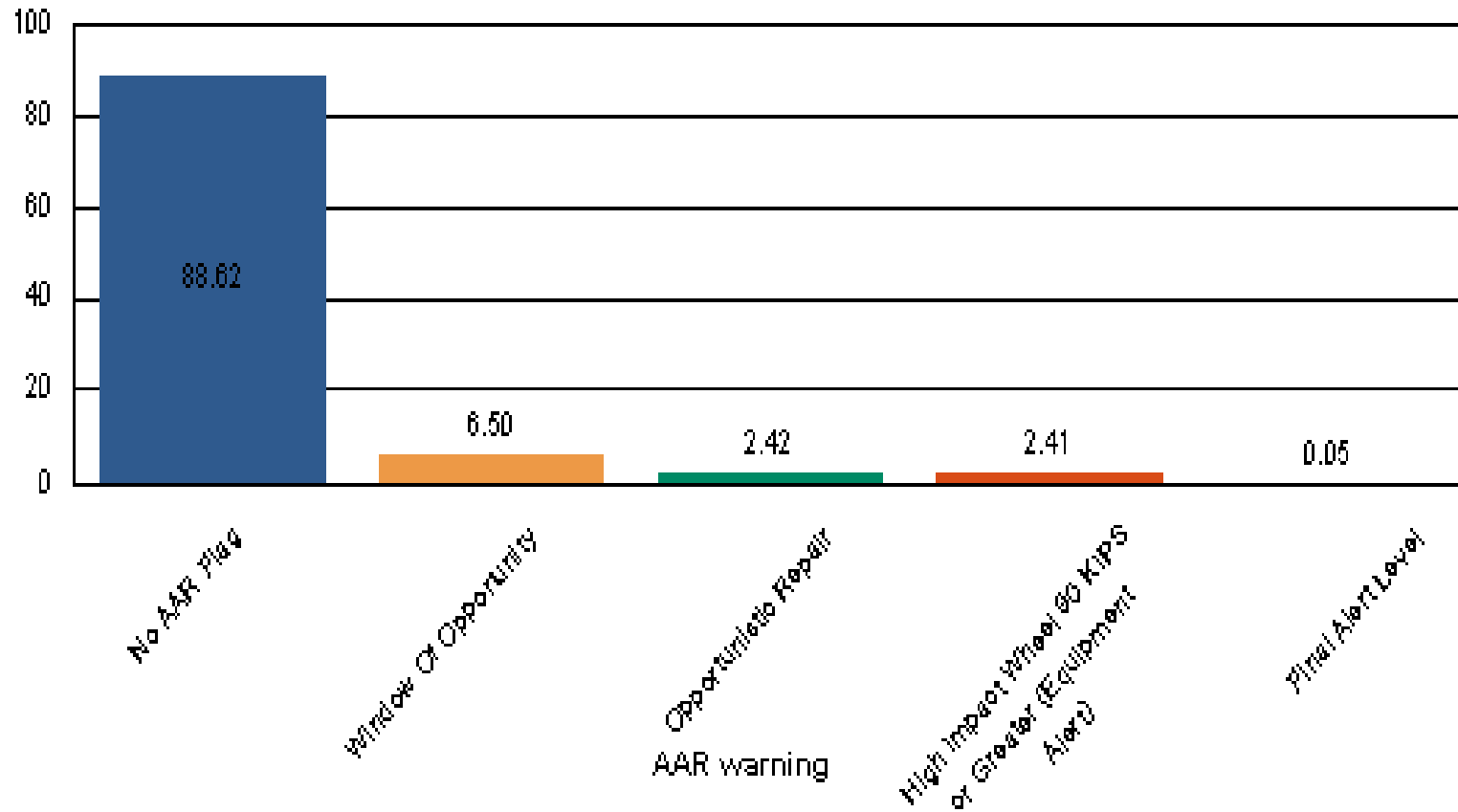
*“IF YOU CAN’T MEASURE IT,
YOU CAN’T MANAGE IT.”*

-RUDY BUSSARD
UNION PACIFIC RAILROAD



WILD Snapshot Report

Percentage of Wheel Sets by Flag Type



Snapshot Date:
Number of Cars over Detectors:
Total Cars in Fleet:

