ATSI Update
September, 2008

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Agenda

- Overview
- EHMS Update
- ATSI / EHMS Statistics
- Questions / Comments
ATSI – Going Forward

Condition after Major Shopping

Home Shopping for Extensive Repairs
ATSI – Going Forward

- **Condition after Major Shopping**
  - During a major shopping event, the car owner has control over his equipment
  - Rule 88 currently lists expectations for car condition “At Any Time”, and after “Major Shopping”
  - Using wayside detector data and EHMS, car owners will be aware of the health of various car systems
  - We expect that some of these conditions will be considered for inclusion in Rule 88 or in specific component/system rules
    - Conditions likely to continue to degrade in a reasonable time in the future
    - Similar to RIP track “Opportunistic Repair”
    - Example is Rule 46-E-8: “Window of Opportunity” identified for truck for a single incident of hunting above 0.20
ATSI – Going Forward

- Home Shopping for Extensive Repairs
  - Railroads are constrained on the number of hours of work that can be performed
  - Using wayside detector data and EHMS, car owners will be aware of the health of various car systems
  - We expect that some of these conditions that have historically required Home Shopping will be considered for inclusion in various Field Manual rules
  - EHMS will alert Railroads, Car Owners and Shops
    - Cars should be appropriately routed and repaired
    - Alert “closed-out” in EHMS
    - Example is Rule 46-A-g – Truck Hunting
    - Example is Rule 46-A-h – Truck Performance
ATSI Interaction with Other Committees

- Technical Committees (MSRP’s)
- ARB Committee (Interchange Rules)
- ATSI & EHMS
- Strategic Research
EHMS Alert Close Out

Car in Service

Inspection/Detection Determines Health of Car Component or Sub-System

No Adverse Conditions Detected

AAR Actionable Defect Detected

Data Summary Opened

Repair Made by Car Owner or Agent - Requires Home Shopping

Component or Sub-System Remedied

Repair Made by Car Owner or Agent - Repair Invoiced Through CRB System and Settled

EHMS Alert / Data Summary Closed
2008 Data Summary Project

- Allows for early sharing of detector data outside of AAR rule making process
- Data summaries may contain both AAR actionable defects as well as “items of concern”
  - Note: Repairs may be made ONLY for AAR actionable defects!
- Provides the ability to combine information from different sources, allowing us to better determine “overall car health”
- As AAR Interchange Rules and Technical Standards are promulgated, they will also generate EHMS alerts
- Presented as adjunct to, not replacement for InteRRIS
UP – WILD – XX123123 R2
Max Peak = 82
Max Dyn = 60
Max Ratio = 7.2
Count Pk90 = 0
Count Dyn30 = 8
Count Ratio3 = 6
Count Ratio4 = 4
Date1Pk90 = null
Date1Pk80 = 11/22/2006
Date1Dyn30 = 10/15/2006
Last Updated = 5/2/2007
Last D-R>20-2 = 5/2/2007
Data Summary Example

UP – WILD – XX123123 R2
Max Peak = 82
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Last Updated = 9/15/2008
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AAR Condemnable
Limit = 90 kips

Peak

Dynamic

Weight

Load (kips)
How Can I Be Sure The Repair Is Valid?

- EHMS Alerts can be filtered for AAR actionable items
  - Opportunistic Repairs – valid when a car is already on a repair track
  - AAR Condemnable – valid at any time
  - AAR Final Alert – valid at any time
2008 Data Summary Project System Flow

- Data Summaries are generated as a result of previous research
  - Industry research
  - Railroad specific research
  - Other research

- Summary format and data is approved by ATSI Committee
  - Include combination of data types and measures
  - Includes thresholds for level of interest
  - Specifications distributed to message users

- Data Summary results may be considered as a part of the AAR rule making process
  - Information in Data Summaries may result in new AAR rules
2008 Data Summary Project System Flow

- Summary format and data is approved by ATSI Committee
  - Include combination of data types and measures
  - Includes thresholds for level of interest
  - Specifications distributed to message users
- Summary sent to EHMS by each detector owner
- Summaries available on-line
- Summaries provided to subscribers
  - Temporary subscription can be requested to have data pushed
- Defined job codes/inspections close certain summaries
  - Some data summaries may require manual close out
- Closures pushed to subscribers based on profiles
EHMS Data Summary Facilitates “Car Health Analysis”

- Low level alerts in several different types of detectors
- When all are present, car presents higher level of risk for service interruption
  - “The Sweet Spot”
- Proactive inspection and maintenance possible with data summaries
- Potential for fewer cars identified for maintenance
Composite Alarms Can Reduce the “Cars of Interest”

5% of Cars

5% of Cars

5% of Cars

Potential to be as low as 1 in 10,000 Cars *

The Sweet Spot

* Condition Interdependencies will result in additional cars identified, but never more than the highest condition percentage
Data Summary Benefits

- Accelerated deployment of detector technology
- Supports the AAR Rule making process
- Accelerated realization of ATSI vision
Current Approved Data Summaries

- Wheel Impact
- Truck Performance
- Acoustic bearing signatures
ATSI/EHMS 5 Year Technology Roadmap

- Strategy to consider technology for ATSI Alerts when:
  - Data available in InteRRIS
  - Sufficient research has proven technology as capable
- ATSI Roadmap based on information from Research, Rules and Technical committees

- Current Roadmap
  - Balance of 2008
    - Bearing Temperature Trending
    - Imbalanced Loading of Cars
    - Wheel Set Alignment
  - 2009 – Wheel Profile, Brake Performance
  - 2010 – Vision Systems, Cracked Wheel
  - 2011 – Other TDTI Systems, Cracked Axle
  - 2012 – Other New Technology
ATSI Technology Implementation Focus

- Alternative methods to measure component/system conditions
- New ways to dimension components/systems using advanced technology
- Composite alarms
How Can I Find Out More?

- ATSI Town Hall
- October 23rd
- Chicago, IL
- Watch AAR Circulars for more information
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