

RAILER RED V60 User Manual

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RAILER RED Help

Basics

Introduction

Welcome to RAILER Remote Entry Database (RED) Version 6.0. RAILER RED is the portable field collection application for use with the RAILER version 6.0 Sustainment Management System (SMS) Enterprise Application. RAILER RED allows inspectors to collect the necessary inventory and inspection information about their track network electronically on a laptop or tablet PC for automatic upload into the RAILER system. This saves the effort of collecting field data on paper, and then entering that data into the RAILER system at a later time. In addition to time and cost savings, the RAILER RED data entry process improves the accuracy of the data collected.

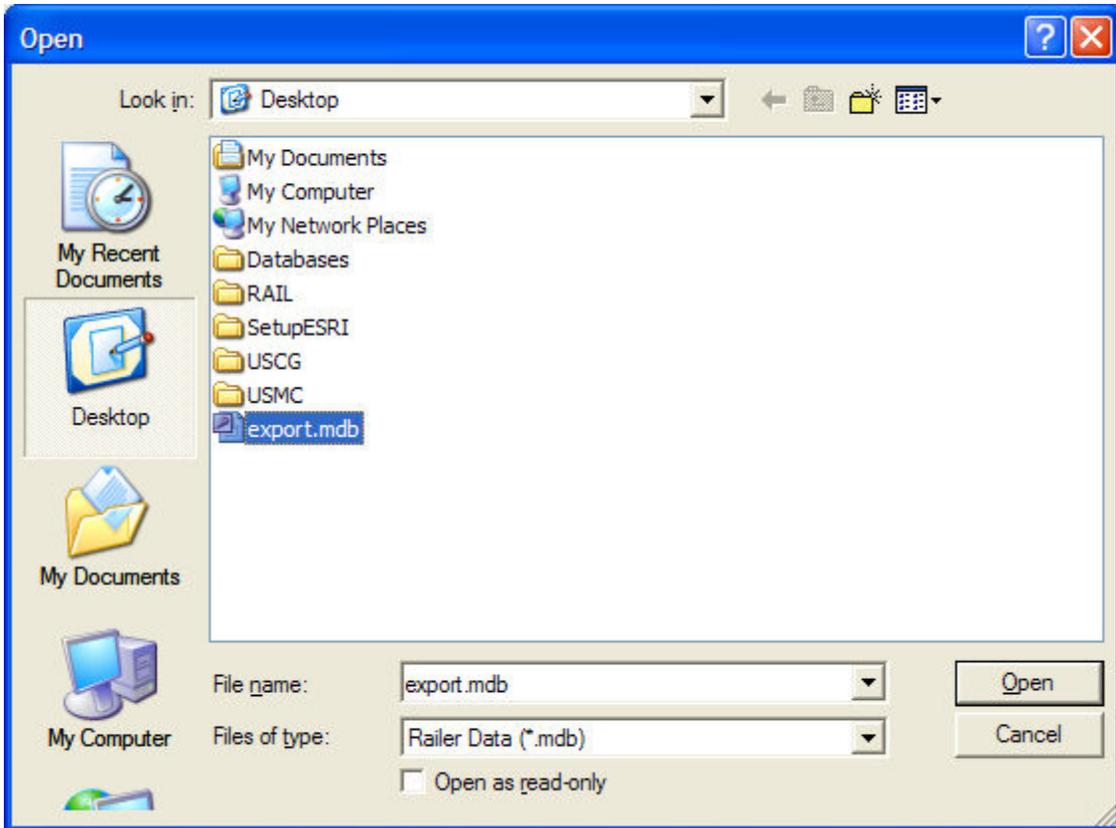
RAILER RED can be used both in the initial implementation of the RAILER SMS Process for collecting inventory and inspection information, as well as in continued re-inspections and inventory updates.



Opening a RAILER RED Database

Before using the RAILER RED program, track information has to be exported from the RAILER SMS Program. This results in a database of track information that the RAILER RED program can open to display to the user. Refer to the RAILER online help contents for step by step instructions on creating this RAILER RED export database.

Once the database is exported and created, it can be transferred to the computer running RAILER RED. Then on the RAILER RED menu, chose **File -> Open** and the following window appears:



Select the RAILER RED database that was created in the export from RAILER, and chose **Open**. The database will be open.

RAILER RED Modes

There are two distinct operating environments in RAILER RED: Inventory Mode and Inspection Mode. When the program is first opened, it always defaults to inventory mode. This allows the user to view, input, and edit inventory related information about the tracks.

Clicking the  **Insp.** button toggles the RAILER RED program to Inspection Mode. Here, the user can view, input, and edit inspection information for each track or track segment. When the user first enters inspection mode, they will be prompted to provide the inspector name, which can be a new or existing inspector. After that, all inspection entered into the system will be saved with that

inspector name. Clicking the  **Inv.** button toggles the user back to the inventory mode of the program.

