Program Overview

AHSI Deliverables
Communication Activities
Next Steps
Asset Health Strategic Initiative (AHSI) Description

- Multi-year strategy for improvement of asset health driven by yearly industry targets and measures for improvement,
- Solves problems with rolling stock that need a network view of asset information and industry coordination,
- Applies information technology solutions and processes
Premise: Centrally Available Asset Information and Systems Enable Efficiencies

Current State

Railroad 1
- Line of road failures
- Consists
- Wayside detector information

Railroad 2
- Comprehensive repair information
- Consists
- Service interruptions

Railroad 3
- Onboard detector information
- Consists
- Service interruptions

Future State

Industry Rolling Asset Data Warehouse

- Train consists
- Asset history
- Airbrake test requirements
- Imbalance overload alerts
- Repair info
- Line of road failures
- Onboard and trackside detectors
Asset Health Strategic Initiative Contributors

- RPSWC
- Asset Health Task Force (AHTF)
  - All 7 Class 1 Railroads
  - 3 Private Car Owners
  - Amtrak
  - AAR, TTCI & Railinc
- Mechanical Committees – TSWC, RTWC, ASEC & EHMC
- IASC (architects)
- And more…
The governance model includes program and project elements and coordination with many constituents.

**Program**
- Targets/Metrics/Data
- Roadmap & Priorities
- Architecture

**Projects**
- AIR / E-Train TAG
  - Asset Information Repository
  - E-Train
  - Mechanical Reference Repository

**TAGs**
- Inspection Quality TAG
  - Inspection Quality (Detector Registry/Detector Repository)
  - Data Summary Expansion

**Scenarios**
- Scenario: Bad Actor Identification
- Scenario: Detector Based Brake Effectiveness

**Roles**
- SOMC - Program Sponsor
- RPSWC - Program Management
- AHTF - Strategy/Project Leadership
- TSWC - Technical Direction
- RTWC - Research Direction
- IASC - IT Architecture Direction

© 2013 RAILINC. ALL RIGHTS RESERVED.
Program Overview

AHSI Deliverables

Communication Activities

Next Steps
Asset Health Task Force
2012 AHSI Deliverables

1. Define **specific targets and metrics** associated with program success and identify data requirements in 2012 and beyond

2. Define **specific multi-year projects**

3. Develop a **process for communication and collaboration** across the various stakeholder groups

4. Establish program **governance** policy and approach
1. Establish a baseline for prioritized metrics in each of the three AHSI target categories.

2. Execute on year one of the multi-year AHSI projects to establish the foundation for the program.

3. Further refine the AHSI roadmap to confirm or revise priorities for future year activities.
AHSI Program is aligned with industry objectives

**Industry Targets**
- Improve Safety
- Lower Train & Yard Operations Costs
- Lower Repair & Maintenance Costs
- Optimize Capital Expenditures

**AHSI Targets**
- Reduce Mechanical Service Interruptions
- Improve Inspection Quality
- Increase Yard & Shop Efficiency

These targets are already a focus at individual railroads.

*The AHSI will mature these beyond local benefits.*

These areas cost the industry nearly $640 million annually.
Metrics will be used to measure the impact of the program on the targets

Reduce Mechanical Service Interruptions
- Line of Road Failures (Mechanical)

Improve Inspection Quality
- Class 1A Brake Test Exemptions

Increase Yard and Shop Efficiency
- Quality - 30, 45, 90 Day Return to Shop

Data Contribution:
Program level metric and leading indicator of success for each Target.

NOTE: Specific metrics have been prioritized by the Asset Health Task Force and will be further defined as the program advances.
Summary status of baseline for prioritized metrics...

✓ AHSI is a metrics driven program.
✓ All Class 1 railroads are providing data for these metrics.
✓ The Asset Health Task Force may
  ✓ Identify additional data for collection
  ✓ Request support from other stakeholders.
Initial Foundation: Task Force Identified Initiatives

- **Asset Information Repository**
  - Comprehensive repository for railcar and locomotive health, characteristics, and related information
  - Includes real time and historical data

- **E-Train**
  - Industry-level consist status and data feed
  - Consolidated source of train information enabling real time visibility and analysis

- **Inspection Quality (Detector Platform)**
  - Uses wayside and onboard detectors, repair history, and equipment configuration to improve the quality of inspections
  - Includes detector registry & related detection systems

Initiatives under the program are submitted and vetted yearly under the leadership of the RPSWC
The AHSI Platform – 2014

Detector Repository

Detector #1 (WTD)

Detector #2

LOR

RR Consist

E-Train

Consist

Bad Actor

Inspection Quality

Asset Information Repository

Mech. Ref.