9/7/2005
5,628
7,533

% of Fleet Detected: 74.71%



Final Alert Level

<u>Car Initial</u>	<u>Car #</u>	<u>Train Date</u>	<u>Location</u>	<u>Max Vert</u>	<u>Proj Max</u>	<u>AAR Flag Description</u>	<u>AAR Warning Message</u>
CRDX	6457	04/25/2005	L 2	141	143	Final Alert Level	Wheel must be changed out on the handling line
CRDX	6886	12/28/2004	L 4	155	161	Final Alert Level	Wheel must be changed out on the handling line
CRDX	6886	12/28/2004	R 4	150	153	Final Alert Level	Wheel must be changed out on the handling line
CRDX	7242	05/16/2005	R 2	171	172	Final Alert Level	Wheel must be changed out on the handling line
CRDX	7256	07/03/2005	L 4	148	149	Final Alert Level	Wheel must be changed out on the handling line
CRDX	7762	03/05/2005	L 4	147	148	Final Alert Level	Wheel must be changed out on the handling line
CRDX	7793	02/15/2005	L 3	140	141	Final Alert Level	Wheel must be changed out on the handling line
CRDX	9582	05/16/2005	L 1	165	167	Final Alert Level	Wheel must be changed out on the handling line
CRDX	11153	09/01/2005	L 2	161	162	Final Alert Level	Wheel must be changed out on the handling line

<u>Car Initial</u>	<u>Car #</u>	<u>Train Date</u>	<u>Location</u>	<u>Max Vert</u>	<u>Proj Max</u>	<u>AAR Flag Description</u>	<u>AAR Warning Message</u>
CRDX	11153	09/01/2005	R 2	160	165	Final Alert Level	Wheel must be changed out on the handling line
CRDX	14471	06/24/2005	R 4	145	145	Final Alert Level	Wheel must be changed out on the handling line
CRDX	20558	02/17/2005	L 4	155	156	Final Alert Level	Wheel must be changed out on the handling line
CRDX	20624	05/04/2005	R 2	151	152	Final Alert Level	Wheel must be changed out on the handling line
CRDX	20686	03/02/2005	L 3	162	164	Final Alert Level	Wheel must be changed out on the handling line
CRDX	20703	02/18/2005	R 2	140	141	Final Alert Level	Wheel must be changed out on the handling line
CRDX	20721	02/28/2005	L 3	146	147	Final Alert Level	Wheel must be changed out on the handling line