RAILER RED Menu

RAILER RED has the following menu:

- File: Commands for opening a database, viewing database info, and exiting the program
- Tools: Commands for changing the inspector, and performing Safety Inspections
- Help: Commands for accessing the RAILER RED help contents

RAILER RED Toolbar

RAILER RED has the following toolbar buttons:

- Insp/Inv: Toggles the program between Inspection and Inventory modes
- New: Creates a new record
- Edit: Click to edit an existing record
- Delete: Click to delete the currently selected record
- Copy: Click to copy the currently selected record
- Comments: Allows users to put in additional explanatory comments about a record
- Save: When the user is adding or editing a record, this saves the addition or edits
- Cancel: When the user is adding or editing a record, this closes the record without saving the addition or edits
- List: When in inspection model, this button brings up a list of inventory items to be inspected and/or past inspection defects for the track or segment
- W.O. Items: When in inspection mode for ties or turnouts, this button allows the user to input the location of a tie/turnout defect, as well as change condition level or denote a work order

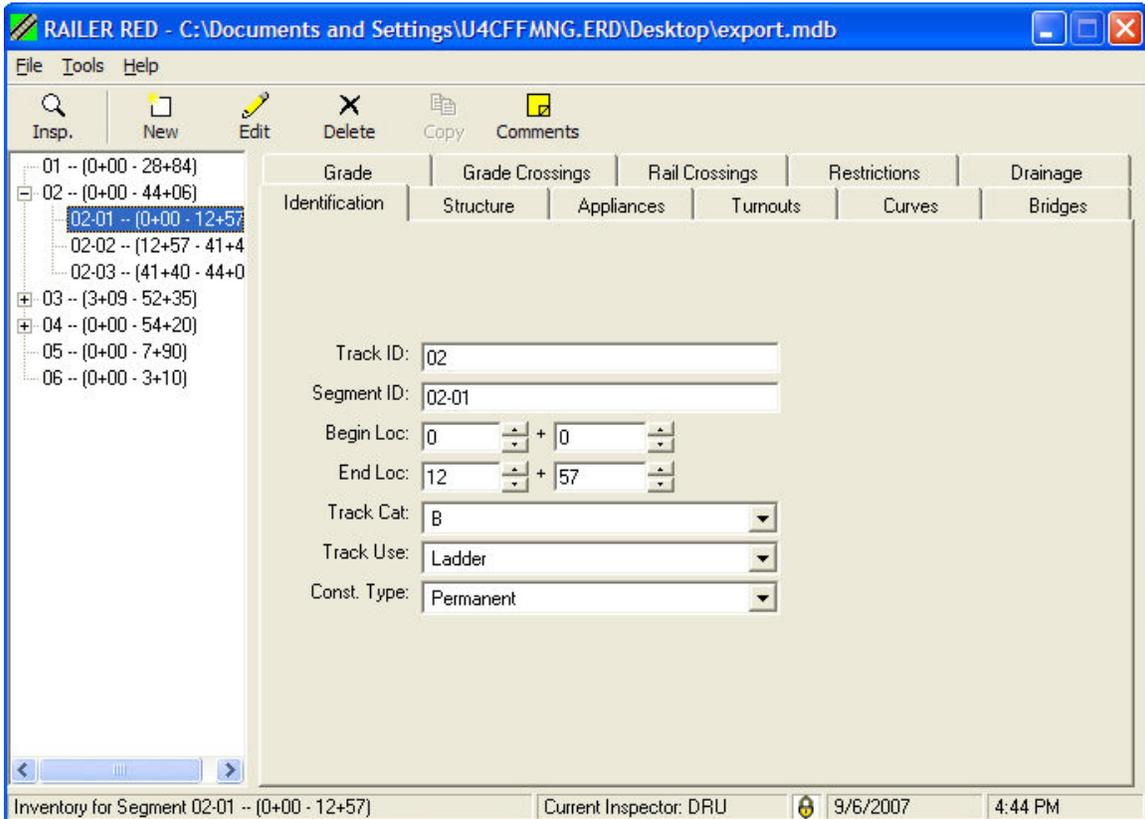
Inventory

Network Inventory

When the RAILER database is exported to RAILER RED, it will display the tracks and track segments that have been exported from RAILER. It is recommended that all tracks and segments be set up in RAILER prior to exporting to RAILER RED for inventory and inspection data collection. Those tracks will then be displayed on the inventory tree on the left as in the figure below. If a track has multiple segments, clicking the plus [+] sign next to the track displays those segments. Note that while the program allows the user to select and highlight both tracks and segments in inventory mode, it will only allow the user to add or

edit inventory records when the track is selected. This is because inventory information is associated with each track, not its individual segments.

