

Equipment Health Management System (EHMS) User Guide



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Learning about EHMS

Overview

Railinc's Equipment Health Management System (EHMS) is a web-based application that communicates the condition of railroad equipment and alerts the responsible parties when repairs are needed. EHMS contains information pertinent to rules 3, 36, 37, 41, 43, 44, 63, and 94 of the *AAR Interchange Rules*.

EHMS compiles data collected by wayside detectors throughout North America and identifies mechanical problems as they develop, allowing ample time to fix equipment before serious damage or accidents occur. By enabling proactive equipment maintenance, EHMS reduces costly repairs, improves asset utilization, reduces infrastructure stress, and improves rail safety. EHMS also enables car owners, railroads, and equipment maintenance providers to report equipment repairs and view repair history data.

As a customer, you can use the EHMS web application, you can subscribe to real-time system-to-system messaging that notifies Umler® interested parties and designated maintenance providers when detectors indicate that equipment is in need of repair, or you can utilize EHMS data in your own custom systems through EHMS Web Services. This document describes how to use the EHMS web application. For information about subscribing to messaging or EHMS Web Services, contact the Railinc Customer Success Center (see [Accessing the Railinc Customer Success Center](#)).

The [EHMS product page](#) located on Railinc's corporate site provides helpful information, including Data Summary Definitions and prior webinar presentations.

The EHMS User Group Site contains a variety of relevant documents, including documentation for Web Services, Notification Subscriptions, and Data Summary Definitions. Contact the Railinc Customer Success Center (see [Accessing the Railinc Customer Success Center](#) to request access to this site.

To administer EHMS access rights and configure application properties, refer to the [Railinc Single Sign-On User Guide](#).

How Does EHMS Work

Early detection of potential problems enables proactive remediation to potentially save time, money, and more serious equipment damage. To enable this process, several types of wayside detectors capture railroad equipment condition data. Equipment condition data is evaluated, and if it indicates the equipment has deteriorated beyond certain industry-defined thresholds, an alert is opened. With EHMS, users always have access to accurate and up-to-date information on rail equipment alerts. EHMS also includes data summaries, which provide details about equipment condition, whether or not it has reached the level of an alert. Alerts may be actionable by repair shops depending on their severity; data summaries are informational only.

[Exhibit 1](#) identifies the types of detectors that supply data to EHMS, their alert and data summary types, and their possible closure methods.

Exhibit 1. Detector Types, Alerts, and Data Summaries

Detector Type/ Data Summary Name	Alert Type	Alert Closure Method	Data Summary Type	Data Summary Closure Method
Acoustic Bearing Detector (ABD)	ABD	<ul style="list-style-type: none"> • Inspection • Repair • Autoclose if the corresponding data summary is closed 	ACOUSTIC_COMBINED	Autoclose
Automatic Equipment Identification Detector (AEI)	AEITAG AEIMISMATCH AEIUMLER	<ul style="list-style-type: none"> • Inspection • Repair (AEITAG/ AEIMISMATCH) • Autoclose if the corresponding data summary is closed 	AEI_TAG	Autoclose
Brake Health (Wheel Temperature Detector – WTD (Car Level))	None	<ul style="list-style-type: none"> • None 	BRAKEHEALTH_CAR	None (currently)
Brake Health (Wheel Temperature Detector – WTD (Truck Level))	None	<ul style="list-style-type: none"> • None 	BRAKEHEALTH_TRK	None (currently)
Line-of-Road Failure_Air Hose Separation*	LORFAHS	<ul style="list-style-type: none"> • Inspection • Repair • Autoclose if the autoclose criteria has been met 	LORF_AHS	<i>Never Closes**</i>
Line-of-Road Failure_No Cause Found*	LORFNCF	<ul style="list-style-type: none"> • Inspection • Autoclose if the corresponding data summary Total Group Count < 3 	LORF_NCF	<i>Never Closes**</i>
Line-of-Road Failure_Brake System/BrakeOther*	None	<ul style="list-style-type: none"> • None 	LORF_BSO	<i>Never Closes**</i>
Line-of-Road Failure_Train Separation*	None	<ul style="list-style-type: none"> • None 	LORF_TS	<i>Never Closes**</i>
Machine Vision E Type Coupler Securement	MVECOUPLER	<ul style="list-style-type: none"> • Inspection 	None	None
Machine Vision F Type Coupler Securement	MVFCOUPLER	<ul style="list-style-type: none"> • Inspection 	None	None

Detector Type/ Data Summary Name	Alert Type	Alert Closure Method	Data Summary Type	Data Summary Closure Method
Truck Geometry Detectors (TRUCK_GMTRY)	None	<ul style="list-style-type: none"> None 	TRUCK_GMTRY	Autoclose
Truck Hunting Detectors (THD)	THD	<ul style="list-style-type: none"> Inspection Autoclose if the corresponding data summary is closed 	TRUCK_HTG	Autoclose
Truck Performance Detectors (TPDG & TPDL)	TPDG & TPDL	<ul style="list-style-type: none"> Inspection 	None	None
Wheel Impact Load Detectors (WILD)	WILD	<ul style="list-style-type: none"> Inspection Repair Autoclose if the corresponding data summary is closed 	SALIENT_WHEEL_IMPACT	<ul style="list-style-type: none"> Autoclose Inspection Repair
Wheel Impact Load Detector with Wheel Profile Detector	WILD_WPD	<ul style="list-style-type: none"> Repair Autoclose if the autoclose criteria has been met 	N/A	N/A
Wheel Profile Detector	WPDWHEEL WPDAXLE	<ul style="list-style-type: none"> Inspection Repair Closure*** Autoclose if the corresponding data summary is closed 	WHEELPROFILE	None (currently)

*Line-of-Road Failures are event-based and are not detector-based.

**Line-of-Road Failure data summaries have inspections; however, they are never closed. Refer to the [Line-of-Road Failure data summary definition documents](#) on Railinc.com for more information.

***Wheel Profile Detector alerts can be closed if a new component is associated, a corresponding WILD alert is closed via Repair or Inspection, or if CRB receives information about a newly installed wheelset.

Data from these detectors is sent to Railinc’s Inspection Quality (IQ) system, which captures equipment condition readings and event information. Once readings exceed certain industry-defined thresholds, IQ opens alerts and sends the information to EHMS. EHMS displays the applicable alert for the unit and distributes information about equipment to rail carriers, car owners, and other interested parties. All of these automatic alerts enhance car inspections by providing insight into problems that might otherwise go undetected.

Alerts are retained until a closure event resolves the alert. EHMS captures information about repairs and completed inspections, and enables alert closure (manually or automatically) per the *Field Manual of the AAR Interchange Rules* (purchase from the AAR Publications page). In addition to viewing alerts, EHMS users can use data summaries to drill-down to view specific asset health data.

More about Defects and Alerts

The types of component defects and their corresponding detectors are described below:

Wheel Defects

There are a few wayside detectors that detect wheel defects. Problems associated with wheel shape are identified by Wheel Impact Load Detectors (WILD) wayside detectors. Salient Wheel Impact is one type of WILD detector. Problems with wheel measurements such as rim thickness, flange height, flange thickness, hollow tread (WPDWHEEL) and back-to-back (WPDAXLE) are identified by Wheel Profile detectors.

Truck Defects

Truck defects are identified by Truck Hunting Detectors (THD), Truck Performance Detectors (TPDL & TPDG), and Truck Geometry Detectors (TGD). These are wayside detectors that look for movement and force discrepancies of the trucks on the rail surface. TPDL is the lateral or vertical force measurement. TPDG refers to truck performance gauge (i.e., the measurement of the horizontal force of the truck against the inside rails, pushing them outward). TGD detectors measure the alignment of the truck against the rail (i.e., tracking errors, truck rotation, interaxle misalignment, and shift).

Bearing Defects

Bearing defects are identified by Acoustic Bearing Detectors (ABD), which identify bearing issues through wayside acoustic devices. RailBAM and TADS are two types of acoustic bearing detectors.

AEI Tag Defects

AEI Tag defects are identified when AEI reads transmitted to Railinc from the railroads indicate a missing tag (AEITAG) on the left or right side. These reads could also indicate incorrectly programmed tags where the equipment initial and number programmed on the right tag does not match the equipment initial and number programmed in the left tag (AEIMISMATCH). These reads are also compared with the Umler® equipment registry where inconsistencies between the AEI train pass and Umler® create an alert (AEIUMLER).

Coupler Securement Defects

Machine Vision systems detect possible defects in the coupler securement on a car. These potential defects are manually reviewed. When a defect is verified, a coupler securement alert (MVECOUPLER & MVFCOUPLER) is created in the Equipment Health Management System (EHMS).

Equipment Defects

Equipment defects can be identified by operator inspections performed because of the occurrence of a Line-of-Road Failure.

Learning about EHMS

Each detector type has defined alert levels, based on industry-defined thresholds. The alert level indicates the severity of the mechanical problem and the urgency with which repairs should be made.

[Exhibit 2](#) identifies the four currently configured alert levels within EHMS. Additional levels can be added as the ATSI determines necessary.

Exhibit 2. Industry Alert Levels

Industry Alert Level	Description
ATSI Window Open EHMS Code W Level 1	This lowest-level alert advises that some degradation has started. An alert at this level is primarily a notice to the car owner/operator that a potential problem exists on the car and to allow the car owner to get the car into the shop of their choice.
AAR A2 EHMS Code O Level 2	This mid-level alert offers the equipment owner a chance to schedule repairs before damage starts. Units with an AAR A2 level fall under AAR rules and may be repaired if they are in the shop for any other reason.
AAR A1 EHMS Code C Level 3	This high-level alert notifies shops that wheels need to be replaced. Units with alerts at this level may be pulled into the shop specifically for this repair.
ATSI Mandatory EHMS Code M Level 4	This severe-level alert advises railroads/car owners that high stresses are being placed on rails requiring immediate action. A unit with a Mandatory Alert should be immediately reviewed by a shop and repaired.

[Exhibit 3](#) identifies industry alert levels applicable to each detector and line-of-road failure type.

Exhibit 3. Detector and Line-of-Road Failure Types and their Industry Alert Levels

Detector / Line-of-Road Failure Type	Industry Alert Levels
Acoustic Bearing Detector (ABD)	<ul style="list-style-type: none"> AAR A1
Automatic Equipment Identification Detector (AEITAG, AEIMISMATCH, AEIUMLER)	<ul style="list-style-type: none"> ATSI Window Open (AEIUMLER) AAR A2
Brake Health (Wheel Temperature Detectors – WTD (Car Level))	<ul style="list-style-type: none"> None - Data Summary only
Brake Health (Wheel Temperature Detectors – WTD (Truck Level))	<ul style="list-style-type: none"> None - Data Summary only
Line-of-Road Failure – Air Hose Separation (LORFAHS)	<ul style="list-style-type: none"> ATSI Window Open AAR A1
Line-of-Road Failure – Brake System/BrakeOther (LORF_BSO)	<ul style="list-style-type: none"> None - Data Summary only
Line-of-Road Failure – No Cause Found (LORFNCF)	<ul style="list-style-type: none"> AAR A1
Line-of-Road Failure – Train Separation (LORF_TS)	<ul style="list-style-type: none"> None - Data Summary only
Machine Vision (MVECOUPLER, MVFCOUPLER)	<ul style="list-style-type: none"> ATSI Window Open

Learning about EHMS

Detector / Line-of-Road Failure Type	Industry Alert Levels
Truck Geometry Detectors (TRUCK_GMTRY)	<ul style="list-style-type: none"> None - Data Summary only
Truck Hunting Detectors (THD)	<ul style="list-style-type: none"> ATSI Window Open AAR A1
Truck Performance Detectors (TPDG & TPD)	<ul style="list-style-type: none"> AAR A1
Wheel Impact Load Detectors (WILD)	<ul style="list-style-type: none"> ATSI Window Open AAR A2 AAR A1 ATSI Mandatory
Wheel Impact Load Detector and Wheel Profile Detector (WILD_WPD)	<ul style="list-style-type: none"> ATSI Window Open
Wheel Profile Detector (WPDWHEEL, WPDAXLE)	<ul style="list-style-type: none"> ATSI Window Open

[Exhibit 4](#) identifies detailed information about alert levels and their criteria.

Exhibit 4. Alert Levels and Criteria

ABD Alert	
ATSI Window Open:	N/A
AAR A2:	N/A
AAR A1:	Growler1
ATSI Mandatory:	N/A
AEIMISMATCH Alert	
ATSI Window Open:	N/A
AAR A2:	2 sequential readings where one of the two tags placed on the equipment is incorrect
AAR A1:	N/A
ATSI Mandatory:	N/A
AEITAG Alert	
ATSI Window Open:	N/A
AAR A2:	4 readings missing left or right tag
AAR A1:	N/A
ATSI Mandatory:	N/A

AEIUMLER Alert	
ATSI Window Open:	AXLE_COUNT:4 readings where the number of axles in Umler does not equal the number of axles in a train pass. Or NOT_IN_UMLER: When one read is recorded where the equipment initial and number of the AEI Tag is not recorded in Umler.
AAR A2:	N/A
AAR A1:	N/A
ATSI Mandatory:	N/A
LORFAHS Alert	
ATSI Window Open:	12-month Raw Count =1; Or 12-month Raw Count =2 and 12-month distinct pair count =0 or 1
AAR A2:	N/A
AAR A1:	12-month Raw Count >=3; Or 12-month Raw Count =2 and 12-month distinct pair count =2
ATSI Mandatory:	N/A
LORFNCF Alert	
ATSI Window Open:	N/A
AAR A2:	N/A
AAR A1:	Total Group Count ≥3
ATSI Mandatory:	N/A
MVECOUPLER Alert	
ATSI Window Open:	BRK_COTTER_KEY: A clearly broken cotter Or MIS_COTTER_KEY: A clearly missing cotter key Or MIS_RETAINER: A clearly missing retainer Or MIS_RET_LOCK: A clearly missing retainer lock
AAR A2:	N/A
AAR A1:	N/A
ATSI Mandatory:	N/A

MVFCOUPLER Alert	
ATSI Window Open:	SING_MIS_FA: 1 clearly missing fastener Or DOUB_MS_FAS_TWO_SIDE: 2 clearly missing fasteners, 1 each on the left and right Or DOUB_MS_FAS_SAME: 2 clearly missing fasteners on the same side Or GT_TWO_MIS_FAS4: > 2 clearly missing fasteners on a 4-fastener carrier plate Or GT_TWO_MIS_FAS6: > 2 clearly missing fasteners on a 6-fastener carrier plate Or ROTATED_PLATE: Carrier plate with multiple missing fasteners and rotated out of position
AAR A2:	N/A
AAR A1:	N/A
ATSI Mandatory:	N/A
THD (Absolute Value) Alert	
ATSI Window Open:	≥0.20
AAR A2:	N/A
AAR A1:	1 reading at ≥.5 or 2 readings ≥.35 (in twelve months)
ATSI Mandatory:	N/A
TPDG Alert	
ATSI Window Open:	N/A
AAR A2:	N/A
AAR A1:	Refer to Rule 46 A.1.F in the <i>Field Manual of the AAR Interchange Rules</i>
ATSI Mandatory:	N/A
TPDL Alert	
ATSI Window Open:	N/A
AAR A2:	N/A
AAR A1:	Refer to Rule 46 A.1.F in the <i>Field Manual of the AAR Interchange Rules</i>
ATSI Mandatory:	N/A
WILD Alert	
ATSI Window Open:	>65kips and <80kips
AAR A2:	>80kips and <90kips
AAR A1:	>90kips and <140kips
ATSI Mandatory:	>140kips

WILD_WPD Alert	
ATSI Window Open:	WPD rim thickness reading $\leq 16/16$ inch and a WILD MAX_DYANAMIC ≥ 50 kips
AAR A2:	N/A
AAR A1:	N/A
ATSI Mandatory:	N/A
WPDAXLE Alert	
ATSI Window Open:	BACK_TO_BACK_GT measurement on a railcar of > 53.188 inches. BACK_TO_BACK_GT measurement on a locomotive of > 53.5 inches. Or BACK_TO_BACK_LT measurement on a railcar of < 52.938 inches. BACK_TO_BACK_LT measurement on a locomotive of < 53.0 inches.
AAR A2:	N/A
AAR A1:	N/A
ATSI Mandatory:	N/A
WPDWHEEL Alert	
ATSI Window Open:	FLANGE_HEIGHT measurement on a railcar of ≥ 1.5 in. FLANGE_HEIGHT measurement on a locomotive of ≥ 1.5 inches Or FLANGE_THICKNESS measurement on a railcar of ≤ 0.938 inches. FLANGE_THICKNESS measure on a locomotive of ≤ 0.875 inches. Or RIM_THICKNESS measurement on a railcar of a 30 in. or 33 in. wheel of ≤ 0.75 in. and on a 28 in., 36 in. and 38 in. wheel a measurement of ≤ 0.875 in. RIM_THICKNESS measurement on a locomotive of ≤ 1.0 inches. Or HOLLOW_THREAD_A_1 measurement on a railcar of ≥ 5 mm. HOLLOW_THREAD_A_1 measurement on a locomotive of > 0.313 mm.
AAR A2:	N/A
AAR A1:	N/A
ATSI Mandatory:	N/A

See [Alerts and Data Summaries](#) and [Learning about Inspection Reason Codes](#) for more information.