CRB

Detector Registry

Unifer

EHMS

DDCT

EW

Repairs

Location

Status

Inspect

Flags

© 2013 RAILINC. ALL RIGHTS RESERVED.
2013 project work focused on two specific scenarios

Industry Targets
- Improve Safety
- Lower Train & Yard Operations Costs
- Lower Repair & Maintenance Costs
- Optimize Capital Expenditures

AHSI Targets
- Reduce Mechanical Service Interruptions
- Improve Inspection Quality
- Increase Yard & Shop Efficiency

AHSI Initiatives
- Asset Information Repository
- E-Train
- Inspection Quality

AHSI Scenarios
- Detector-based Brake Effectiveness
- Bad Actor Identification
- Future Scenarios...
- 2014 Bad Order Integration

© 2013 RAILINC. ALL RIGHTS RESERVED.
Scenario: Detector Based Brake Effectiveness

Related AHSI Initiatives:
- Asset Information Repository
- E-Train
- Inspection Quality
**Scenario: Bad Actor Identification**

1. Trains experience multiple undesired emergency stops (UDEs) over time on different railroads.

2. Individual railroads (e.g., RR2 in the figure below) accumulate information over time to identify a specific car as a common cause.

3. Line of road failure data and consist details shared with Railinc. Railinc identifies the common cause earlier avoiding an estimated 5,500 UDEs annually.

**Line of Road Failure Data**
- Train ID
- Event Date/Time
- Event Duration
- Root Cause

**Consist Detail**
- Train ID
- Equipment IDs

**Related AHSI Initiatives**
- Asset Information Repository
- E-Train
- Inspection Quality
Summary status of the 2013 AHSI projects…

✓ AHSI project teams have prioritized the work and are executing according to plan.

✓ Industry architects are engaged and contributing to the foundational design activities.

✓ Laying the foundation for increased data quality.
2014 AHSI Related Projects Approved by the RPSWC

- Asset Information Repository - Phase 2
- E-Train - Phase 2
- Inspection Quality - Phase 2
- Asset Health and Mechanical Referential Data - (Mech. Ref. Repository Phase 2)
- Expand DDCT Rule Compliance
- AEI Data Quality
- Component Tracking - Brake Valves
- Location Master
Progress on the AHSI Multi-year Roadmap is underway.
Summary status of roadmap prioritization…

✓ Proposed 2014 projects in final stages of approval by the RPSWC.
✓ The Asset Health Task Force is evaluating AHSI roadmap to identify priority opportunities for 2015 and beyond.
COMMUNICATION ACTIVITIES

Asset Health Strategic Initiative

COMMUNICATION ACTIVITIES
Summary status of communication process...

✓ Communications underway
✓ Asset Health Task Force
✓ Face to Face meetings
✓ Monthly Conference Calls
✓ Committees and TAGs
✓ SOMC, RPSWC, TSWC
  ✓ CRB, ARB, DDCT, AEI, …
✓ NARMO
✓ FRA
Program Overview
AHSI Deliverables
Communication Activities

Next Steps

Asset Health Strategic Initiative

NEXT STEPS
Next Steps for AHSI

✓ Progress 2013 Deliverables
  ✓ Metrics
  ✓ Phase 1 projects
  ✓ Refine roadmap
✓ Move into phase 2 of multi-year projects
✓ Further communication and coordination with AAR committees and the industry
✓ Coming soon…railinc.com
# Asset Health Task Force Members

<table>
<thead>
<tr>
<th>Member</th>
<th>Representing</th>
<th>Member</th>
<th>Representing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul Steets</td>
<td>AMTK</td>
<td>Ben Mitchell</td>
<td>KCS</td>
</tr>
<tr>
<td>Joanne Hart</td>
<td>BNSF</td>
<td>Calvin Cox</td>
<td>NS</td>
</tr>
<tr>
<td>Joe Kerber</td>
<td>BNSF</td>
<td>Jamie Williams</td>
<td>NS</td>
</tr>
<tr>
<td>Bill Blevins</td>
<td>CN</td>
<td>Mike Kelly</td>
<td>NS</td>
</tr>
<tr>
<td>Darrell Iler</td>
<td>CN</td>
<td>Gary Baker</td>
<td>NS</td>
</tr>
<tr>
<td>Rob Cardwell</td>
<td>CP</td>
<td>Rex Beck</td>
<td>NS</td>
</tr>
<tr>
<td>John Kushnir</td>
<td>CP</td>
<td>Todd Snyder</td>
<td>NS</td>
</tr>
<tr>
<td>Kim Bowling</td>
<td>CSX</td>
<td>Nichole Fimple</td>
<td>NS</td>
</tr>
<tr>
<td>Steve Phebus</td>
<td>CSX</td>
<td>Jim Grady</td>
<td>NS</td>
</tr>
<tr>
<td>Randy Voith</td>
<td>CSX</td>
<td>Treadwell Davison</td>
<td>NS</td>
</tr>
<tr>
<td>Rick Grossman</td>
<td>FURX</td>
<td>Steve Josey</td>
<td>NS</td>
</tr>
<tr>
<td>Jerry Bohacik</td>
<td>GATX</td>
<td>Ron Tsolis</td>
<td>NS</td>
</tr>
<tr>
<td>Tom Mordock</td>
<td>GATX</td>
<td>Jerry Vaughn</td>
<td>NS</td>
</tr>
<tr>
<td>Rudy Bernard</td>
<td>KCS</td>
<td>Kari Gonzales</td>
<td>NS</td>
</tr>
<tr>
<td>Gary Hassenstab</td>
<td>KCS</td>
<td></td>
<td>NS</td>
</tr>
</tbody>
</table>