While in RAILER RED, additional tracks can be added and segments created by selecting the Identification tab and clicking the New toolbar button. This tab also allows the user to view and edit track and segment attribute information.



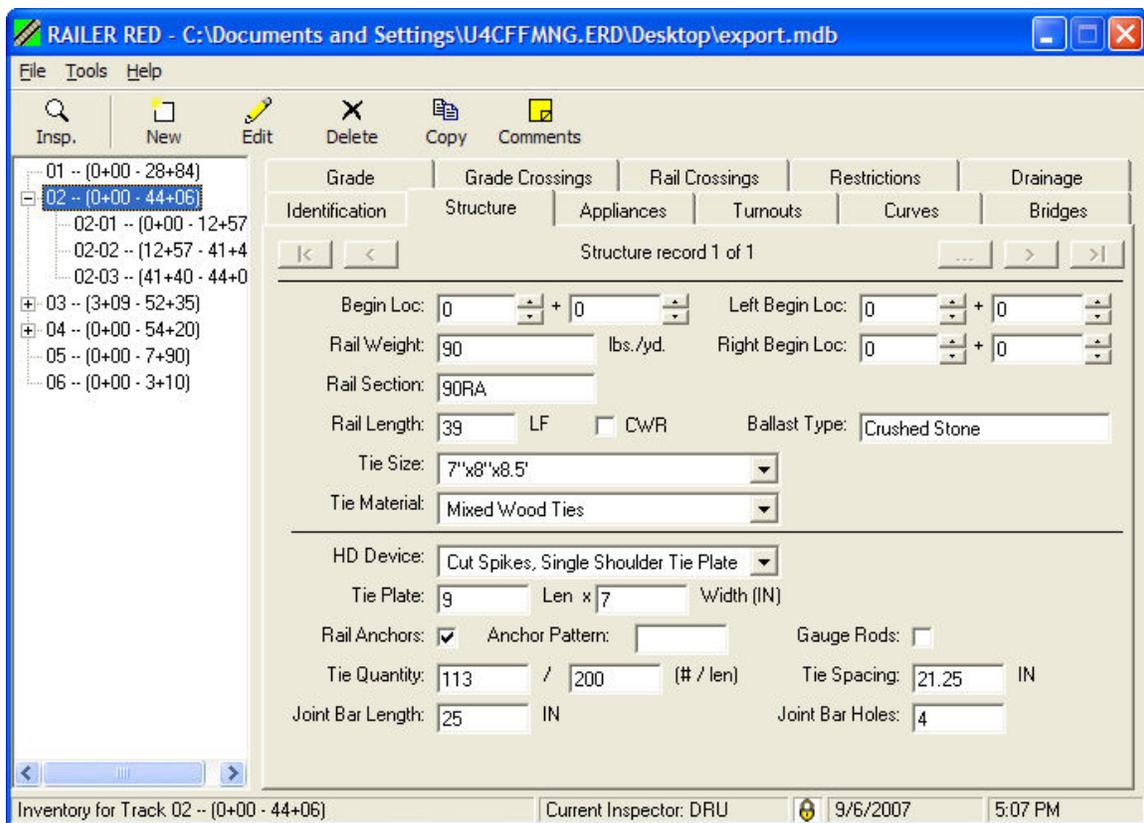
Track Inventory

After the tracks and/or segments have been entered, the user can begin adding the inventory items associated with the track. These inventory items consist of the following and have a separate tab in the inventory mode for each:

- Structure: Information about the rail weight, section, length, Tie Size and Material, Ballast Type, Hold Down Devices, Tie Plates, etc, including where each structure change begins
- Appliances: Records about the type and location of track appliances such as derails, wheel stops, and car bumpers
- Turnouts: Records about the type and location, and other attribute data about turnouts
- Curves: Records about the boundary locations and geometry for curves
- Bridges: Records about the location and type of railroad bridges

- Grade: Records about the boundary locations and % of horizontal grades
- Grade Crossings: Records about the location, type, and material for vehicle grade crossings
- Rail Crossings: Records about the location and type of rail crossings
- Restrictions: Records about track restrictions and clearance issues
- Drainage: Records about the location and type of drain items such as culverts, pipes and ditches.

When inputting inventory information, the user will highlight on the tree which track they are on. All inventory records will be associated with the highlighted track. **Note:** Inventory is conducted at the Track level. No inventory items can be entered or edited at the Segment level. At the Segment level, inventory is Read-Only. The user can then enter a new inventory record by selecting the appropriate tab, and clicking the **New** button.



After multiple inventory items for a given tab have been created, the user can use the < and > buttons to scroll through the records. When an inventory record is displayed as the active record, the user can edit, delete, or copy that existing record. The copy feature is an efficient tool to use when many inventory records are nearly identical, and the user only has to change a field or two, versus entering all the fields in each time.