Notes:

- Brake Health data summaries identify car braking effectiveness at both the car and truck level using performance-based data from Wheel Temperature Detector (WTD) systems. Temperature readings from WTD are analyzed and evaluated to determine if a data summary should be opened. Currently, Brake Health data summaries do not close with a repair, inspection, or autoclose process.
- The Line-of-Road Failure – No Cause Found data summaries provide information on equipment involved in trains that experience a line-of-road emergency brake application where no cause was identified.

- The Line-of-Road Failure – Air Hose Separation data summaries provide information on equipment involved in trains that experience a line-of-road emergency brake application where the cause was identified as air hose separation.
- The Line-of-Road Failure – Brake System/BrakeOther data summaries provide information on equipment involved in emergency brake applications triggered by an identified defect including emergency or service valve failures, not otherwise categorized, such as a train line or other system leak.
- The Line-of-Road Failure – Train Separation data summaries provide information on equipment involved in train separations where knuckles and drawbars are found to be intact – not to be confused with an air hose separation, broken knuckle, or drawbar.
- Automatic Equipment Identification (AEI) data summaries help identify bad tags at the equipment level and AEI reader errors using performance-based data from AEI systems. These data summaries help identify data discrepancies, such as “Equipment does not exist in Umler”, “Equipment type does not match with Umler”, “Axle counts do not match with Umler”, etc.
- Wheel Profile Detector (WPD) data summaries provide an aggregate view of the measurements from Wheel Profile Detectors. The data summary can be used to perform wheel trend analysis and determine wheel wear and condition. When worn beyond limits, the wheels can be scheduled for replacement.

What Other Tools Are Available?

The following tools are also available:

- EHMS Web Services
- EHMS Notifications
- Equipment Health View (a separate Railinc application)

EHMS Web Services

In addition to the web application and notifications, users may utilize web services to query EHMS data or to report repairs or inspections. EHMS web services utilize a standard format with requirements for querying or reporting to EHMS. This option is utilized by companies that want to implement a system to system communication of alerts, events, and closures including the reporting of equipment repairs and inspections. This fee-based option is available to users who want to have a system-to-system integration for EHMS data support. For more information about EHMS Web Services, contact the Railinc Customer Success Center (see [Accessing the Railinc Customer Success Center](#)).

EHMS Notifications

EHMS notifications are a system-to-system integration option that enables users to maintain alert and event data. EHMS notifications are subscription-based, and they enable subscribers to receive up-to-date information on alerts, events, and closures in the standard format. EHMS transmits subscription data in a standard format via File Transfer Protocol (FTP) or Message Queue (MQ). For more information about EHMS Notifications, see [Working with Notification Subscriptions](#) and contact the Railinc Customer Success Center (see [Accessing the Railinc Customer Success Center](#)).

Equipment Health View

Equipment Health View (EHV) is a dashboard-style application, accessible from the Railinc Launch Pad, that provides users a consolidated view of equipment health information from the EHMS, Umler[®], Damaged and Defective Car Tracking (DDCT), and Early Warning systems, as well as mileage data from the Event Repository.

Users can view equipment-level information such as open Early Warning and Maintenance Advisory notices, EHMS alert levels, open data summaries, open DDCT incidents, and Umler component registry and inspection data. If a user wants to act on information that they see on the dashboard, EHV enables users to report repairs and/or inspections to these systems. Convenient links enable users to access the application they need. EHV also includes fleet-level statistics for equipment associated with the Car Mark Owner's Company ID.

Note: For information about accessing and using EHV, refer to the [Equipment Health View User Guide](#).

System Requirements

For information about the system requirements of Railinc web applications and for information about downloading compatible web browsers and file viewers, refer to the [Railinc UI Dictionary](#).

Accessing the Railinc Customer Success Center

The Railinc Customer Success Center provides reliable, timely, and high-level support for Railinc customers. Representatives are available to answer calls and respond to emails from 7:00 a.m. to 7:00 p.m. Eastern time, Monday through Friday, and provide on-call support via pager for all other hours to ensure support 24 hours a day, 7 days a week. Contact us toll-free by phone at 877- RAILINC (1-877-724-5462) or send an email directly to csc@railinc.com.

Getting Started

Access the EHMS application by using Railinc Single Sign-On (SSO), a web application that provides convenient access to a variety of Railinc products. If you have an SSO login, go to the Railinc portal at <https://public.railinc.com/> and log into SSO by selecting the **Customer Login** link in the top right corner. Enter your user ID and password in the fields and select **Sign In**.

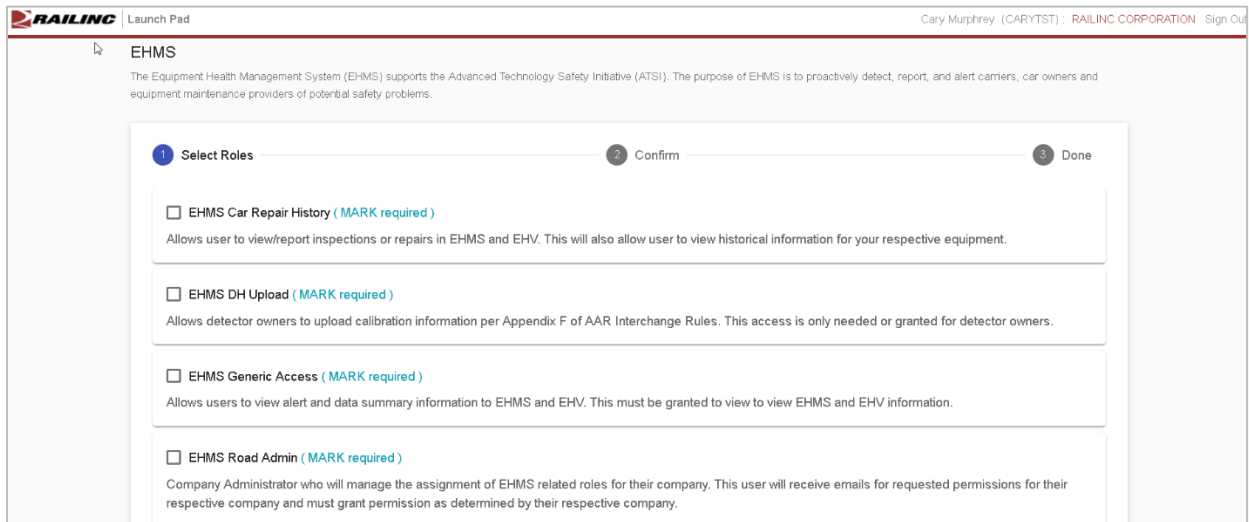
Notes:

1. If you do not already have a Railinc SSO user ID and password, refer to the [Railinc Single Sign-On User Guide](#). Once you have access to Railinc SSO, you must request access to EHMS within SSO.
2. If you are not already registered in the FindUs.Rail contact database, go to <https://public.railinc.com/> to request permission after establishing your SSO account. **Industry rules require that all EHMS system users register in FindUs.Rail** before being granted access to the system. Railinc uses this contact information to communicate about EHMS training opportunities and system implementation. Refer to the [FindUs.Rail User Guide](#) for complete instructions on using the FindUs.Rail system.
3. If you do not have access to EHMS, request access to EHMS by following instructions in the [Railinc Single Sign-On User Guide](#). See [Learning about User Roles](#) for information about the available levels of access. When you have received e-mail notification confirming your access, you can log on and begin using EHMS.

Learning about User Roles

Your assigned user role determines what functions you can perform. User roles are assigned by Railinc or by your company administrator through the Single Sign-On interface ([Exhibit 5](#)).

Exhibit 5. SSO Request Permission



The following user roles can be assigned to users of the EHMS system:

- **EHMS Car Repair History** – Provides view access to historical information on alerts and closures for the user’s company, including event and read information. You must have Generic Access to view open alerts.
- **EHMS DH Upload** – Allows detector owners to upload calibration information for their road as noted in the AAR Interchange Rules. *Your company must own detectors to have this permission.*
- **EHMS Generic Access** – Allows access to EHMS open alert information. This permission, along with EHMS Car Repair History, provides access to open alerts and historical information, including data summaries.
- **EHMS Road Admin** – This role is for the company administrator(s) to manage EHMS permissions for the user’s company. This role is assigned by Railinc to the first contact requesting access for a specific Company ID/Mark(s). When this permission is granted, the company administrator is responsible for granting access to their user ID as well as other user ID’s that request permission for their Company ID/Mark.

Logging In

To log into EHMS:

1. Open your internet browser and enter <https://public.railinc.com> to open the Railinc website.
2. Select the **Customer Login** link in the upper right of the page. The Account Access page is displayed.
3. Enter your **User ID** and **Password**. Select **Sign In**. The Railinc Launch Pad is displayed.
4. In My Applications, select **EHMS**. One of the following pages is displayed:
 - If you manage only one company, the EHMS Home page is displayed immediately. Continue with [Viewing the EHMS Home Page](#).
 - If you manage more than one company, the Select Your Company page is displayed. Continue with [Managing Multiple Companies](#).

Managing Multiple Companies

Some EHMS users, especially those who work for larger agencies, manage more than one company.

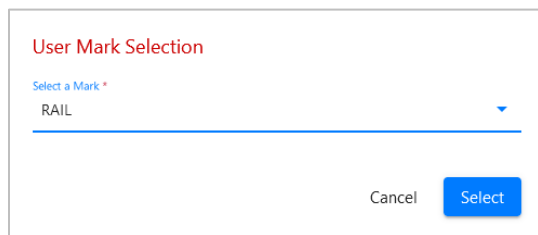
Note: If you only manage one company, your company is automatically selected – you do not need to select a company to manage – and the EHMS Home page appears when you log in (see [Viewing the EHMS Home Page](#)).

If you manage more than one company, use the following procedure to select the company that you want to manage when you login:

1. Login to EHMS. The User Mark Selection popup is displayed ([Exhibit 6](#)).

Getting Started

Exhibit 6. User Mark Selection



User Mark Selection

Select a Mark *

RAIL

Cancel Select

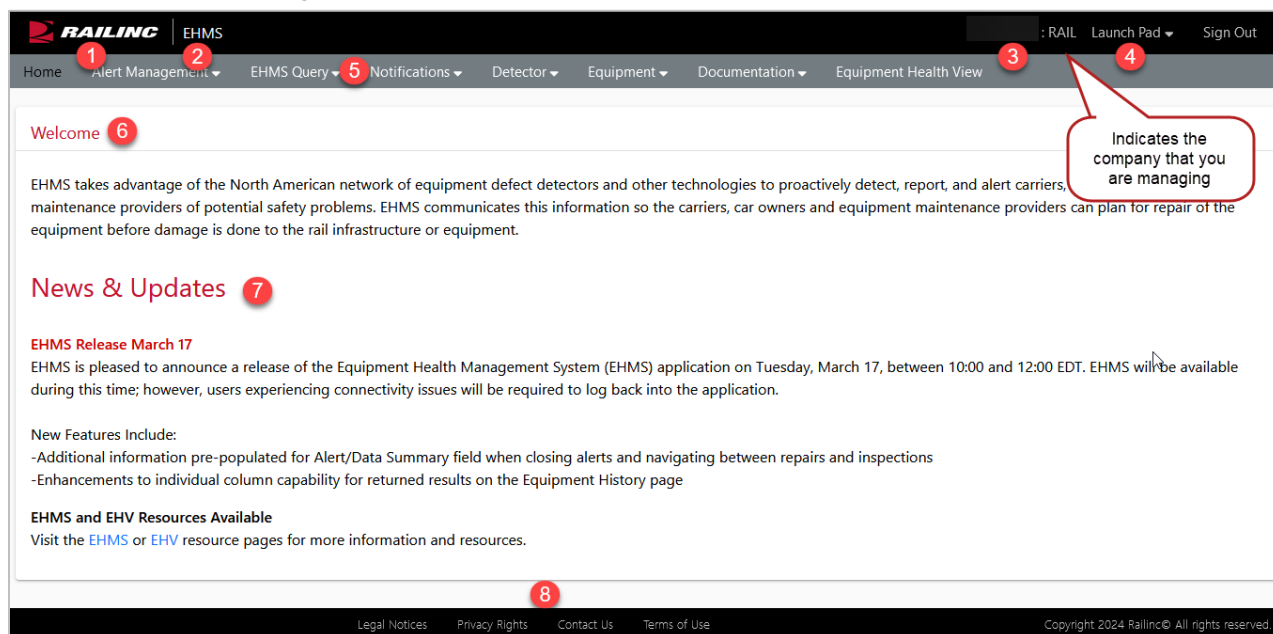
2. From the **User Marks** drop-down, select the company that you want to manage.
3. Select the **Select** button. The Home page for the selected company is displayed allowing you to manage that company.

You can change the company that you are managing at any point while logged in to EHMS. Simply select the company link as indicated in [Exhibit 7](#) and choose another company.

Viewing the EHMS Home Page

The Home page is displayed once you successfully log into EHMS.

Exhibit 7. EHMS Home Page



RAILINC | EHMS

RAIL Launch Pad Sign Out

Home Alert Management EHMS Query Notifications Detector Equipment Documentation Equipment Health View

Welcome

EHMS takes advantage of the North American network of equipment defect detectors and other technologies to proactively detect, report, and alert carriers, maintenance providers of potential safety problems. EHMS communicates this information so the carriers, car owners and equipment maintenance providers can plan for repair of the equipment before damage is done to the rail infrastructure or equipment.

News & Updates

EHMS Release March 17

EHMS is pleased to announce a release of the Equipment Health Management System (EHMS) application on Tuesday, March 17, between 10:00 and 12:00 EDT. EHMS will be available during this time; however, users experiencing connectivity issues will be required to log back into the application.

New Features Include:

- Additional information pre-populated for Alert/Data Summary field when closing alerts and navigating between repairs and inspections
- Enhancements to individual column capability for returned results on the Equipment History page

EHMS and EHV Resources Available

Visit the [EHMS](#) or [EHV](#) resource pages for more information and resources.

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The Home page contains the following elements, which are identified by numbered callouts in [Exhibit 7](#):

- 1 **Logo**—Railinc logo. Select the logo to go to the Railinc corporate website.
- 2 **Application Title**—Name of the application. This is also a link to the application Home page.
- 3 **Sign-On Information**— Show the currently logged on user ID and road-specific information for individuals representing several roads. If you do represent more than one road, you can select the

company name to switch to another company. See [Managing Multiple Companies](#) for more information.

- 4 **Navigational Links**—Links for the following functions:
 - **Launch Pad**—displays a drop-down allowing you to switch to one of your other Railinc applications or to access the Single Sign-On (SSO) User Services options.
 - **Sign Out**—logs out of SSO and returns to the Railinc web page.
- 5 **Application Menu**—The top of the Railinc page displays the application menu options. The options on this menu allow you to perform the various functions of the application.
- 6 **Page Title and Content Area**—The title of the specific application task page. The area of the page where tasks are executed. These vary and may include a number of different elements, which are described in the next sections.
- 7 **News and Updates**—this area displays news about updates to EHMS or planned releases.
- 8 **Legal/Copyright**—this area at the bottom of each page contains links to the legal notices, privacy notice, contact information, terms of use and copyright.

The EHMS Application Menu, shown at the top of each EHMS page, provides access to the following functions:

Menu Item	Function
Home	Navigates to the EHMS Home page.
Alert Management	Opens the Alert Management menu, enabling you to report repairs or inspections that may or may not have an open alert. See Reporting Repairs and Inspections for more information.
EHMS Query	Opens the EHMS Query menu, which enables you to view query options for working with alerts and data summaries. See Performing EHMS Queries for more information.
Notifications	Opens the Notifications menu to view EHMS Notifications configured for your company, if applicable. See Working with Notification Subscriptions for more information. Note: This is a chargeable function.
Detector	Opens the Detector menu so you can view, upload, and delete calibration records. This provides visibility to calibration information for a detector. Note: You must be a detector owner to upload calibration information.
Equipment	Opens the Equipment menu. Options from this menu open a new browser session in the Umler application.
Documentation	Displays a list of documents that provide additional information relevant to the application. For a complete selection of documentation, see Accessing EHMS Support Documentation .

Note: For detailed instructions about using the Railinc interface elements such as menus, calendar tools, and drop-down text boxes, refer to the [Railinc UI Dictionary](#).

Reporting Repairs and Inspections

Important: You must have the “EHMS Car Repair History User” role to see the Alert Management menu item, which is used to perform the tasks described in this section.