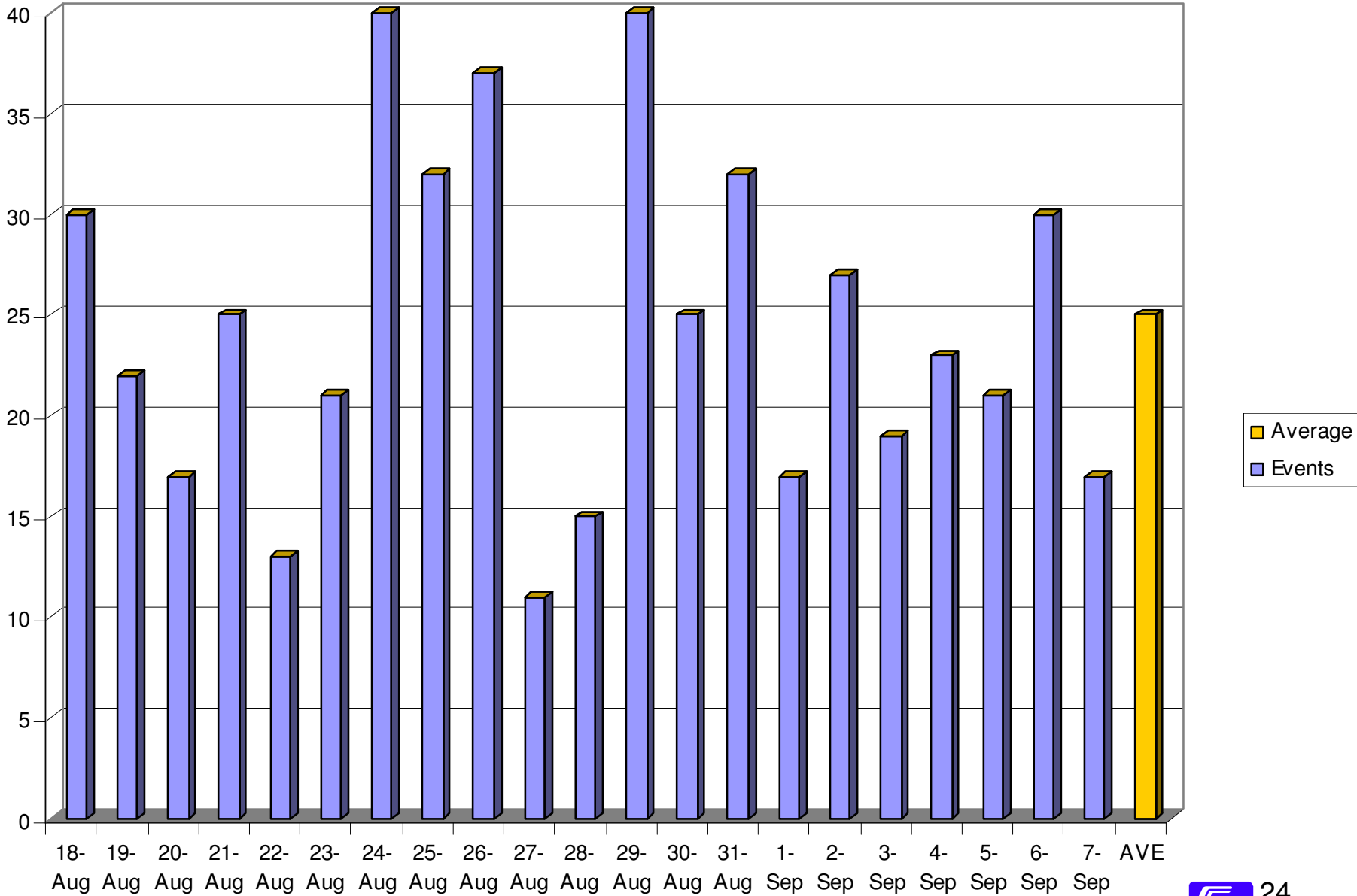


- Rule 41 - Effective July 1, 2005:
Condemnable when car is on repair track for any reason:

Detected by a wheel load impact detector reading from 80-90 kips per a single wheel.

To be coded as why made code 61.

Events in Window of Opportunity





Approximating Future Wheel Set Change Outs

Step 1. Calculate number of wheel sets for your fleet that will pass over a detector.

$$\text{Fleet size} \times 4 \times .75$$

Step 2. Calculate opportunities per month.

$$\text{Number of events per day} \times 30$$

Step 3. Calculate percent of wheel sets moving into the Window of Opportunity.

$$\text{Opportunities per month} \div \text{number of wheel sets from step 1}$$



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Based on CFCL previous experience changing wheels in 2003/2004:

Avg. 125 wheels sets changed per month.

25% changed for high impact.

