

 **RAILINC** | **Equipment Health Mgmt System
(EHMS) FAQs**

General

What reference material is recommended for EHMS users?

The [EHMS User Guide](#) 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 Product page](#) and the EHMS User Group 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 many cars can I query at one time?

You can query up to 500 equipment IDs at one time in both Equipment Status or Equipment History. You are able to input individual equipment IDs or a range of equipments (i.e., RAIL1-500).

How are Equipment Status and Equipment History queries different?

Equipment Status only provides open alert and data summary information. It is intended as a quick status check on the current health of the equipment. Equipment History provides information on open and closed alerts and data summaries. Additional data sets like detail events, closures and EA data are also available.

How can I upload calibration records to EHMS?

These records must be uploaded by the owner, and the user ID must have the **EHMS DH Upload** permission. The DH Upload option allows users 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. For more information on reporting component IDs, refer to the [EHMS User Guide](#).

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 EHMS database and when an established alert threshold is recorded, that event is passed to EHMS for action. The AAR committees identify 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. 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.

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 EHMS Notifications, 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 fed 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 events, detector readings, 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) must 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 several sources:

1. EHMS website.
2. EHMS Web Services.
3. Messaging via MQ.
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 wheelset 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 is achieved through several consecutive good readings.

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. The table below shows the autoclose criteria for the different data summary types.

Data Summary Type	Autoclose Criteria
Acoustic_Combined	Five sequential reads without problem (for any open data summaries on a bearing). Note: The sequential reads can be either RailBAM or TADS. Both validated and non-validated readings contribute to auto-close criteria.
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 (Right 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.
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 a user for the unit.

EHMS displays the following information for alerts:

The fields listed below in **bold** are 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** – The 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 Equipment Advisory (EA) system, an inspection refers to any method used to remediate an open advisory. Repairs and inspections are 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.

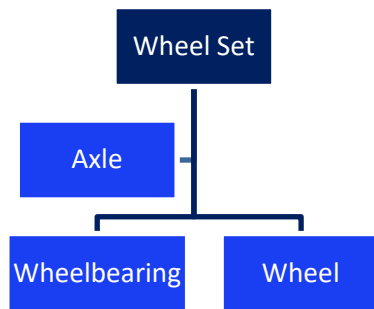
Reporting an inspection (referred to as a “reason code” in EHMS) does not close alerts on related components. Each component under the alert would need to have a specific (inspection) reason reported individually to close the alert.

One of the fundamental assumptions in EHMS is that individual wheels are not changed, rather wheelsets are changed. In this way, EHMS can relate the various components associated with wheelset 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 wheelset 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 wheelset 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 wheelset 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 will be closed as well.



EHMS Notification Subscriptions

What is an EHMS Notification Subscription?

EHMS Notification Subscription helps 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.

Are there fees associated with Notification Subscription?

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 notification subscription.](#) For additional information, check the [Railinc Price list.](#)

In what format are the EHMS Notifications sent out?

EHMS Notifications Subscriptions are available in either XML or flat file format.

What is the delivery method of the EHMS Notifications?

Currently, there are 3 types of delivery methods available to choose from. These are File Transfer Protocol (FTP), IBM Message Queue (MQ), and email delivery methods. Once a particular delivery method is set up, any changes could incur an additional fee.

What if I have questions about EHMS?

Railinc's customer service team is available to answer your questions. For more information about EHMS, contact the Railinc Customer Success Center toll free at (877) 724-5462 or via email at csc@railinc.com.

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