EHMS enables you to report car repairs and/or inspections through the Alert Closure Reporting page. To report a car repair or an inspection, you must enter the equipment initial and number, who made the repair, the repair date, the Standard Point Location Code (SPLC), the Job Code, the Why Made Code, the component location of the repair, and, optionally, you may report an Air Brake Test (ABT). You may choose to enter multiple car repairs at a time.

The options available on the Alert Closure Reporting page change depending on which radio button is selected (Repair, Non AAR Repair, or Inspection).

Notes:

- Reporting a repair may not close an alert. For example, Truck Hunting Detector (THD) alerts can be closed by inspection but not by repair. THD alerts can also be autoclosed (automatically closed as a result of several consecutive non-elevated readings) if a Truck Hunting data summary on the same component is autoclosed. See [Exhibit 1](#) for more information.
- Repairs do not close truck alerts. Only an inspection can close a THD, TPDG, or TPDL alert.
- Repairs do not close Line-of-Road Failure_No Cause Found alerts. Only an inspection can close a LORFNCF alert.
- An ME inspection does not close an alert.
- Submitting an ABT requires that the user have proper permissions within the Umler application.
- A Component Tag ID should only be entered once per axle location and Equipment ID.
- Reporting a repair or an inspection does not close associated Truck Hunting, RailBAM, or TADS data summaries. These data summaries can only be closed by the autoclose functionality, which is accomplished automatically as a result of capturing several consecutive non-elevated readings. For information about data summary autoclose reasons, see [Exhibit 54](#) in [Learning about Inspection Reason Codes](#). Salient Wheel Impact data summaries can be closed manually by an inspection or repair.
- Line-of-Road Failure_Air Hose Separation (LORF-AHS) data summaries currently do not close with the autoclose process.
- Brake Health Car Level, Brake Health Truck Level, and Line-of-Road Failure_No Cause Found (LORF-NCF) data summaries currently do not close with a repair, inspection, or autoclose process.

For additional details on reporting repair information, see [Reviewing EHMS Frequently Asked Questions \(FAQs\)](#).

Entering Alert Closures


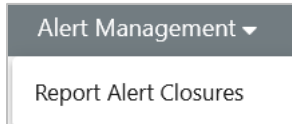
Use the following procedure to report a car repair or inspection. You can complete these tasks from either the Alert Management menu ([Exhibit 8](#)) or by selecting the Close Alert icon  on an Equipment History or Equipment Status search results page.

Exhibit 8. Alert Management Menu



1. From the main menu, select **Alert Management > Report Alert Closures**. The Alert Closure Reporting page is displayed.

Exhibit 9. Alert Closure Reporting

2. Complete the available described input fields.



(Copy Row)

Use the copy row arrow to copy a record to the ones below it if adding multiple similar alert closures. Before you use this, first add a new blank record using the **Add** button.

Equipment Initial

Indicates the reporting mark of the equipment.

Equipment Number

In combination with equipment initial, uniquely identifies equipment.

Closure Made By

Reporting mark or company ID that completed the equipment repair.


Closure Rptd By

Identifies the company ID that reported the repair or inspection.

Note: This field is read-only.

Closure Date

The date on which the repair occurred. Select the calendar icon to input a date using the Calendar Tool (refer to the [Railinc UI Dictionary](#) for detailed instructions).

SPLC	The Standard Point Location Codes where the repair occurred. Select the search icon  to search for SPLC numbers (See Searching for a SPLC for instructions).
Component ID	The AAR Component ID (AAR CID) acts as a standardized serial number for that particular component on that unit.
ABT check box	Select this check box to open up the entry fields for an Air Brake Test inspection (requires appropriate Umler permission).
ABT Performer	Company ID that performed the Air Brake Test on the equipment (defaults to user's mark when ABT is checked (requires appropriate Umler permission)).
ABT Reporter	Company ID that is reporting the Air Brake Test on the equipment (defaults to user's mark when ABT is checked (requires appropriate Umler permission)).

Repair, Non AAR Repair, Inspection

Select the option appropriate to the type of repair or inspection being reported. The remaining input fields change depending on the selected choice:

- For Repairs see [Alert Closures—Repair](#)
- For Non AAR Repairs see [Alert Closures—Non-AAR Repair](#)
- For Inspections see [Alert Closures—Inspection](#)
- For Inspections (Applying a Home Shop Disposition) see [Alert Closures—Inspection \(Applying a Home Shop Disposition\)](#)

Alert Closures—Repair

This section describes the Alert Closures options when **Repair** is selected (default). Once you have reviewed this information, continue with the Alert Closure procedure at step [3](#) on page [21](#).


- **Job Code** – If the proper Job Codes and Why Made Codes are used, the system identifies the repair as a wheel change and uses the record to "clear an alert." Brake shoe repairs, if reported, are stored as a Car Repair History event, but are not used to "clear an alert." EHMS accepts Job Codes related to rules mentioned. See [Learning about Job Codes and Why Made Codes](#) for a complete list of appropriate codes. Select the search icon  to display the Job Code Lookup window ([Exhibit 10](#)).

Exhibit 10. Job Code Lookup

Job Codes Lookup

From _____ To _____ Rule # _____ Total items: 689

Job Code	Description
<input type="radio"/> 1116	ADDITIONAL BRAKE CLEANING - ACCOUNT SUBMERGED
<input type="radio"/> 1128	INSPECTION ASSOCIATED WITH EHMS LORF-AHS ALERT
<input type="radio"/> 1130	ADD'L SERVICE STABILITY TEST - EHMS LORF-NCF ALERT
<input type="radio"/> 1132	ADDITIONAL VENT VALVE TEST - EHMS LORF-NCF ALERT
<input type="radio"/> 1135	CLEARANCE ISSUE PREVENTS 4-PRESSURE RETROFIT
<input type="radio"/> 1139	SCT, MANUAL DEVICE, 1 SET PER EQ INST EI-0001
<input type="radio"/> 1140	SCT, AUTO TEST DEVICE, 1 SET PER EQ INST EI-0001

30 100 500 1000 5000

- **Why Made Code** – Used to identify the reason for the repair ([Exhibit 11](#) shows the Why Made Code Lookup window). See [Learning about Job Codes and Why Made Codes](#) for a complete list of appropriate codes.

Exhibit 11. Why Made Code Lookup

Why Made Code Lookup

From _____ To _____ Rule # _____ Total items: 111

Why Made Code	Description
<input type="radio"/> 01	Worn Out
<input type="radio"/> 02	Broken
<input type="radio"/> 03	Missing
<input type="radio"/> 04	Defective
<input type="radio"/> 05	Bent
<input type="radio"/> 06	Bent beyond repairs
<input type="radio"/> 07	Obsolete material

30 100 500 1000 5000

- **Component Tag ID** – Uniquely identifiable information that includes 14 characters and is comprised of a company ID or Mark and a serial number of up to 10 digits. This component ID is the standard “AAR Component ID” that is physically applied to the component during assembly. See [Exhibit 12](#) for an example of a repair with the Component Tag ID input field.

Note: Some Job Codes require the component id to be populated – See [Learning about Job Codes and Why Made Codes](#) for detailed information.

Exhibit 12. AAR Repair Options - Reporting Component Tag ID

The screenshot shows the 'Alert Closure Reporting' form. At the top, there is a 'Notes' section with the following text:

- Only an inspection can close a LORFNCF, THD, AEIUMLER, MVECOUPLER, MVFCOUPLER, TPDG or TPDJ alert. Repairs do not close these alerts.
- An ME inspection will not close an alert.
- Submitting an ABT requires that the user have proper permissions within the Umler application.
- Component Tag ID should only be entered once per axle location and Equipment ID.

 Below the notes is a table with columns: Equipment Initial, Equipment Number, Closure Made By, Closure Rptd By, Closure Date, SPC, ABT Performer, ABT Reporter, and ABT Device. The first row contains: 1, AARE, 0000012345, RAIL, RAIL, 01/31/2024, 476790000, and Select. Below the table are radio buttons for 'Repair' (selected), 'Non AAR Repair', and 'Inspection'. There are also fields for 'Job Code' (3328), 'Why Made Code' (03), and 'Component Tag Id' (ABCD222). At the bottom right are buttons for 'Clear', 'Reset', 'Delete', 'Add', and 'Save'.

Alert Closures—Non-AAR Repair

This section describes the Alert Closures options when **Non AAR Repair** is selected ([Exhibit 13](#)). Once you have reviewed this information, continue with step 3 on page 21 of the Alert Closure procedure.

Exhibit 13. Non AAR Repair Options With REPLACE_WHEELSET Selected

The screenshot shows the 'Non AAR Repair' options form. It features radio buttons for 'Repair', 'Non AAR Repair' (selected), and 'Inspection'. Below these are fields for 'Non AAR Job Code' (REPLACE_WHEELSET), 'Axle' (with a red asterisk and a red underline), and 'Side'. A red error message 'This field is required.' is displayed below the 'Axle' field.

- **Non AAR Job Code** – Use the drop-down to select REPLACE_WHEELSET. Then specify the Axle and Side under the Location heading.

Alert Closures—Inspection

This section describes the Alert Closures options when **Inspection** is selected ([Exhibit 14](#)). Once you have reviewed this information, continue with the Alert Closure procedure at step 3 on page 21.

Exhibit 14. Inspection Options

The screenshot shows the 'Inspection' options form. It features radio buttons for 'Repair', 'Non AAR Repair', and 'Inspection' (selected). Below these are fields for 'Alert / Data Summary' (Select), 'Explanation', and 'Location' (N/A).

- **Alert/Data Summary** – The reference code of the alert type (such as WILD), or data summary (such as SALIENT_WHEEL_IMPACT). For more information, see [Exhibit 53](#) in [Learning about Inspection Reason Codes](#).

Note: The LORFNCF alert can be closed by submitting an LORF_NCF data summary inspection of type LR.

- **Explanation** – free-form field to further explain the reason for the inspection.

Reporting Repairs and Inspections


3. Additional input fields appear depending on the selected Job Code (also by default for non-AAR Repairs and Inspections). For example, a wheel bearing code such as the Job Code '3071' requires a component location identified by axle and side ([Exhibit 15](#)).

- **Reason** – List of inspection reasons that can be used while closing this alert type. For more information, see [Exhibit 53](#) in [Learning about Inspection Reason Codes](#).
- **Axle** – Numeric and must be between 01 and 99. The leading zero is required.
- **Side** – Indicates the side of the equipment that was repaired (L or R).
- **Component Tag ID** – Numeric Format is XXXX0000000000 (four alpha characters plus up to ten digits).

Exhibit 15. Alert Closure Reporting (Wheel Bearing Axle Location)

Job Code * 3071 Why Made Code Axle * Side * Component Tag Id

This field is required.

Note: If you use a Close Alert icon  to access the Alert Closure Reporting page from either the Equipment Status or Equipment History queries, an additional button (Return to Search Results) is displayed at the bottom of the page. The “Return to Search Results” button not only returns you to your previous query page, it also executes the query once again so that any closures you report are reflected on the page.

4. Select **Save** to submit your alert closure. A “The closure record(s) reported was/were accepted into EHMS successfully” message indicates that your repair was saved without error. A “The closure record(s) reported closed [NUMBER] alerts” message indicates the number of alerts that were closed based upon your reporting ([Exhibit 16](#)).

Exhibit 16. Alert Closure Report Successfully Saved

Alert Closure(s) has been successfully added

The closure record(s) reported was/were accepted into EHMS successfully.
The closure record(s) reported closed 1 alerts

If this message is yellow, review the information message carefully

Alert Closure Reporting

Equipment Initial	Equipment Number	Closure Made By	Closure Rptd By	Closure Date	SPLC	ABT Performer	ABT Reporter	ABT Device
1 <input checked="" type="checkbox"/> RAIL	000000001	RAIL	RAIL	02/01/2024	640000000			Select

Job Code 3336 Why Made Code Axle 01 Component Tag Id

Done Enter Additional Alert Closures

Select this button to return to the Alert Closure Reporting page

5. If your repair is not able to be processed, an explanation of the problem is displayed ([Exhibit 17](#)). Errors for a specific field are shown immediately below that field. You can make the required changes in each field and then select **Save** again. Select **Clear** to clear all entry fields.

Exhibit 17. Alert Closure with Errors

Alert Closure Reporting

Notes

- Only an inspection can close a LORFNCF, THD, AEIUMLER, MVCOUPLER, MVFCOUPLER, TPDG or TPDJL alert. Repairs do not close these alerts.
- An ME inspection will not close an alert.
- Submitting an ABT requires that the user have proper permissions within the Umler application.
- Component Tag ID should only be entered once per axle location and Equipment ID.

1	<input type="checkbox"/>	RAIL	000000072	RAIL	RAIL	02/01/2024	123456000				
---	--------------------------	------	-----------	------	------	------------	-----------	--	--	--	--

Repair
 Non AAR Repair
 Inspection

Job Code * 3336
 Why Made Code
 Axle *
 Component Tag Id

Select All

Alert Closures—Inspection (Applying a Home Shop Disposition)

To apply a Home Shop Disposition (HSD) to an open Truck Hunting (THD), Truck Performance GSF (TPDG), or Truck Hunting LAHRLV (TPDL) alert, an ME – Car Inspected and Sent to Home Shop inspection needs to be applied to the alert. Following are the instructions for applying this inspection from the Alert Closure Reporting page.

Note: You can only apply the HSD to a car that has an open THD, TPDG, or TPDL alert.

1. Select **Alert Management > Alert Closures**. The Alert Closure Reporting page is displayed ([Exhibit 9](#)).
2. Enter all of the required information for the repair (in red) that is not pre-filled ([Exhibit 18](#)).

Exhibit 18. Alert Closure (ME Inspection)

Alert Closure Reporting

Notes

- Only an inspection can close a LORFNCF, THD, AEIUMLER, MVCOUPLER, MVFCOUPLER, TPDG or TPDJL alert. Repairs do not close these alerts.
- An ME inspection will not close an alert.
- Submitting an ABT requires that the user have proper permissions within the Umler application.
- Component Tag ID should only be entered once per axle location and Equipment ID.

1	<input type="checkbox"/>	RAIL	000000021	RAIL	RAIL	02/01/2024	123456000				
---	--------------------------	------	-----------	------	------	------------	-----------	--	--	--	--

Repair
 Non AAR Repair
 Inspection

Alert / Data Summary * THD
 Reason * ME Car Inspected and...
 Truck * A

Select All

- a. For the action, select the **Inspection** radio button.
 - b. For Alert / Data Summary, select **THD, TPDG, or TPDL**.
 - c. For the Reason, select **ME Car Inspected and Sent to Home Shop**.
 - d. Input the Truck Location.
3. Select **Save**. The Home Shop Disposition (HSD) has now been applied to this car/alert.

Nullifying an Alert Closure

When a repair or inspection is reported incorrectly, you could nullify (delete) the closure if your road reported the repair or inspection. You must have the Car Repair History permission and be either the repair reporter or Owner / MRP / Lessee / Mark Owner for the currently selected mark.

Note: Once you nullify a closure, the associated alert is reopened unless another repair has been reported that would close that alert.

Use the following procedure to nullify a closure:


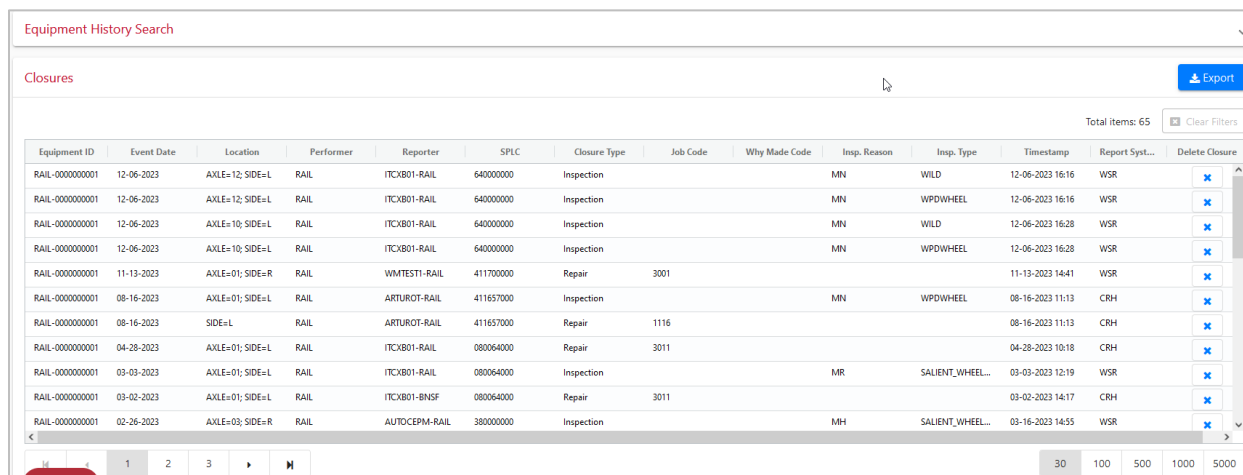











1. From the main menu, select **EHMS Query > Equipment History**.
2. From the Equipment History page, query the equipment with the Closures checkbox selected.
3. Locate the Closures section within the results and select the **Delete Closure** icon  next to the closure you want to nullify ([Exhibit 19](#)).