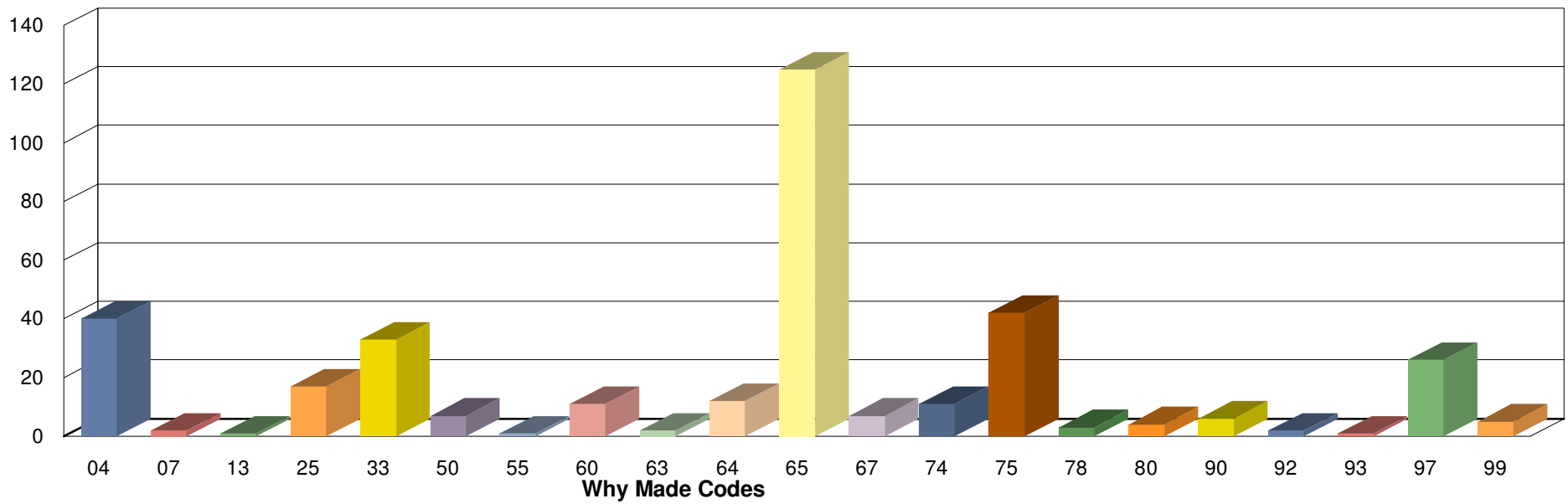
Based on future projections for wheel set change outs, CFCL increased the number of change outs on a monthly basis.

Implemented through an agreement with the Belt Railway Company to change out wheel sets within the Window of Opportunity.