Exhibit 19. Nullify a Closure



The screenshot shows the 'Equipment History Search' interface. At the top, there is a search bar and an 'Export' button. Below the search bar, the 'Closures' section is active, showing a table with 65 total items. The table has the following columns: Equipment ID, Event Date, Location, Performer, Reporter, SPLC, Closure Type, Job Code, Why Made Code, Insp. Reason, Insp. Type, Timestamp, Report Syst..., and Delete Closure. The 'Delete Closure' column contains a blue 'X' icon for each row.

Equipment ID	Event Date	Location	Performer	Reporter	SPLC	Closure Type	Job Code	Why Made Code	Insp. Reason	Insp. Type	Timestamp	Report Syst...	Delete Closure
RAIL-0000000001	12-06-2023	AXLE=12; SIDE=L	RAIL	ITCXB01-RAIL	640000000	Inspection			MN	WILD	12-06-2023 16:16	WSR	
RAIL-0000000001	12-06-2023	AXLE=12; SIDE=L	RAIL	ITCXB01-RAIL	640000000	Inspection			MN	WPDWHEEL	12-06-2023 16:16	WSR	
RAIL-0000000001	12-06-2023	AXLE=10; SIDE=L	RAIL	ITCXB01-RAIL	640000000	Inspection			MN	WILD	12-06-2023 16:28	WSR	
RAIL-0000000001	12-06-2023	AXLE=10; SIDE=L	RAIL	ITCXB01-RAIL	640000000	Inspection			MN	WPDWHEEL	12-06-2023 16:28	WSR	
RAIL-0000000001	11-13-2023	AXLE=01; SIDE=R	RAIL	WIMTEST1-RAIL	411700000	Repair	3001				11-13-2023 14:41	WSR	
RAIL-0000000001	08-16-2023	AXLE=01; SIDE=L	RAIL	ARTUROT-RAIL	411657000	Inspection			MN	WPDWHEEL	08-16-2023 11:13	CRH	
RAIL-0000000001	08-16-2023	SIDE=L	RAIL	ARTUROT-RAIL	411657000	Repair	1116				08-16-2023 11:13	CRH	
RAIL-0000000001	04-28-2023	AXLE=01; SIDE=L	RAIL	ITCXB01-RAIL	080064000	Repair	3011				04-28-2023 10:18	CRH	
RAIL-0000000001	03-03-2023	AXLE=01; SIDE=L	RAIL	ITCXB01-RAIL	080064000	Inspection			MR	SALIENT_WHEEL...	03-03-2023 12:19	WSR	
RAIL-0000000001	03-02-2023	AXLE=01; SIDE=L	RAIL	ITCXB01-BNSF	080064000	Repair	3011				03-02-2023 14:17	CRH	
RAIL-0000000001	02-26-2023	AXLE=03; SIDE=R	RAIL	AUTOCEPM-RAIL	380000000	Inspection			MH	SALIENT_WHEEL...	03-16-2023 14:55	WSR	

4. A pop-up confirmation message appears asking if you want to delete the record. Select **Yes**. A “Closure is nullified successfully” message appears at the top of the page to indicate that the nullification is complete.

Searching for a SPLC


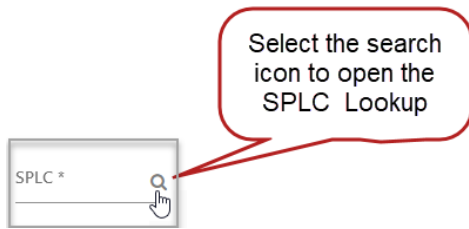
Standard Point Location Codes (SPLCs) are used to identify railroad locations in North America. On several pages within the EHMS application, you can select the small search icon  next to the SPLC field to initiate SPLC lookup ([Exhibit 20](#)).

Exhibit 20. SPLC Lookup Access



Use the following procedure to search for SPLCs:

1. Select the search icon  to the right of the SPLC input field. The SPLC Search page is displayed (see [Exhibit 21](#)).

Exhibit 21. SPLC Search Page

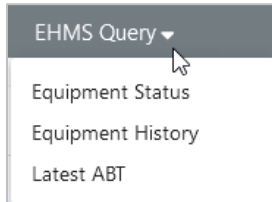
A screenshot of the "SPLC Search" page. The page has a title "SPLC Search" and a search icon in the top right corner. Below the title are four bullet points: "•Serving SCAC filters SPLCs that are served by the specified SCAC.", "•At least one field must be specified.", "•Minimum characters required for fields: SPLC 4, Location Name 3, County 3, SCAC 2", and "•SPLC, Location Name, and County matches are exact. Use * wildcard when uncertain. (example: DALLAS, DALL*)". Below the instructions are four input fields: "SPLC", "Location Name", "County", and "Serving SCAC". The "Serving SCAC" field is a dropdown menu with the text "Select a State/Province". A "Search" button is located in the bottom right corner.

2. Complete one or more of the available input fields. Adhere to these listed rules for the input fields.
 - The Serving SCAC (Standard Carrier Alpha Code) field filters for SPLCs that are served by the specified SCAC.
 - At least one field must be specified.
 - Minimum characters required for fields: SPLC 4, Location Name 3, County 3, SCAC 2.
 - SPLC, Location Name, and County matches are exact. Use * wildcard when uncertain (example: DALLAS, DALL*).
3. Select **Search** to initiate the search for SPLCs.
4. Select a listed SPLC code and then select the **Select** button. The input field from which the search was selected is filled with the selected SPLC.

Performing EHMS Queries

The options on the EHMS Query menu enable you to search for and view open and closed alerts as well as view historical details of alerts.

Exhibit 22. EHMS Query Menu



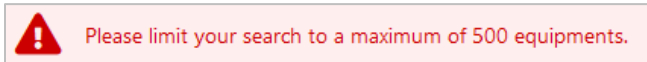
Three equipment queries are provided within the EHMS application.

- [Equipment Status](#) – provides information about currently open alerts and data summaries. Recommended if user is querying for open alerts or data summaries only.
- [Equipment History](#) – the most detailed query, provides the most information to the user on open and closed alerts, kip readings, data summaries, etc.
- [Latest ABT](#) – enables the user to search Umler for the latest ABT dates for a piece of equipment or range of equipment in Active status in Umler.

Equipment Status Query

The Equipment Status Query is intended as a quick ‘status check’ on the current health of the equipment specified. It returns all open EHMS alerts and open data summaries for the specified cars.

Note: For a range, the search returns a limited number of records; if your request exceeds the limit of 500 Equipment IDs, you’ll receive a warning message that the level has been reached. When this happens, simply reduce the number of Equipment IDs and re-run the query.



Use the following procedure to search the status of equipment:

1. From the main menu, select **EHMS Query > Equipment Status**. The Equipment Status page is displayed.
2. Perform a search for the desired cars. Note that you can search a range of cars by placing a hyphen (-) between the starting and ending car numbers.

When specifying Equipment IDs, you can:

- Enter a list of cars by separating the cars with a blank space.
- Search a range of cars by placing a hyphen (-) between the starting and ending car numbers.

Performing EHMS Queries

- Copy and paste a list of cars from another document.

Note: The Equipment ID field is limited to 150 rows of information.

Your query results include listings of alerts and data summaries, which are separated by tabs ([Exhibit 23](#)).

Exhibit 23. Equipment Status Search

Equipment Status

Equipment ID *

RAIL1-36

Date Range:

From Date To Date

Print All Clear Reset Search

Alerts

Print Export

Total items: 30 Clear Filters

Equipment ID	Alert Type	Event Name	Location	Home Shop	Date	Alert Level	Close Alert
RAIL-000000001	WTDH		TRUCK A	No	08-16-2023 00:00	ATSI Window Open	
RAIL-000000002	AEITAG		AEITAG R	No	09-26-2019 00:00	AAR A2	
RAIL-000000002	MVFCOUPLER	MIS_COTTER_KEY	COUPLER A	No	12-10-2019 23:33	ATSI Window Open	
RAIL-000000002	MVFCOUPLER	SING_MIS_FAS	COUPLER A	No	12-10-2019 23:33	ATSI Window Open	
RAIL-000000002	MVFCOUPLER	MIS_COTTER_KEY	COUPLER B	No	12-10-2019 23:33	ATSI Window Open	
RAIL-000000002	MVFCOUPLER	DOUB_MS_FAS_TWO_SIDE	COUPLER B	No	12-10-2019 23:33	ATSI Window Open	
RAIL-000000002	WILD		WHEEL 05L	No	02-02-2013 00:00	AAR A2	
RAIL-000000002	WILD		WHEEL 01R	No	02-20-2022 00:00	ATSI Mandatory	
RAIL-000000003	ABD	Cup_SA_Eq_1	WHEELBEARING 02L	No	08-29-2019 15:29	AAR A1	
RAIL-000000003	ABD	Cone_SA_Eq_1	WHEELBEARING 02R	No	08-29-2019 15:29	AAR A1	
RAIL-000000003	MVFCOUPLER	MIS_RETAINER	COUPLER B	No	12-11-2019 10:05	ATSI Window Open	

30 100 500 1000 5000

Data Summaries

Print Export

Total items: 11 Clear Filters

	Equipment ID	Data Summary Type	Owner	Location	Report View	Earliest Open Date	Latest Event Date	Report Repair / Insp...	Opened In Error
	RAIL-000000001	LORF_NCF	NS	BASE		02-01-2022	09-06-2021		
	RAIL-000000002	SALIENT_WHEEL_IMP...	CSR_CSXT	WHEEL 04R		04-04-2013	08-22-2013		
	RAIL-000000002	BRAKEHEALTH_CAR	RAIL	BASE		07-01-2014	07-01-2014		
	RAIL-000000005	BRAKEHEALTH_CAR	RAIL	BASE		08-13-2017	09-09-2022		
	RAIL-000000005	BRAKEHEALTH_TRK	BNSF,RAIL	TRUCK B		04-21-2022	09-09-2022		
	RAIL-000000005	BRAKEHEALTH_TRK	BNSF,RAIL	TRUCK A		04-21-2022	09-09-2022		
	RAIL-000000013	BRAKEHEALTH_CAR	RAIL	BASE		08-31-2022	04-20-2023		
	RAIL-000000013	BRAKEHEALTH_TRK	RAIL	TRUCK B		08-31-2022	03-27-2023		
	RAIL-000000013	BRAKEHEALTH_TRK	RAIL	TRUCK A		08-31-2022	03-27-2023		
	RAIL-000000030	LORF_NCF	NS	BASE		01-11-2021	09-06-2021		
	RAIL-000000036	LORF_NCF	RAIL	BASE		01-29-2021	01-29-2021		

30 100 500 1000 5000

See the following sections for more information about working with alerts and data summaries from the Equipment Status Results page:

- [Working with Alerts in Equipment Status Query Results](#) describes the fields displayed for alerts and explains the tasks you can complete from the Alerts tab.
- [Working with Data Summaries in Equipment Status Query Results](#) describes the fields displayed for data summaries and explains the tasks you can complete from the Data Summaries tab.

Working with Alerts in Equipment Status Query Results

When viewing Equipment Status Results ([Exhibit 23](#)), the following fields are displayed for alerts:

- Equipment ID** The reporting initial and number of the equipment.
- Alert Type** Identifies the detector type that generated the reading.
- Event Name** Indicates unique events associated with the open alert.
- Location** Where the component under alert is located on the car.
- Home Shop** Indicates that the car has been inspected by the handling carrier and is being sent to its home shop for alert remediation. See [Alert Closures—Inspection \(Applying a Home Shop Disposition\)](#) for more information.
- Date** Indicates the date the event was created.
- Alert Level** The current level of the alert.
- Close Alert** Selecting this icon takes you directly to the Alert Closure Reporting page ([Exhibit 9](#)).

When viewing Equipment Status Results, you can perform the following actions from the Alerts tab of the Search Results page:


- Select the **Close Alert** icon  of a listed alert record to report an alert closure for that record (see [Reporting Repairs and Inspections](#)).
- Select **Export** to export the displayed records to a CSV file. A dialog box is displayed allowing you to either open the file with your computer’s default program (typically Excel) or save it. When opened, the displayed data is converted to rows and columns of information that can be stored and manipulated in a spreadsheet ([Exhibit 24](#)).




Exhibit 24. CSV Export

	A	B	C	D	E	F	G	H
1	Equipment ID	Alert Type	Event Name	Location	Home Shop	Date	Alert Level	
2	RAIL-0000000001	WTDH		TRUCK A	No	8/16/2023 0:00	ATSI Window Open	
3	RAIL-0000000002	AEITAG		AEITAG R	No	9/26/2019 0:00	AAR A2	
4	RAIL-0000000002	MVECOUPLER	MIS_COTTER_KEY	COUPLER A	No	12/10/2019 23:33	ATSI Window Open	
5	RAIL-0000000002	MVFCOUPLER	SING_MIS_FAS	COUPLER A	No	12/10/2019 23:33	ATSI Window Open	
6	RAIL-0000000002	MVECOUPLER	MIS_COTTER_KEY	COUPLER B	No	12/10/2019 23:33	ATSI Window Open	
7	RAIL-0000000002	MVFCOUPLER	DOUB_MS_FAS_TWO_SID	COUPLER B	No	12/10/2019 23:33	ATSI Window Open	
8	RAIL-0000000002	WILD		WHEEL 05L	No	2/2/2013 0:00	AAR A2	
9	RAIL-0000000002	WILD		WHEEL 01R	No	2/20/2022 0:00	ATSI Mandatory	
10	RAIL-0000000003	ABD	Cup_SA_Eq_1	WHEELBEARING	No	8/29/2019 15:29	AAR A1	
11	RAIL-0000000003	ABD	Cone_SA_Eq_1	WHEELBEARING	No	8/29/2019 15:29	AAR A1	

- Select **Print** to print the displayed search results. The print dialog box is displayed allowing you to select the printer you want to use.

Working with Data Summaries in Equipment Status Query Results

When viewing Equipment Status Results ([Exhibit 23](#)), the following fields are displayed for data summaries:

Search icon	Select the search icon  to drill down and view the Data Summary Details page for the record (Exhibit 27).
Equipment ID	The reporting initial and number of the equipment.
Data Summary Type	Identifies the detector type that generated the reading.
Owner	Indicates the detector owners that contributed to the data summary. If your company is the only contributor to the data summary, the names of the owner(s) are displayed. If not, the number of contributing detector owners is displayed.
Location	Where the identified component is located on the car.
Report View	Displays the Truck-Level report view for all the wheels on the truck. Note: The Truck-Level report view is only available for Wheel Profile Detector (WPD) data summaries.
Earliest Open Date	Indicates the earliest open date across all data summary contributors (several roads may have created a data summary for the component).
Latest Event Date	Date of the last reading that updated the data summary.
Report Repair/Inspection	If the  icon is present, select this icon to report a repair or inspection (see Reporting Repairs and Inspections).
Opened in Error	If you are the owner of the data collected by the detector, an  icon enables you to close the open data summary.

[Exhibit 25](#) shows a sample set of Data Summaries results.

Exhibit 25. Data Summaries from Equipment Status Results

Equipment ID	Data Summary Type	Owner	Location	Report View	Earliest Open Date	Latest Event Date	Report Repair / In...	Opened In Error
RAIL-0000000001	LORF_NCF	NS	BASE		02-01-2022	09-06-2021		
RAIL-0000000002	SALIENT_WHEEL_IM...	CSR,CSXT	WHEEL 04R		04-04-2013	08-22-2013		
RAIL-0000000002	BRAKEHEALTH_CAR	RAIL	BASE		07-01-2014	07-01-2014		
RAIL-0000000005	BRAKEHEALTH_CAR	RAIL	BASE		08-13-2017	09-09-2022		
RAIL-0000000005	BRAKEHEALTH_TRK	BNSF,RAIL	TRUCK B		04-21-2022	09-09-2022		
RAIL-0000000005	BRAKEHEALTH_TRK	BNSF,RAIL	TRUCK A		04-21-2022	09-09-2022		
RAIL-0000000013	BRAKEHEALTH_CAR	RAIL	BASE		08-31-2022	04-20-2023		

When viewing Equipment Status Results, you can perform the following actions from the Data Summaries tab of the Search Results page:

- Select **Export** to export the displayed records to a CSV file. A dialog box is displayed allowing you to either open the file with your computer’s default program (typically Excel) or save it. When opened, the displayed data is converted to rows and columns of information that can be stored and manipulated in a spreadsheet (see [Exhibit 26](#)).

Exhibit 26. CSV Data Summary Export

	A	B	C	D	E	F
1	Equipment ID	Data Summary Type	Owner	Location	Earliest Open Date	Latest Event Date
2	RAIL-0000000013	BRAKEHEALTH_CAR	RAIL	BASE	8/31/2022	4/20/2023
3	RAIL-0000000013	BRAKEHEALTH_TRK	RAIL	TRUCK B	8/31/2022	3/27/2023
4	RAIL-0000000013	BRAKEHEALTH_TRK	RAIL	TRUCK A	8/31/2022	3/27/2023
5	RAIL-0000000005	BRAKEHEALTH_CAR	RAIL	BASE	8/13/2017	9/9/2022
6	RAIL-0000000005	BRAKEHEALTH_TRK	BNSF,RAIL	TRUCK B	4/21/2022	9/9/2022
7	RAIL-0000000005	BRAKEHEALTH_TRK	BNSF,RAIL	TRUCK A	4/21/2022	9/9/2022
8	RAIL-0000000001	LORF_NCF	NS	BASE	2/1/2022	9/6/2021
9	RAIL-0000000030	LORF_NCF	NS	BASE	1/11/2021	9/6/2021
10	RAIL-0000000036	LORF_NCF	RAIL	BASE	1/29/2021	1/29/2021
11	RAIL-0000000002	BRAKEHEALTH_CAR	RAIL	BASE	7/1/2014	7/1/2014
12	RAIL-0000000002	SALIENT_WHEEL_IMF	CSR,CSXT	WHEEL 04R	4/4/2013	8/22/2013

- Select **Print** to print the displayed search results. The print dialog box is displayed allowing you to select the printer you want to use.
- If the icon is present, select this icon to report a repair or inspection (see [Reporting Repairs and Inspections](#)).
- Select the search icon next to a listed data summary record to view full details about the data summary. The Data Summary Details page for the selected record opens ([Exhibit 27](#)).
- Select the **Truck** link in the Report View column for a Wheel Profile Detector Data Summary to view information for all the wheels on the truck ([Exhibit 34](#)).

Exhibit 27. Data Summary Details With Aggregate Method

Data Summary Details

Equipment ID: RAIL0000000888 Location: WHEEL 04R Data Summary: SALIENT WHEEL IMPACT

[Data Summary Definition](#)
[Hide Criteria](#)

Opening Criteria: Dynamic Impact >= 30 kips or Ratio >= 3.0 or Peak Impact >= 65 kips
Autoclose Criteria: 3 consecutive reads less than 20 dynamic and less than 1.5 ratio
Date of last bad detector read:

[Hide Aggregate Method](#)

Note: All times are Eastern Standard Time (EST)

Name	Aggregation	Aggregate Method	CSXT
Open Date	01-03-2024 05:10	Earliest Open Date for	01-03-2024 05:10
Last Event Date	01-03-2024 05:10	Latest Date for	01-03-2024 05:10
Count of DS Creators	1	Count of DS for	n/a
Total number of readings	1	Sum for	1
Max measured peak impact (kips)	136.00	Max for	136.00
Max measured dynamic (peak minus weight)	126.00	Max for	126.00
Max measured ratio (peak/weight)	13.60	Max for	13.60
Count of dynamic readings >= 30 KIPS	1	Sum for	1
Count of peak readings >= 80 KIPS	1	Sum for	1
Count of peak readings >= 90 KIPS	1	Sum for	1
First date the dynamic reading >= 30 KIPS	01-03-2024 05:10	Min for	01-03-2024 05:10
First date the peak reading >= 80 KIPS	01-03-2024 05:10	Min for	01-03-2024 05:10
First date the peak reading >= 90 KIPS	01-03-2024 05:10	Min for	01-03-2024 05:10
Latest dynamic reading	126.00	Latest for	126.00
Latest ratio	13.60	Latest for	13.60
Latest equipment speed	31.20	Latest for	31.20
Last bad reading	01-03-2024 05:10	Max for	01-03-2024 05:10
Last timestamp with readings Dyn<20 and Ratio<1.5		Autoclose for	
2nd to Last timestamp with readings Dyn<20 and Ratio<1.5		Autoclose for	
3rd to Last timestamp with readings Dyn<20 and Ratio<1.5		Autoclose for	

[Close](#)

In the Data Summary Details page, you can view detailed information about the equipment and the detector readings. The Criteria section displays information about criteria for opening and autoclosing the data summary. This section also displays information about when the last bad reading occurred or whether an autoclose is in progress. Use the right scroll bar to scroll through all the data. You can select **Hide Criteria** if you choose not to display these criteria. You can also select **Show Aggregate Method** to see the method used to generate the aggregate (for example, Count, Min, Max, Sum, etc.).

By default, only aggregate data is shown. However, if you are the owner of detector data, you can see individual columns that show the source of the data readings. [Exhibit 33](#) shows the source of data readings for a Data Summary containing information contributed by three different marks.

Note: You can see additional descriptive information by hovering your pointer over fields in the Name column.

When you have finished viewing data summary details, select **Close** to close the Data Summary Details page and return to the Equipment Status page.

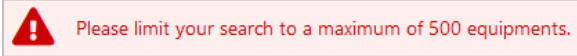
Equipment History Query

The Equipment History Query provides a detailed look at the equipment specified. It returns, based on your selected options, all available information on the specified cars. You can select options to view details such as alerts, closures, and data summaries.

Performing EHMS Queries

The returned results provide information based on the query and the Umler interested party access to Performer, kip readings for the previous 90 days, etc.

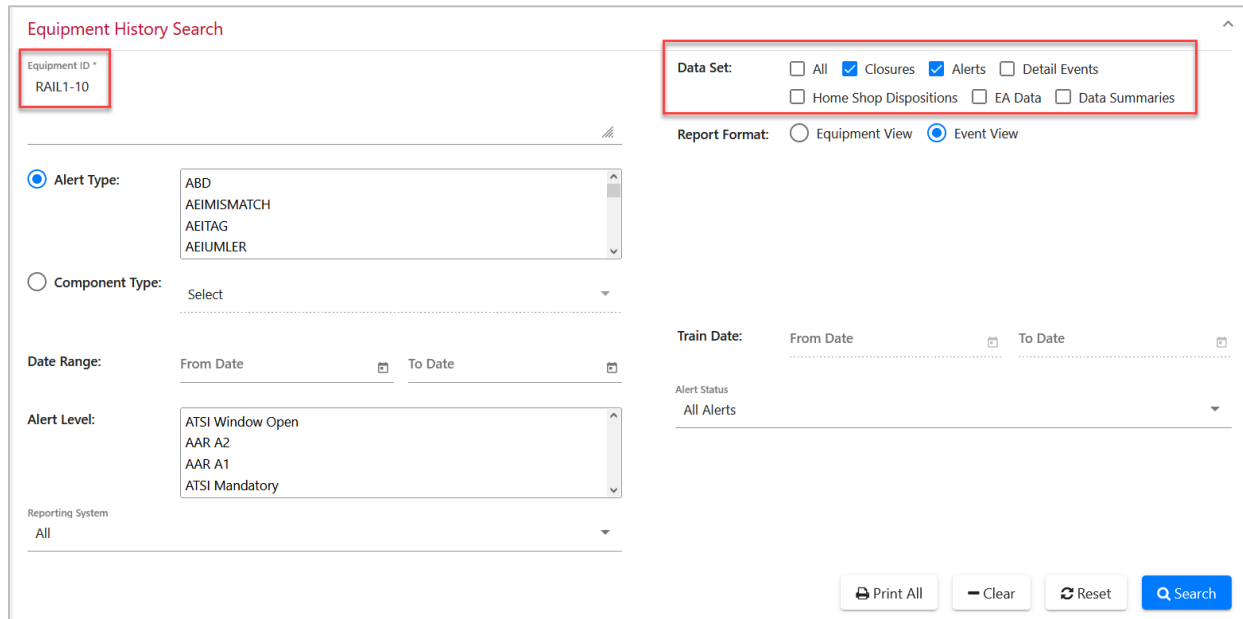
Note: For a range, the search returns a limited number of records; if your request exceeds the limit of 500 Equipment IDs, you'll receive a warning message that the level has been reached. When this happens, simply reduce the number of Equipment IDs and re-run the query.



Use the following procedure to search the history of equipment:

1. From the main menu, select **EHMS Query > Equipment History**. The Equipment History Search page is displayed.

Exhibit 28. Equipment History Search (Range)

A screenshot of the "Equipment History Search" web form. The form has a title "Equipment History Search" at the top left. It contains several input fields and checkboxes. A red box highlights the "Equipment ID" field, which contains "RAIL1-10". Another red box highlights the "Data Set" section, which includes checkboxes for "All", "Closures", "Alerts", "Detail Events", "Home Shop Dispositions", "EA Data", and "Data Summaries". The "Alerts" checkbox is checked. Below this, there are radio buttons for "Equipment View" and "Event View", with "Event View" selected. Other fields include "Alert Type" (a dropdown menu with options ABD, AEIMISMATCH, AEITAG, AEIUMLER), "Component Type" (a dropdown menu with "Select"), "Date Range" (fields for "From Date" and "To Date"), "Alert Level" (a dropdown menu with options ATSI Window Open, AAR A2, AAR A1, ATSI Mandatory), and "Reporting System" (a dropdown menu with "All"). At the bottom right, there are buttons for "Print All", "Clear", "Reset", and "Search".

2. Complete the input fields. Enter one or more Equipment IDs to search for an individual car or specify a range of cars by placing a hyphen (-) between the starting and ending car numbers. The input fields available depend on which **Data Set** checkboxes are selected (unavailable fields are grayed-out). When **All** is selected, all input fields that are available will appear in the results.
3. Select **Search**. By default, the resulting data is separated into tabs of information, with one tab for each dataset requested, such as alerts and data summaries ([Exhibit 29](#)).

Exhibit 29. Equipment History Search Results

Equipment History Search

Alerts [Export](#)

Total items: 159 [Clear Filters](#)

Equipment ID	Alert Type	Open Date	Location	Alert Date	Alert Status	Closed Date	Alert Level	Opening R...	Closing Re...	Report...	Report...	Close Alert
RAIL-0000000003	ABD	08-29-2019	AXLE=03; SIDE=L	08-29-2019	CLOSE	06-11-2020	C	ALERT_EVENT	INSPECTION	RAIL	06-11-...	17:19
RAIL-0000000004	AEIUMLER	09-30-2020		09-30-2020	OPEN		W	ALERT_EVENT				
RAIL-0000000004	MVECOUPLER	12-11-2019	END=A	12-11-2019	CLOSE	05-14-2020	W	ALERT_EVENT	INSPECTION	RAIL	05-14-...	10:12
RAIL-0000000004	WILD	10-01-2016	AXLE=26; SIDE=L	10-01-2016	CLOSE	06-06-2018	O	ALERT_EVENT	INSPECTION	BNSF	06-07-...	03:07
RAIL-0000000005	WILD	03-07-2022	AXLE=01; SIDE=L	03-07-2022	CLOSE	03-07-2022	C	ALERT_EVENT	REPAIR	RAIL	03-07-...	14:36

30 100 500 1000 5000

Data Summaries [Export](#)

Total items: 44 [Clear Filters](#)

Equipment ID	Data Summar...	Owner	Location	Report View	Earliest Open ...	Latest Event ...	Close Date	Reason	Report Repal...	Opened In Err...
RAIL-0000000001	LORF_NCF	NS	BASE		02-01-2022	09-06-2021				
RAIL-0000000002	SALIENT_WHEE...	CSR.CSXT	WHEEL OAR		04-04-2013	08-22-2013				
RAIL-0000000002	BRAKEHEALTH...	RAIL	BASE		07-01-2014	07-01-2014				X
RAIL-0000000005	BRAKEHEALTH...	RAIL	BASE		08-13-2017	09-09-2022				X
RAIL-0000000005	BRAKEHEALTH...	BNSF.RAIL	TRUCK B		04-21-2022	09-09-2022				X
RAIL-0000000005	BRAKEHEALTH...	BNSF.RAIL	TRUCK A		04-21-2022	09-09-2022				X
RAIL-0000000013	BRAKEHEALTH...	RAIL	BASE		08-31-2022	04-20-2023				X

30 100 500 1000 5000

See the following sections for more information about working with alerts and data summaries from the Equipment History Search Results page:

- [Working with Alerts in Equipment History Search Results](#) describes the fields displayed for alerts and explains the tasks you can complete from the Alerts tab.
- [Working with Data Summaries in Equipment History Search Results](#) describes the fields displayed for data summaries and explains the tasks you can complete from the Data Summaries tab.

Working with Alerts in Equipment History Search Results

When viewing Equipment History Search Results, the following fields are displayed for alerts:

- Search Icon** Select the search icon to drill-down and view the Event Details page for the record.
- Equipment ID** The reporting initial and number of the equipment.
- Alert Type** Identifies the detector type that generated the reading.

Performing EHMS Queries

Open Date	Identifies the date the alert was opened.
Location	Where the component under alert is located on the car.
Alert Date	Identifies the date the alert occurred.
Alert Status	Indicates the current status of the alert (i.e., Open or Closed).
Closed Date	Identifies the date the alert was closed.
Alert Level	The current level of the alert.
Opening Reason	Displays the reason associated with opening the alert.
Closing Reason	Displays the reason associated with closing the alert.
Reported Closed By	Identifies the party or method that first reported that the alert was closed.
Reported Closed Date	Identifies the date the alert was reported closed.
Close Alert	Selecting this icon takes you directly to the Alert Closure Reporting page (Exhibit 9).

When viewing Equipment History Search Results, you can perform the following actions from the Alerts tab of the Search Results page:




- Select the search icon  to drill-down and view the Alert Event Details page for the record ([Exhibit 30](#)).
- Select a column header to sort search results by that column.
- Select the Close Alert icon  of a listed alert record to report an alert closure for that record (see [Reporting Repairs and Inspections](#)).

Exhibit 30. Alert Event Details

Alert Event Details

Equipment ID: RAIL0000148825 Location: WHEEL 03R Alert Type: WPDWHEEL Total items: 2




Event Date	Event Name	Alert Level	Opened Alert	Timestamp	Site Name	Meas. Value
10-02-2019 02:51	FLANGE_HEIGHT	W		11-18-2019 16:25	RAIL_DETECTOR_NAME	1.50
08-01-2019 02:51	FLANGE_THICKNESS	W		11-18-2019 14:39	RAIL_DETECTOR_NAME	0.93

30 100 500 1000 5000

Working with Data Summaries in Equipment History Search Results

When viewing Equipment History Search Results, the following fields are displayed for data summaries:

Note: Refer to the [EHMS product page](#) on Railinc’s corporate website or see [Accessing EHMS Support Documentation](#) to access additional Data Summary Definition documents that explain the elements contained in data summaries.

Search icon	Select the search icon  to drill-down and view the Data Summary Details page for the record (Exhibit 32).
Equipment ID	The reporting initial and number of the equipment.
Data Summary Type	Identifies the detector type that generated the reading.
Owner	Indicates the detector owners that contributed to the data summary. If your company is the only contributor to the data summary, the names of the owner(s) are displayed. If not, the number of contributing detector owners is displayed.
Location	Where the identified component is located on the car.
Report View	Displays the Truck-Level report view for all the wheels on the truck. Note: The Truck-Level report view is only available for Wheel Profile Detector (WPD) data summaries.
Earliest Open Date	Indicates the earliest open date across all data summary contributors (several roads may have created a data summary for the component).
Latest Event Date	Date of the last reading that updated the data summary.
Close Date	Indicates the date the data summary was closed.
Reason	Indicates the reason the data summary was closed.
Report Repair/Inspection	If the  icon is present, select this icon to report a repair or inspection (see Reporting Repairs and Inspections).
Opened in Error	If you are the owner of the data collected by the detector, an  icon enables you to close the open data summary.

[Exhibit 31](#) shows a sample set of Data Summaries results.

Exhibit 31. Data Summaries from Equipment History Search Results

Equipment ID	Data Summar...	Owner	Location	Report View	Earliest Open ...	Latest Event ...	Close Date	Reason	Report Repai...	Opened In Err...
RAIL-000000001	LORF_NCF	NS	BASE		02-01-2022	09-06-2021				
RAIL-000000002	SALIENT_WHEE...	CSR,CSXT	WHEEL 04R		04-04-2013	08-22-2013				
RAIL-000000002	BRAKEHEALTH_...	RAIL	BASE		07-01-2014	07-01-2014				
RAIL-000000005	BRAKEHEALTH_...	RAIL	BASE		08-13-2017	09-09-2022				
RAIL-000000005	BRAKEHEALTH_...	BNSF.RAIL	TRUCK B		04-21-2022	09-09-2022				
RAIL-000000005	BRAKEHEALTH_...	BNSF.RAIL	TRUCK A		04-21-2022	09-09-2022				
RAIL-000000013	BRAKEHEALTH_...	RAIL	BASE		08-31-2022	04-20-2023				

When viewing Equipment History Search Results, you can perform the following actions from the Data Summaries tab of the Search Results page:

- Select the Report Repair/Inspection icon of a listed data summary record to report a repair or inspection for that record (see [Entering Alert Closures](#)).
- Select the search icon next to a listed data summary record to view full details about the data summary. The Data Summary Details page for the selected record opens ([Exhibit 32](#)). Select the Data Summary Definition link to view additional detailed information about the type of data summary displayed on the page.
- Select the **Export** button to download the listed results to a CSV file.
- Select the Truck report view link for a Wheel Profile Detector Data Summary to view information for all the wheels on the truck ([Exhibit 34](#)).