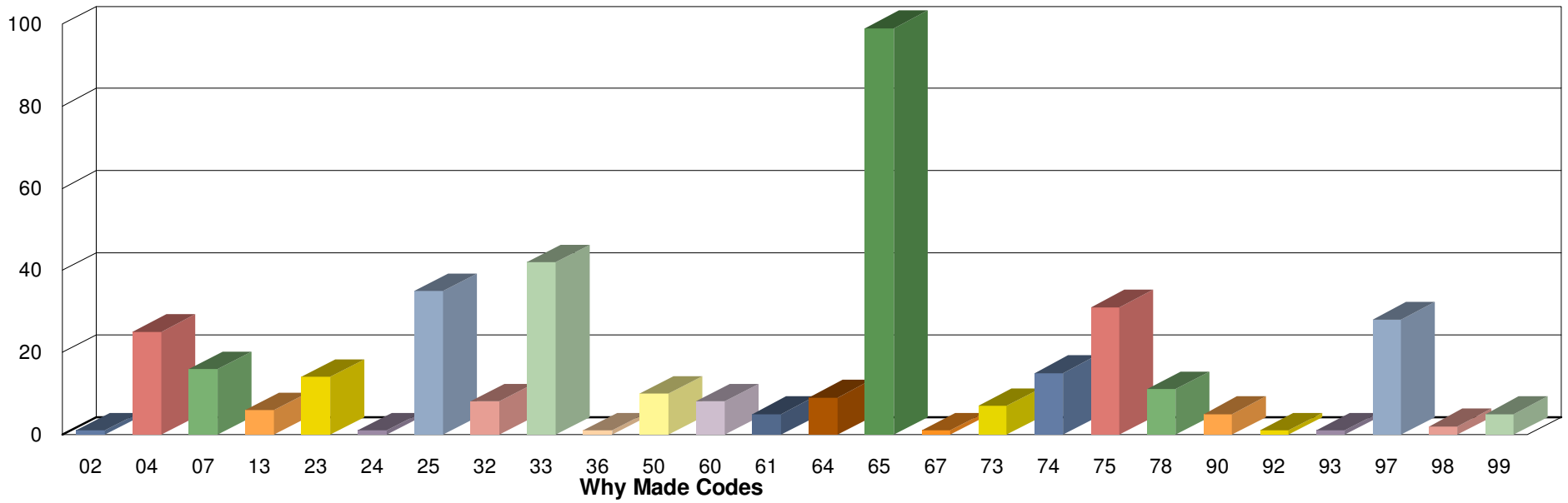
Why Made Codes for Wheel Change Outs

June 2005

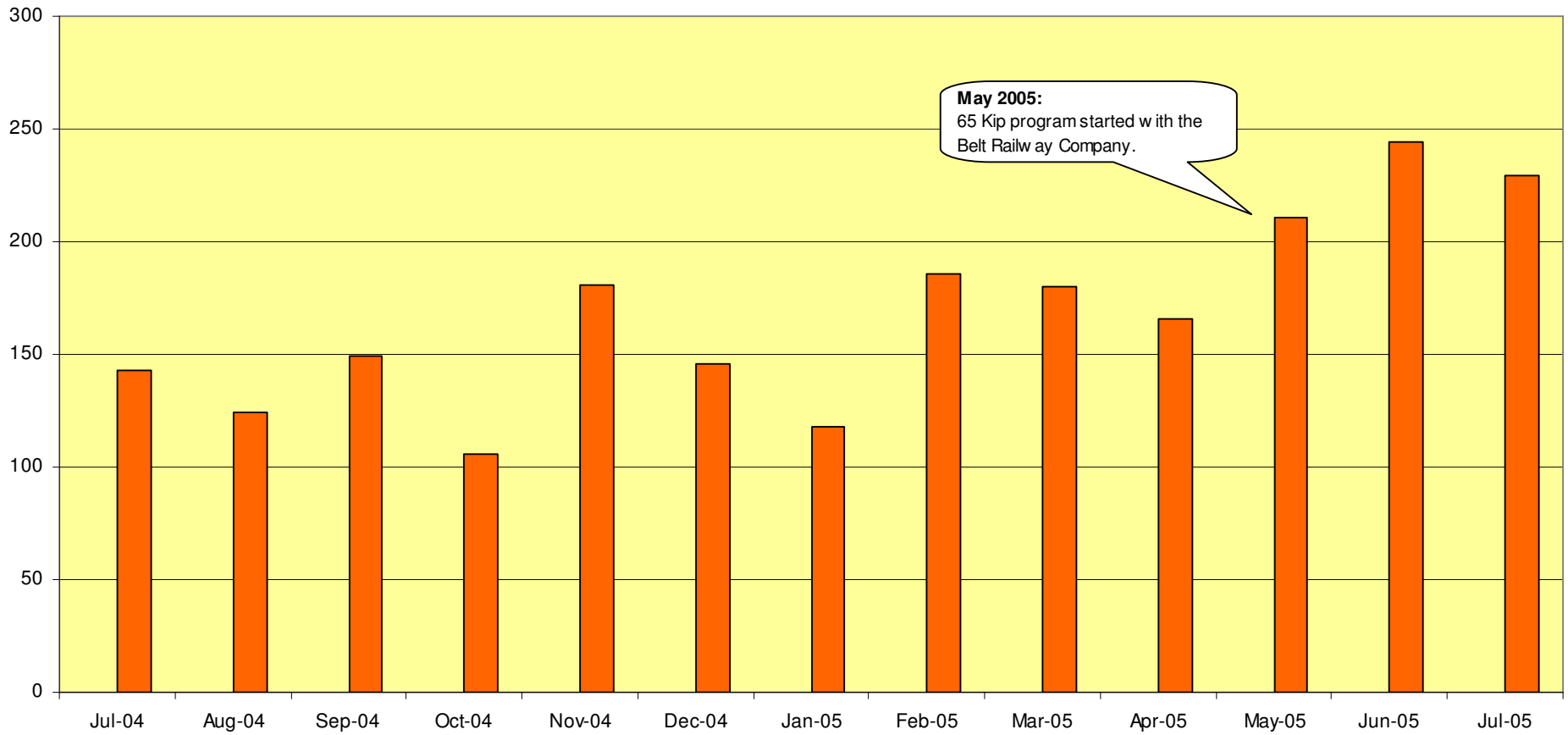




Why Made Codes for Wheel Change Outs July 2005



Wheel Sets Changed July 2004 – July 2005



Percent of Wheel Sets Changed for High Impact & Shelling