Exhibit 32. Data Summary Details With Aggregate Method

Data Summary Details

Equipment ID: RAIL0000000888 Location: WHEEL 01R Data Summary: SALIENT WHEEL IMPACT

[Data Summary Definition](#)
[Hide Criteria](#)

Opening Criteria: Dynamic Impact >= 30 kips or Ratio >= 3.0 or Peak Impact >= 65 kips
Autoclose Criteria: 3 consecutive reads less than 20 dynamic and less than 1.5 ratio
Date of last bad detector read:

Note: All times are Eastern Standard Time (EST) [Hide Aggregate Method](#)

Name	Aggregation	Aggregate Method	RR1
Open Date	02-22-2023 02:42	Earliest Open Date for	02-22-2023 02:42
Last Event Date	02-22-2023 02:42	Latest Date for	02-22-2023 02:42
Count of DS Creators	1	Count of DS for	n/a
Total number of readings	1	Sum for	1
Max measured peak impact (kips)	72.60	Max for	72.60
Max measured dynamic (peak minus weight)	36.50	Max for	36.50
Max measured ratio (peak/weight)	2.01	Max for	2.01
Count of dynamic readings >= 30 KIPS	1	Sum for	1
Count of peak readings >= 80 KIPS	0	Sum for	0
Count of peak readings >= 90 KIPS	0	Sum for	0
First date the dynamic reading >= 30 KIPS	02-22-2023 02:42	Min for	02-22-2023 02:42
First date the peak reading >= 80 KIPS		Min for	
First date the peak reading >= 90 KIPS		Min for	
Latest dynamic reading	36.50	Latest for	36.50
Latest ratio	2.01	Latest for	2.01
Latest equipment speed		Latest for	
Last bad reading	02-22-2023 02:42	Max for	02-22-2023 02:42
Last timestamp with readings Dyn<20 and Ratio<1.5		Autoclose for	
2nd to Last timestamp with readings Dyn<20 and Ratio<1.5		Autoclose for	
3rd to Last timestamp with readings Dyn<20 and Ratio<1.5		Autoclose for	

[Close](#)

In the Data Summary Details page, you can view detailed information about the equipment and the detector readings. The Criteria section displays information about criteria for opening and autoclosing the data summary. This section also displays information about when the last bad reading occurred or whether an autoclose is in progress. Use the scroll bar on the right to view all the data. Select **Hide Criteria** if you choose not to display these criteria. Select **Show Aggregate Method** to see the method used to generate the aggregate (for example, Count, Min, Max, Sum, etc.).

By default, only aggregate data is shown. However, if you are the owner of detector data, you can also see individual columns that show the source of the data readings. [Exhibit 33](#) shows the source of data readings for a Data Summary containing information contributed by multiple marks.

Note: View additional descriptive information by hovering your pointer over fields in the **Name** column.

Exhibit 33. Data Summary Details With Data Reading Sources

Data Summary Details

Equipment ID: RAIL0000000888 Location: TRUCK A Data Summary: BrakeHealth_TRK

[Data Summary Definition](#)
[Hide Criteria](#)

Opening Criteria: Any wheel temperature detector passing when train is in a braking condition.
Autoclose Criteria: Data summary is always open.
Date of last bad detector read:

Note: All times are Eastern Standard Time (EST) [Show Aggregate Method](#)

Name	Aggregation	RR1	RR2	RR3
Open Date	02-06-2023 03:29	02-06-2023 03:29	02-06-2023 03:29	05-06-2023 01:35
Last Event Date	05-06-2023 01:35	02-06-2023 03:29	05-06-2023 01:35	05-06-2023 01:35
Count of DS Creators	3	n/a	n/a	n/a
Timestamp of the last Brake Performance Test when the train was in a braking condition	05-06-2023 01:35	02-06-2023 03:29	05-06-2023 01:35	05-06-2023 01:35

✕ Close

When you have finished viewing the data summary details, select **Close** to close the Data Summary Details page and return to the Equipment History Query page.

For Wheel Profile Detector data summaries, select the Truck link in the **Report View** column on the Equipment History Search Results page to view information for all the wheels on the truck ([Exhibit 34](#)).

Exhibit 34. Data Summary Details WPD Data Summary Truck-Level Report

Data Summary Details

Equipment ID: RAIL0000000988 Data Summary: WPD Data Summary [Data Summary Definition](#)
[Hide Criteria](#)

Opening Criteria: Any wheel profile detector passing. Display measurements in: INCHES
Autoclose Criteria: Data summary is always open.
Date of last bad detector read:

Note: All times are Eastern Standard Time (EST)

Location: **WHEEL 03L**

Open Date: 11-27-2023 06:50
Last Event Date: 11-27-2023 06:50
Count of DS Creators: 1

Wheelset Change Date	Rim Thickness	Flange Height	Flange Thickness	Hollow Tread	Back To Back	Reference Groove	Rim Wear Rate	Passing Timestamp
	1.272	1.387	1.371	0.0	53.12			11-27-2023 06:50

Location: **WHEEL 03R**

Open Date: 11-27-2023 06:50
Last Event Date: 11-27-2023 06:50
Count of DS Creators: 1

Wheelset Change Date	Rim Thickness	Flange Height	Flange Thickness	Hollow Tread	Back To Back	Reference Groove	Rim Wear Rate	Passing Timestamp
	1.163	1.431	0.954	2.944	53.12			11-27-2023 06:50

Location: **WHEEL 04L**

Open Date: 11-27-2023 06:50
Last Event Date: 11-27-2023 06:50
Count of DS Creators: 1

Wheelset Change Date	Rim Thickness	Flange Height	Flange Thickness	Hollow Tread	Back To Back	Reference Groove	Rim Wear Rate	Passing Timestamp
	1.263	1.399	1.112	1.482	53.07			11-27-2023 06:50

Location: **WHEEL 04R**

Open Date: 11-27-2023 06:50
Last Event Date: 11-27-2023 06:50
Count of DS Creators: 1

Wheelset Change Date	Rim Thickness	Flange Height	Flange Thickness	Hollow Tread	Back To Back	Reference Groove	Rim Wear Rate	Passing Timestamp
	1.197	1.461	1.166	2.818	53.07			11-27-2023 06:50

You can choose whether to view measurements in inches or 16ths of an inch by selecting the toggle in the top right.

When you have finished viewing data summary details, select **Close** to close the Report View page and return to the Equipment History Query page.

Latest Air Brake Test (ABT)

Use the following procedure to search for the latest air brake test (ABT):

1. From the main menu, select **EHMS Query > Latest ABT Query**. The Latest ABT Query page is displayed.

Exhibit 35. Latest ABT Query

Latest ABT Query

Equipment ID *

Date Range:

From Date To Date

Print All Clear Reset Search

2. Enter a specific **Equipment ID**, a range, a list of car ranges or a mix of all three.
3. As desired, specify a date range to narrow down search results.
4. Select **Search** to initiate the query. The search results are displayed, which only include active Umler equipment.

Exhibit 36. Latest ABT Search Results

Latest ABT Query

Equipment ID *

RAIL518-574, RAIL700-1100

Date Range:

From Date To Date

Print All Clear Reset Search

Search Results

Print Export

Total items: 5 Clear Filters

Equipment ID	Latest ABT Date
RAIL-0000000518	11-09-2023
RAIL-0000000573	10-10-2023
RAIL-0000000574	09-17-2023
RAIL-0000000700	10-24-2023
RAIL-0000000904	08-22-2023

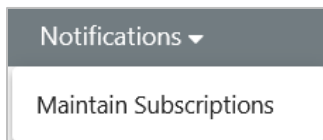
30 100 500 1000 5000

Working with Notification Subscriptions

Notification subscriptions help inform you of changes in the health of the equipment that you are responsible for, on a schedule that you select. This messaging process enables you to identify equipment populations and set up subscriptions (depending on your permissions) to provide you with alert and data summary information about the equipment you want to track. Use the Notifications menu to work with notifications ([Exhibit 37](#)). Also, see [Notification Flow Chart](#) for more reference information.

Note: EHMS notifications are designed for system-to-system communications and are not configured by default. Notifications are usually managed by Railinc Product Support. If you are interested in using notifications, contact the Railinc Customer Success Center (CSC). **There is a charge for notifications.**

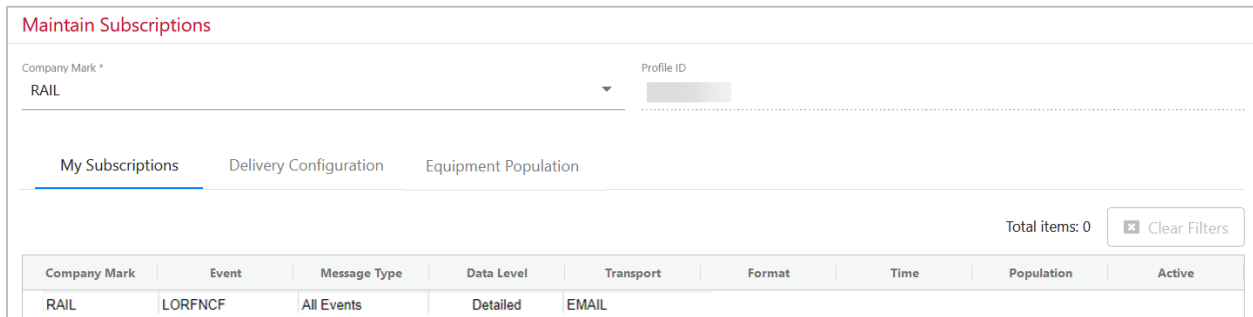
Exhibit 37. Notifications Menu



Use the following procedure to view EHMS notification subscriptions:

1. From the main menu, select **Notifications > Maintain Subscriptions**. The Maintain Subscriptions page is displayed.

Exhibit 38. My Subscriptions With EHMS Generic Access



If you see the message: “*Notification profile for [user ID] does not exist in the system. Please contact your company administrator to setup the profile.*”, this indicates that you do not have any notifications assigned to your user ID.

If you have the EHMS Generic Access User role and if a subscription profile is set up for your user ID, the Maintain Subscriptions page displays three tabs to which you have view-only access: My Subscriptions, Delivery Configuration, and Equipment Population ([Exhibit 38](#)).

If you have the EHMS Road Admin role, the Maintain Subscriptions page displays the following tabs, which enable you to review the details of all the EHMS Notification Subscriptions that are set up for your company: Subscription Status, My Subscriptions, Delivery Configuration, Company Subscriptions, Equipment Population, and Maintain Profiles.

Exhibit 39. Subscription Status With EHMS Road Admin Access

Maintain Subscriptions

Company Mark *
RAIL

Profile ID



Subscription Status My Subscriptions Delivery Configuration Company Subscriptions Equipment Population Maintain Profiles

Total items: 201

	Event	Message Type	Data Level	Transport	Format	Time	Population	Delivery Address	SSO ID	Profile	Address	Company
✘	WILD	Alert Open And Close Events	Summary	EMAIL	Flat Record v2007.1	Every 4 hours	AIR Cars			Y	N	Y
✘	WILD_WPD	Alert Open and Close Events	Detailed	EMAIL	Flat Record v2007.1	Immediate	FTP Check			N	N	Y
✔	ACOUSTIC_RBAM	Close Events	Detailed	Message Queue	XML v2007.2	Immediate	DO NOT MODIFY - IQ SUB			Y	Y	Y
✔	ACOUSTIC_RBAM	Open Events	Detailed	Message Queue	XML v2007.2	Immediate	DO NOT MODIFY - IQ SUB			Y	Y	Y
✔	ACOUSTIC_RBAM	Update Events	Detailed	Message Queue	XML v2007.2	Immediate	DO NOT MODIFY - IQ SUB			Y	Y	Y

For EHMS Road Admin users, the Maintain Subscriptions page opens on the Subscriptions Status tab, which lists all subscriptions configured for your company, based on your currently logged in Mark.

The Subscription Status tab contains the following columns:

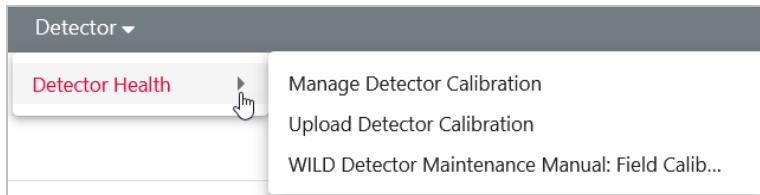
- The first column is a status column that contains either a green  icon indicating that the subscription is active, or a red  icon indicating that the subscription is not active.
- The Event column lists the type of event associated with the subscription.
- The Message Type column provides details regarding the type of event notifications being sent.
- The Data Level column shows whether the level of detail is “Summary” or “Detailed”.
- The Transport column provides the manner of transmission of the notification: either “EMAIL”, “FTP”, or “Message Queue”.
- The Format column provides details regarding the format schema for the layout of the message.
- The Timing column tells when the notifications are sent (this is configured in the Delivery Configuration tab).
- The Population column provides the name of the equipment population (review the Equipment Population tab for additional details about equipment populations).
- The Delivery address provides the address for delivery of notifications. If the transport type is “EMAIL”, the delivery address is an email address. If the transport type is “FTP”, then the delivery address is the name of the FTP server.
- The SSO ID is the profile ID under which the subscription is set up. You can manage this through the My Subscriptions tab or through the Maintain Profiles tab.
- The last three columns (Profile, Address, and Company) provide the Road Admin with insight regarding why a subscription may be active or inactive. If any one of the three columns are marked “N”, the subscription is inactive (i.e., all three columns must be “Y” for the subscription to be active). You can manage these settings on the Maintain Profiles, Delivery Configuration, and Company Subscriptions tabs.

Working with Detectors

Important: You must have the EHMS DH Upload role to see the **Detector** menu item, which is used to perform the detector health tasks described in this section.

EHMS enables detector owners to view and maintain detector health information ([Exhibit 40](#)).

Exhibit 40. Detector Menu



Managing Detector Calibration

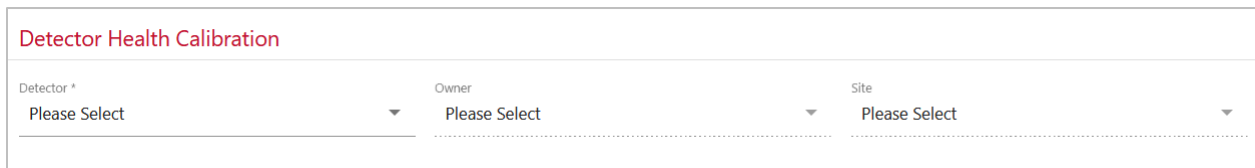
Access to detector event data is limited to the owner and the maintenance party for the equipment referenced in the event (determined by the road mark associated with the user's log on). Managing detector calibration enables users to view and delete detector calibrations.

Note: Only detectors identified by the Inspection Quality (IQ) system are supported.

Use the following procedure to manage detector calibration:

1. From the main menu, select **Detector > Detector Health > Manage Detector Calibration**. The Detector Health Calibration page is displayed.

Exhibit 41. Detector Health Calibration



Note: If you do not have Adobe Acrobat Reader installed on your computer, you can download the reader for free.

2. Select the **Detector** from the drop-down list.
3. Select the owner of the detector from the **Owner** drop-down list.
4. Select the site of the detector from the **Site** drop-down list that you want to view or download. The Detector Health Calibration page displays calibration information.

Exhibit 42. Detector Health Calibration With Calibration Data

Detector Health Calibration

Detector *
WILD

Owner *
RAIL

Site *
RAIL

Total items: 2

Calibration Date	Record Inserted	Calibrated By	Certificate of Calibration	Calibration Data	Load Cell Calibration Certif...	Delete Calibration
07-10-2023	2023-07-10 by: RAIL	RAIL	View	View	View	Delete
07-10-2023	2023-07-10 by: RAIL	RAIL	View	View	View	Delete

30 100 500 1000 5000

5. Select a **View** button in the **Certificate of Calibration**, **Calibration Data**, or **Load Cell Calibration Certificate** column. A PDF of the selected type of certification documentation is displayed.

Uploading Detector Calibration

Use the following procedure to upload detector calibration documentation:

Notes:

- You must be a detector owner to upload detector calibration information.
- Restrict file uploads to a total size of 6MB. Larger files may result in an upload error.

1. Select **Detector > Detector Health > Upload Detector Calibration**. The Detector Health - Upload Calibration page is displayed.

Exhibit 43. Detector Health – Upload Calibration Before Selecting a Detector

Detector Health - Upload Calibration

Detector *
Please Select

Calibration Date

Detector Site
Please Select

Calibrated By

* **Certificate of Calibration:** No file chosen

2. Select the appropriate **Detector** and **Detector Site**. Once selected, the Detector Health – Upload Calibration page is refreshed to display additional input fields ([Exhibit 44](#)).

Exhibit 44. Detector Health – Upload Calibration With WILD Selected

Detector Health - Upload Calibration

Detector *
WILD

Calibration Date *

Detector Site *
[Blurred]

Calibrated By *

* Certificate of Calibration: Choose File No file chosen

* Calibration Data: Choose File No file chosen

* Load Cell Calibration Certificate: Choose File No file chosen

Upload

3. Complete the available described input fields.

- **Detector** – Use the drop-down list to select the type of detector.
- **Detector Site** – Use the drop-down list to select the detector site.
- **Calibration Date** – Enter or select the date the calibration occurred.
- **Calibrated By** – Enter the technician who performed the calibration.
- **Certificate of Calibration** – Attach the actual certificate of calibration by selecting the **Browse** button and mapping to the locally saved file (PDF preferred).
- **Calibration Data** – Attach additional calibration data by selecting the **Browse** button and mapping to the locally saved file (PDF preferred).
- **Load Cell Calibration Certificate** – Attach the actual load cell calibration certificate by selecting the **Browse** button and mapping to the locally saved file (PDF preferred).

4. Once all fields are completed, select the **Upload** button to submit the calibration information. A status message is displayed about the upload attempt.

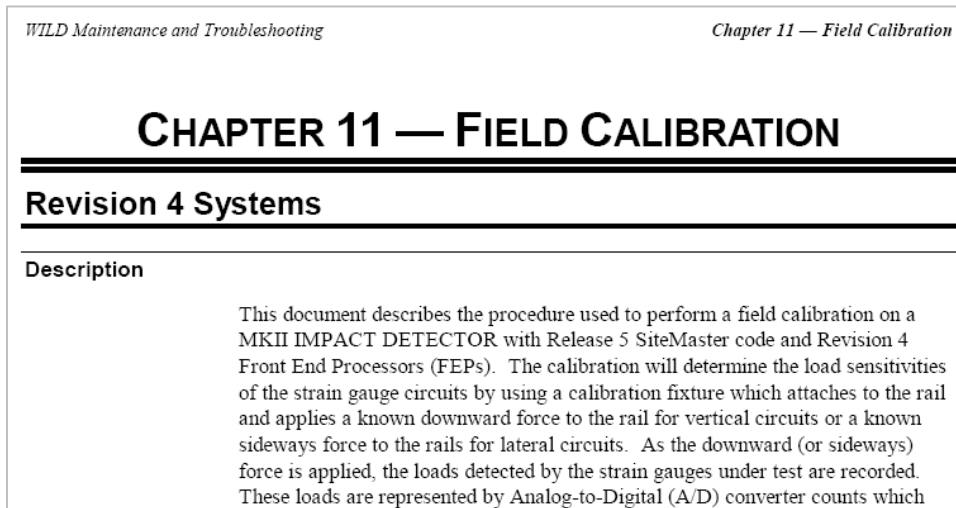
Viewing the Field Calibration Reference

The EHMS application provides access to the Field Calibration chapter of the *WILD Maintenance and Troubleshooting Reference Manual*.

Use the following procedure to view the Calibration Reference:

1. From the main menu, select **Detector > Detector Health > WILD Detector Maintenance Manual: Field Calibration (PDF)**. The chapter is opened as a PDF document in a separate browser tab.

Exhibit 45. WILD Detector Maintenance Manual: Field Calibration (PDF).



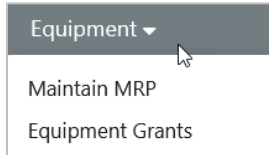
2. Use the tools within the PDF to search, save or print as needed.
3. Return to the EHMS browser tab.

Working with Equipment Maintenance and Grants

Important: To perform the tasks described in this section, your account must have access permissions to the Umler® application and be set up with the appropriate Umler access rights. For detailed information on using Umler, refer to the [Umler User Guide](#).

Use the Equipment Menu to report and update the Equipment Maintenance Party and assign equipment grants through Umler.

Exhibit 46. Equipment Menu



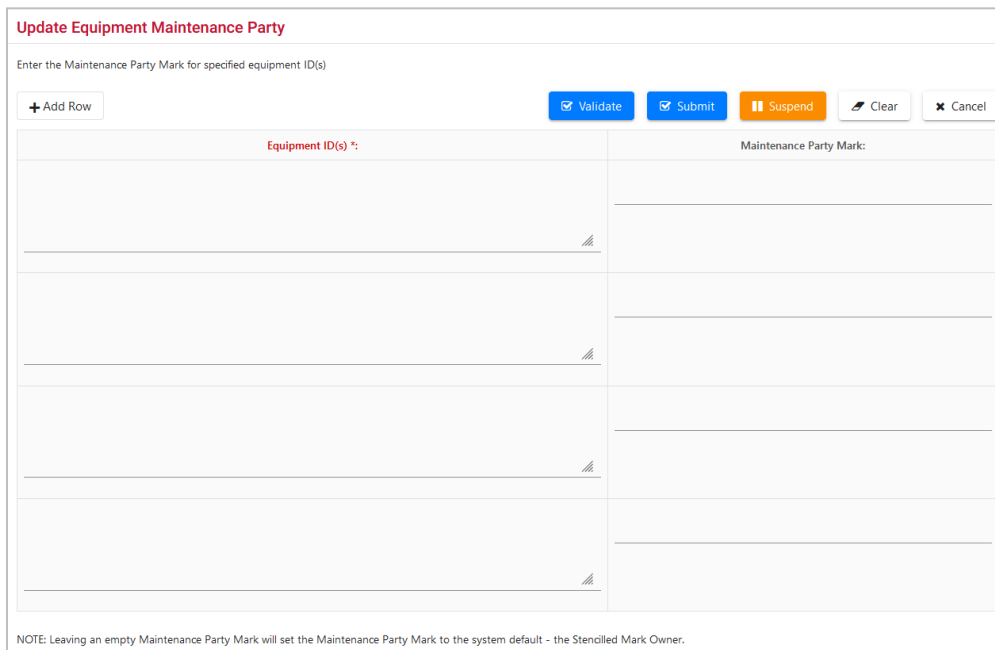
Updating the Equipment Maintenance Party

The Equipment Maintenance Party, which is also known as the Maintenance Responsible Party (MRP), is used to designate a party to receive daily email reports from EHMS when a party other than the stenciled mark owner of the equipment should receive the reports. If the stenciled mark owner should receive the reports for the equipment, the field should remain blank.

Use the following procedure to update the Equipment Maintenance Party:

1. Select **Equipment > Maintain MRP**. The Umler application opens in a separate browser tab displaying the Update Equipment Maintenance Party page.

Exhibit 47. Umler – Update Equipment Maintenance Party

A screenshot of the "Update Equipment Maintenance Party" page in the Umler application. The page has a title bar "Update Equipment Maintenance Party" and a subtitle "Enter the Maintenance Party Mark for specified equipment ID(s)". Below the subtitle is a table with two columns: "Equipment ID(s) *" and "Maintenance Party Mark:". The table has four rows, each with a small icon in the bottom right corner of the "Equipment ID(s)" cell. Above the table are several buttons: "+ Add Row", "Validate", "Submit", "Suspend", "Clear", and "Cancel". At the bottom of the page, there is a note: "NOTE: Leaving an empty Maintenance Party Mark will set the Maintenance Party Mark to the system default - the Stencilled Mark Owner."

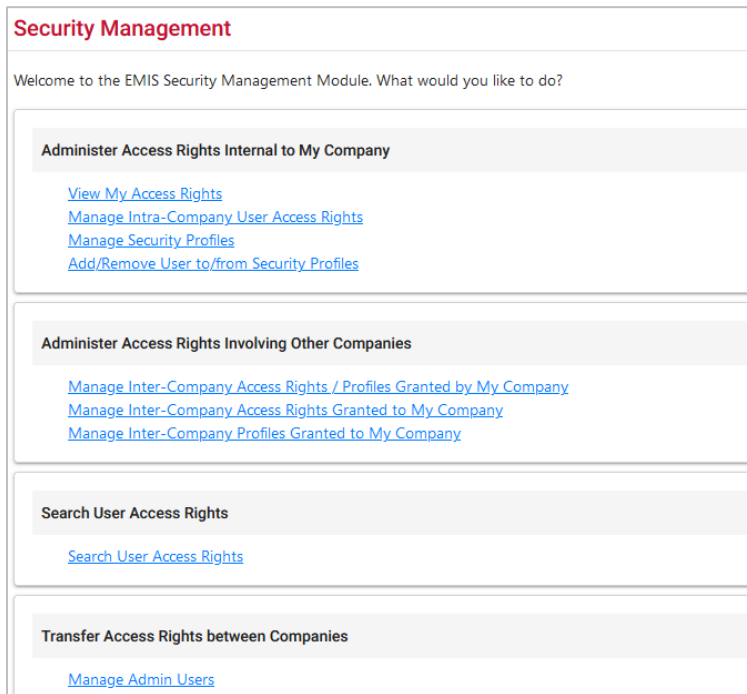
2. Complete the available input fields and select **Submit** to update the entry. Refer to the [Umler User Guide](#) for information about the Update Equipment Maintenance Party function.
3. Return to the EHMS browser tab.

Assigning Equipment Grants

Use the following procedure to assign equipment grants:

1. From the main menu, select **Equipment > Equipment Grants**. The Umler application opens in a separate browser tab displaying the Security Management page.

Exhibit 48. Umler – Security Management

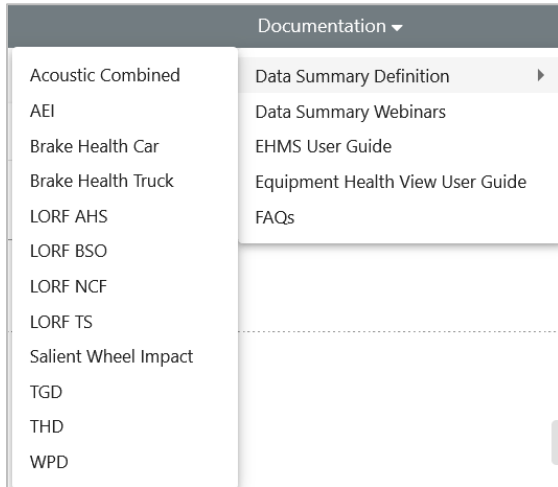


2. Complete the steps to assign equipment grants. Refer to the [Umler User Guide](#) for information about Administrator Access Rights.
3. Return to the EHMS browser tab.

Accessing EHMS Support Documentation

You can select the Documentation menu to access support documentation. The Documentation menu provides access to the Asset Health Data Summary Definitions and other helpful EHMS documentation.

Exhibit 49. Documentation Menu



Data Summary Definition

Select **Documentation > Data Summary Definition** to download or view specific reference information about several different types of data summaries.

Data Summary Webinars

Select **Documentation > Data Summary Webinars** to go to the [Asset Health Data Summaries](#) web page, where you can download webinars about several different types of data summaries.

EHMS User Guide

Access the [EHMS User Guide](#) (this document) through the [EHMS page](#) on <https://public.railinc.com> or in the EHMS application:

From the main menu, select **Documentation > EHMS User Guide**.

Asset Health Data Summaries FAQs

Select **Documentation > FAQs** to view the [Asset Health Data Summaries Frequently Asked Questions](#).

Notification Flow Chart

EHMS notifications are described in [Working with Notification Subscriptions](#). To view information about EHMS notifications processing, go to the [Equipment Health Management System product page](#) and select [EHMS Notification Flow Chart](#) in the **Related Support Documents** section.

EHMS Message Format

The EHMS message layout guide is used for notifications (see [Working with Notification Subscriptions](#)). This Excel file shows the format of notification messages and the initial load file.

Download the [EHMS Message Format](#) for the message layout guide with field definitions and lengths.

Note: Tabs at the bottom of the Excel file enable you to view information for different formats.

Exhibit 50. EHMS Message Format

Record Header Format						
No	Data Element Name	Start Position	Length	Alpha / Numeric	Definition	Possible Value/Range
1	Record Type	1	2	CHAR	The type of record	AE, EV, CE, CC, CR, CN
2	Version	3	4	NUMBER	The version number of the record	1801 (for 2007 format)
3	Sub Type	7	2	CHAR	A more specific type / subtype of the record CE might be R or IN (Repair or Inspection)	R, IN, CT, CI, AT, AL, AI, AJ, CJ
Event (EV) / Closure Event (CE) / Alertable Event (AE)						
No	Data Element Name	Start Position	Length	Alpha / Numeric	Definition	Possible Value/Range
1	Record Header	1	8	HEADER	See Above	EV0001 (see above)
2	Alert Type	9	15	CHAR	Defines Alert type	WILD, THD, TPDL, TPDG, ABD
3	Equipment Mark	24	4	CHAR	Road Mark	
4	Equipment Number	28	10	NUMBER	The equipment number	
5	Source System Date	38	14	NUMBER	TTCI EVENT DATE	
6	Event Date	52	14	NUMBER	Train Date/ Repair Date	
7	EHMS Received Date	66	14	NUMBER	Date Event Processing in EHMS	
8	Train Speed	80	6.2	NUMBER	Average speed of the train at the site	0.00-999.99
9	Site Name	86	25	CHAR	Detector location	
10	Lead End	111	1	CHAR	The truck designation (A, B or C)	A-B
11	Percent Load	112	5.2	NUMBER	Percent load calculated from EMIS/Umler data and calculated vehicle weight	0-2
12	Measurement Type	117	15	CHAR	Initialized measurement type	SWIMV, LAHRLV, HINDX, GROWLER, TGFSF, ...
13	Measurement Value	132	10.2	NUMBER	The actual measurement value	
14	Direction	142	1	CHAR		N, S, E, W
15	SPLC	143	9	CHAR	Where repaired/inspected	(any valid SPLC)
16	AAR Job Code	152	4	CHAR		1000-9999 (any crb job code)
17	Why Made Code	156	2	CHAR		01-99
18	Inspection Code	158	2	CHAR	defines repair/inspection reason codes	MH, MR, MN, MI ...
19	Explanation	160	255	CHAR	inspection explanation (free form text)	
20	Reporting System	415	10	CHAR	Which system reported the event to EHMS	TTCI, ...

Reviewing EHMS Frequently Asked Questions (FAQs)

General

What reference material is recommended for EHMS users?

The *EHMS User's Guide* (this document) helps users understand how to report repairs or inspections to EHMS and provides other EHMS-related information. Additional EHMS reference material is located on Railinc's EHMS User Group Site. Contact the Railinc Customer Success Center (see [Accessing the Railinc Customer Success Center](#)) to request access to this site.

Refer to rules 3, 36, 37, 41, 43, 44, 63, and 94 in the *AAR Interchange Rules* for more information on EHMS-related questions. The rules may be purchased by visiting the AAR website at <http://www.aarpublications.com/>.

How can I upload calibration records to EHMS?

These records must be uploaded by the owner, and the user id must have the permission **EHMS DH Upload**. The DH Upload option allows the user to upload calibration information required per industry rules (refer to the *Field Manual of the AAR Interchange Rules*).

DH Upload access is only approved for customers who own detectors. The owner can authorize others to upload calibration records by granting DH Upload access or by letter of authorization (LOA) to Railinc.

How do I report a CID?

EHMS users have the option to report component IDs via the Alert Closure Reporting page. The component ID field is displayed when reporting repairs ([Exhibit 12](#)). For more information on component IDs, refer to www.railinc.com.

Alerts and Data Summaries

What are alerts?

Wayside detectors are located throughout North America. These detectors provide readings on various components of rail cars as they pass by. These readings are accumulated in the ATSI/EHMS central database and when an established alert threshold is recorded that event is passed to EHMS for action.

Note: The ATSI committee identifies industry component alert conditions after considerable research and evaluation of detector data.

For example, consider the first alert incorporated into EHMS -- the Wheel Impact Load Detector (WILD) alert. It is based on conditions under *AAR Field Manual* Rule 41 and with wheels exhibiting high kip conditions.

The *AAR Field Manual* identifies two situations (levels) of concern: wheels from 80 to less than 90 kips and wheels above 90 kips. The ATSI, and therefore EHMS, added two additional notification levels: wheels above 65 but less than 80 kips and wheels above 140 kips.

The lower level of between 65 and 80 is intended to give car owners an opportunity to bring the car to a shop for inspection and/or repair before the wheel reaches an AAR A1 level. The addition of the 140+ kip level was intended to help the industry identify the cars with the worst conditions and prioritize their remediation.

See [More about Defects and Alerts](#) for detailed information about alert levels and criteria.

How are alerts communicated?

EHMS alerts are available for viewing through the EHMS system and the Equipment Health View. In addition, alert notifications can be sent to subscribers via email, ftp, and MQ technologies. For more information about notifications, please contact csc@railinc.com.

What are kip readings?

Kip readings provide useful information on the wear of the components-truck and wheel. The readings are captured by the Inspection Quality (IQ) system and subsequently feed to EHMS once a unit has a component that exceeds the defined levels.

A kip is a force having both value and direction (in a particular direction, such as vertically). This is the concept for WILDs). An example is the wheel has a vertical force of 35 kips with a peak vertical force of 60 kips. The value of a kip is 1 kip = 1000 pounds.

Who can see detailed event, detector reading and alert closure information?

Alert data and the alert state (open or closed) are always available to all EHMS users. For all other data, EHMS utilizes Umler to validate ownership and maintenance before displaying detailed alert information.

For example, to have access to the details of the exact kip reading for a WILD alert, you (your company Mark) needs to be listed in Umler as one (or more) of the following: the Umler Owner, the Stenciled Mark Owner, the Lessee, or the Maintenance Responsible Party (MRP).

Detailed alert closure information is similarly restricted. However, the party performing or reporting the repair always has access to their closure reports.

How does an alert get closed?

Closing alerts for components is accomplished by:

- Reporting repairs with a Job Code and a Why Made Code causes EHMS to close any alerts related to the Job Code and component/location reported.
- Reporting an inspection (or reason for closure) of the alert.

Repairs and/or inspections are received and processed by EHMS from many sources:

1. EHMS website.
2. EHMS Web Services.
3. Messaging via MQ.

Reviewing EHMS Frequently Asked Questions (FAQs)

4. Car Repair Billing via a reconciliation process that occurs when CRB files are submitted to Railinc.
5. Approved data summary autoclose processes. In some industry approved cases, when data summaries are closed on a component due to good reads, then any corresponding alerts on that component are also closed.

Initially the ‘related alert’ process was limited to WILD (high kip) alerts, so EHMS would simply close an alert on the opposite wheel, if one existed. EHMS now has the ability to tie together many related components. For example, reporting a wheel change has the potential to close open bearing alerts on that wheel set in addition to still closing the alert on the opposite wheel.

How do data summaries get closed?

Data summaries associated with readings from TADS, RailBAM, and THD detectors can only be closed through autoclose – automatic closure achieved through several consecutive good readings.

Note: Brake Health Car Level, Brake Health Truck Level, and Line-of-Road Failure_No Cause Found data summaries currently do not close with a repair, inspection, or autoclose process. Line-of-Road Failure_Air Hose Separation and Automatic Equipment Identification data summaries currently do not autoclose.

Salient Wheel Impact data summaries can either be closed manually when an appropriate repair or inspection is reported, or they may also be closed through autoclose. [Exhibit 51](#) shows the autoclose criteria for the different data summary types.

Exhibit 51. Data Summary Autoclose Criteria

Data Summary Type	Autoclose Criteria
Acoustic_Combined	RailBAM - Five sequential reads without problem (for any open data summaries on a bearing). TADS - Six sequential reads without problem (for any open data summaries on a bearing).
AEI_TAG	Four sequential reads without a problem. A problem is defined as any defect such as: <ul style="list-style-type: none"> • Tag status is L (Left tag missing) • Tag status is R (Tight tag missing) • Tag status is M (tag mismatch) • Data discrepancies such as: <ul style="list-style-type: none"> – Equipment does not exist in Umler – Equipment type does not match with Umler – Axle counts do not match with Umler
Brake Health Car Level	There is currently no autoclose method.
Brake Health Truck Level	There is currently no autoclose method.

Reviewing EHMS Frequently Asked Questions (FAQs)

Data Summary Type	Autoclose Criteria
Line-of-Road Failure_Air Hose Separation	There is currently no autoclose method.
Line-of-Road Failure_Brake System/BrakeOther	There is currently no autoclose method.
Line-of-Road Failure_No Cause Found	There is currently no autoclose method.
Line-of-Road Failure_Train Separation	There is currently no autoclose method.
Salient Wheel Impact	Three sequential WILD reads less than 20 Dynamic, less than 1.5 ratio, and train speed greater than 20 mph for any open data summary on a wheel.
TRUCK_GMTRY	Three sequential TGD reads of absolute value of angleOfAttack < 1mrad AND absolute value of trackingPosition < 10mm.
THD	Twelve consecutive truck hunting index reads < 0.09, four of which are lightly loaded < 40 tons.
Wheel Profile Detector Data Summary	There is currently no autoclose method.

How do alerts get to IQ and EHMS?

Wayside detectors are located along tracks and capture readings which are sent to IQ for storage and analysis. Once IQ has determined an alert should be opened for a component of a unit, that information is transmitted to EHMS. EHMS displays the alert data to the industry and displays repair or inspection data that was submitted by user for the unit.

EHMS displays the following information for alerts:

Note: The information in bold is only visible to “Umler Interested Parties” (i.e., Umler owner, stencil mark owner, lessee, or maintenance responsible party). A message that some information has been “suppressed” due to security considerations indicates the customer is not identified in Umler as an Umler interested party.

- Car Initial
- Car Number
- Alert Level and Type
- Closure Date
- **Detector Location**
- **Detector Reading (kip reading)**
- **Train Date-the date when the detector captured the reading and is referred to as the open alert date in EHMS**
- **Event Date- the date when the event was received that corresponds to the opened alert**
- **Repair/Inspection data- Performer, Job Code, Inspection, Standard Point Location Code (SPLC)**

Repairs and Inspections

What is the difference between reporting a ‘repair’ and reporting an ‘inspection’?

In the Early Warning (EW) system an “inspection” referred to any method used to remediate an open maintenance advisory. Repairs and inspections were all reported via an “Inspection Code.”

EHMS makes a distinction between actual reported repairs (those that include a Job Code) and reported inspections. The difference between the two methods is that when an actual repair is reported to EHMS, the system attempts to locate and close any open alerts related to the reported repair.

Reporting an “inspection” (referred to as a “reason code” in EHMS) does **NOT** close alerts on related components. Each component under alert would need to have a specific reason (inspection) reported individually to close that alert.

One of the fundamental assumptions in EHMS is that *individual* wheels are not changed, rather wheel sets are changed. In this way EHMS is able to relate the various components associated with wheel set repairs and identify any additional alerts that can be closed.

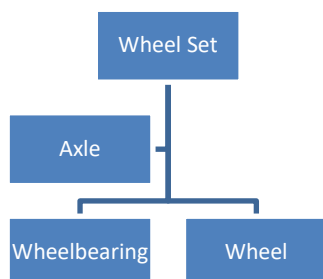
Another common confusion is that any repair against a component closes that alert. This is especially true for Truck Alerts. Repairs do NOT close THD, TPD, TPDG, or LORFNCF alerts—these can only be remediated through an inspection. Although EHMS allows repairs to be entered at any time, these may not close an alert. It is up to the reporter of a repair/inspection to ensure that they have properly closed an alert if that is their intention.

What Job Code or AAR Rule should I report a repair under?

Indicating the replacement of a wheel set or the replacement of a wheel has the same net result. Any associated alerts for that axle are closed (alerts currently associated include wheel, axle or bearing alerts). As EHMS recognizes the indication of a wheel change, it infers that the entire wheel set was changed.

From a “why made” standpoint with respect to wheels, rule 44 has no provision for the 61 and 65 codes that relate to high kip wheels. The only official Why Made Code available under rule 44 is 09.

Many companies report the actual repair (as in a wheel set change); many others report a wheel repair with the appropriate 61 or 65 Why Made Code. In either case, EHMS locates and closes any alerts that have been associated with those components in the hierarchy.



Indicating a repair to any of the components in the hierarchy results in all alerts on related components being closed as well.

Learning about Inspection Reason Codes

This section provides listings of codes and inspection types used in EHMS as possible closure reason codes. These codes appear in alert and data summary closures, and for closures reported in notification messages.

[Exhibit 52](#) identifies inspection reason codes, [Exhibit 53](#) identifies alert inspection types and reasons, and [Exhibit 54](#) lists autoclose reasons for data summaries that can be autoclosed.

Exhibit 52. Inspection Reason Codes

Reason Code	Description
AR	LORF AHS Repaired and Released (LORF_AHS_REPAIR)
AX	RailBAM Data Summary autoclose
BX	TADS Data Summary autoclose
CX	THD Data Summary autoclose
EX	AEI_TAG Data Summary autoclose
FX	TGD DS Autoclose
LR	Repaired and Released (LORF_NCF_REPAIR) (Only used with LORF_NCF data summaries)
ME	Car inspected and sent to Home Shop
MH	Car repaired and returned to service
MI	Deleted in Umler
MK	Autoclose Alert Process
MN	Incorrectly added
MR	Car inspected and returned to service
MU	Registered in Umler
MX	Data Summary Autoclose
THD_INSPECTION	Truck Hunting Inspection and Release
TPD1_Inspection	Remediation of GFS alert
TPD2_Inspection	TPD LAHRLV

[Exhibit 53](#) identifies alert inspection types and reasons.

Learning about Inspection Reason Codes

Exhibit 53. Alert Inspection Types and Reasons

Inspection Type	Reason
ABD	<ul style="list-style-type: none"> • MI – Deleted in Umler • MK – Autoclose alert process • MN – Incorrectly added • MR – Car inspected and returned to service
AEIMISMATCH	<ul style="list-style-type: none"> • MI – Deleted in Umler • MK – Autoclose alert process • MN – Incorrectly added
AEITAG	<ul style="list-style-type: none"> • MI – Deleted in Umler • MK – Autoclose alert process • MN – Incorrectly added
AEIUMLER	<ul style="list-style-type: none"> • MI – Deleted in Umler • MK – Autoclose alert process • MN – Incorrectly added • MU – Registered in Umler
LORFAHS	<ul style="list-style-type: none"> • AR – Car repaired and released • MI – Deleted in Umler • MK – Autoclose alert process
LORFNCF	<ul style="list-style-type: none"> • LR – Car repaired and returned to service • MI – Deleted in Umler • MK – Autoclose alert process
MVECOUPLER	<ul style="list-style-type: none"> • MH – Car repaired and returned to service • MI – Deleted in Umler • MN – Incorrectly added • MR – Car inspected and returned to service
MVFCOUPLER	<ul style="list-style-type: none"> • MH – Car repaired and returned to service • MI – Deleted in Umler • MN – Incorrectly added • MR – Car inspected and returned to service
THD	<ul style="list-style-type: none"> • ME – Car inspected and sent to home shop • MH – Car repaired and returned to service • MI – Deleted in Umler • MK – Autoclose alert process • MN – Incorrectly added • MR – Car inspected and returned to service • Truck Hunting Inspection and Release
TPDG & TPD	<ul style="list-style-type: none"> • ME – Car inspected and sent to home shop • MH – Car repaired and returned to service • MI – Deleted in Umler • MN – Incorrectly added • MR – Car inspected and returned to service • Remediation of GFS alert
WILD	<ul style="list-style-type: none"> • MH – Car repaired and returned to service • MI – Deleted in Umler • MK – Autoclose alert process • MN – Incorrectly added • MR – Car inspected and returned to service

Learning about Inspection Reason Codes

Inspection Type	Reason
WILD_WPD	<ul style="list-style-type: none">• MH – Car repaired and returned to service• MI – Deleted in Umler• MK – Autoclose alert process• MN – Incorrectly added• MR – Car inspected and returned to service
WPDAXLE	<ul style="list-style-type: none">• MH – Car repaired and returned to service• MI – Deleted in Umler• MK – Autoclose alert process• MN – Incorrectly added• MR – Car inspected and returned to service
WPDWHEEL	<ul style="list-style-type: none">• MH – Car repaired and returned to service• MI – Deleted in Umler• MK – Autoclose alert process• MN – Incorrectly added• MR – Car inspected and returned to service

Learning about Inspection Reason Codes

[Exhibit 54](#) lists autoclose reasons for data summaries that can be autoclosed.

Exhibit 54. Data Summary Autoclose Reasons

Inspection Type	Reason
AEI_TAG	<ul style="list-style-type: none"> • EX – Data Summary Autoclose • MI – Deleted in Umler • MN – Incorrectly added
Brake Health Car Level	<ul style="list-style-type: none"> • Currently does not autoclose, and does not close with a repair or inspection
Brake Health Truck Level	<ul style="list-style-type: none"> • Currently does not autoclose, and does not close with a repair or inspection
Line-of-Road Failure_Air Hose Separation	<ul style="list-style-type: none"> • Currently does not autoclose
Line-of-Road Failure_No Cause Found	<ul style="list-style-type: none"> • Currently does not autoclose, and does not close with a repair or inspection
Line-of-Road Failure_No Cause Found	<ul style="list-style-type: none"> • Currently does not autoclose
Line-of-Road Failure_No Cause Found	<ul style="list-style-type: none"> • Currently does not autoclose
RailBAM	<ul style="list-style-type: none"> • AX – Data Summary Autoclose • MI – Deleted in Umler • MN – Incorrectly added
Salient_Wheel_Impact	<ul style="list-style-type: none"> • MH – Car repaired and returned to service • MN – Incorrectly added • MX – Data Summary Autoclose
TADS	<ul style="list-style-type: none"> • BX – Data Summary Autoclose • MI – Deleted in Umler • MN – Incorrectly added
TRUCK_GMTRY	<ul style="list-style-type: none"> • FX – TGD DS Autoclose • MI – Deleted in Umler • MN – Incorrectly added
THD	<ul style="list-style-type: none"> • CX – Data Summary Autoclose • MI – Deleted in Umler • MN – Incorrectly added
Wheel Profile Detector Data Summary	<ul style="list-style-type: none"> • Currently does not autoclose

Learning about Job Codes and Why Made Codes

Rule	Job Code	Why Made Code	Description
Rule 3 Testing Air Brakes	1128	24	Attention Required
Rule 36 Roller bearings	2814- 2848	02	Broken
		07	Rule 36
Rule 36 Roller bearings	2861- 2867	03	Missing
		04	Defective
		05	Bent
		08	Wrong (Not Standard to Car)
		07	Rule 36
		11	Associated Repair
		25	Owner's Request
		31	Fire or Heat Damage per Rule 95
		32	Submerged per Rule 95
		33	Derailment damage per Rule 95
		34	Unfair usage damage per Rule 95
		35	Submerged per Rule 99
		50	Roller bearing overheated
		92	Loose or Missing Cap Screw
		93	Seals loose or cocked out of position
		94	Welding arcing
		95	Roller bearing fused due to overheating
97	Loose backing ring		
99	Damaged seals		
Rule 41	3001- 3124	03	Missing
		08	Wrong (Not Standard to Car)
		11	Associated Repair
		23	Government regulatory requirement
		25	Owner's Request
		31	Fire or Heat Damage per Rule 95
		60	Flange Thin
		61	Rule 41
		62	Flange vertical
		63	Rule 41
		64	Flange high
		65	High impact wheel as detected by wheel impact detector
		66	Flange cracked or broken
		67	Wheel out-of-round detected by gage

Learning about Job Codes and Why Made Codes

Rule	Job Code	Why Made Code	Description
		68	Rim cracked or broken
		69	Thermal crack extending into plate
		71	Rim shattered
		72	Rim spread
		73	Rim thin
		74	Thermal cracks
		75	Tread shelled
		76	Tread built-up
		77	Tread grooved
		78	Tread skid flat
		80	Scrape, dent or gouge anywhere in the wheel surface more than 1/8 inch deep
		81	Wheel out of gauge
		83	Wheel with cracked or broken plate
		84	Wheel with holes in plate
		85	Wheel loose
		89	Subsurface defect
		90	Mate wheel scrapped
		91	Wrought steel wheel
98	Wheel not meeting reapplication limits		
Rule 43 Axles	3250-3280	03	Missing
		08	Wrong (Not Standard to Car)
		11	Associated Repair
		25	Owner's Request
		31	Fire or Heat Damage per Rule 95
		50	Roller bearing overheated
		54	Axle broken or cracked (cold)
		55	Axle damaged between wheel seats 1/8 inch or deeper
		56	Axle with evidence of welding
		59	Axle bent
		95	Roller bearing fused due to overheating
Rule 44	3328	09	Wheel Set Change - Account Repairs
	3329	09	Wheel Set Change - Account Repairs
	3333	09	Wheel Set Change - Account Repairs
	3334	09	Wheel Set Change - Account Repairs
	3336-3343	09	Wheel Set Change - Account Repairs
	1842	25	Brake Shoe Change – Owner's Request
	1843	25	Brake Shoe Change – Owner's Request
		02	Broken
		03	Missing

Learning about Job Codes and Why Made Codes

Rule	Job Code	Why Made Code	Description
Rule 63	4340 4342 4348 4350	06	Bent beyond repair
		08	Wrong (not standard to car)
		09	Account repairs
		11	Removed in good condition, account of associated repairs
		25	Owner's request
		31	Fire or heat damage per Rule 95
Rule 63 (continued)		36	AEI tag unreadable account improperly programmed, located or applied
		37	Required AEI fields not in agreement with Umler or AEI Specification data format
		39	AEI tag unreadable account inoperative (not associated with unfair usage)
		42	Improperly located or applied
		45	Wrong size component

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