Inspection

Detailed Inspection

The Detailed Inspection mode in RAILER RED allows the user to record track related defects to be uploaded and stored by the RAILER SMS system. These defects are used to determine condition levels and standard operating restrictions for the track network. Track inspection always occurs at the segment level, so if a track has multiple segments, an individual segment has to be selected. All recorded defects are associated with that segment that is highlighted in the tree. If a track is not segmented, the user may select the track itself to record inspection defects.

General Detailed Inspection Information

When the user first enters the inspection mode, it prompts for the inspector's name. All inspection records entered will then be tagged with that name. To change the inspector, the user can go to the **Tools** menu and chose **Inspectors...**

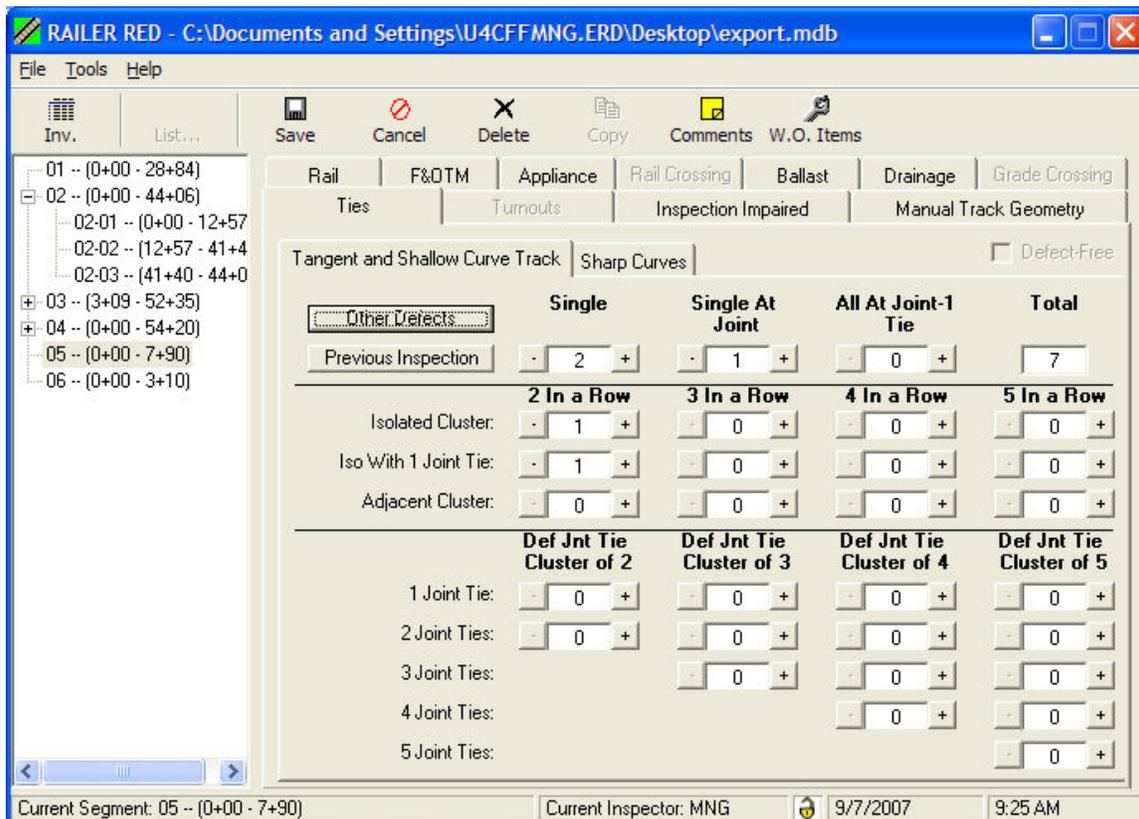
The program also internally appends the inspection date to each inspection record automatically, to keep a record of when each track or segment was last inspected. When a users enters a new inspection, that inspection record remains the active current inspection for period of 30 days after the initial inspection date. During this time, all defects associated with this current inspection can be viewed, edited, and updated. After this 30 day period, however, the inspection record becomes "historic" and are no longer displayed for the current view. Instead, any defects that are added are associated with a new inspection record.

When a defect is entered, the program automatically determines the condition standard that is applicable based on the governing track standard that is set in the RAILER database. This will be displayed to the user on the screen, and if a situation warrants a lowering of the standard, the inspector can manually edit this field from the drop list. Most defects recorded also require a quantity to be entered. this is used to determine the extent of the defect adversely affecting the track. A quantity can be entered in directly to the Quantity field. Alternatively, the length and density of track inspected can be entered, and the program will calculate the quantity using this information. Note that when entering a defect that affects a length of track, the Station location denotes the beginning of where that defect occurs.

Finally, if a segment has a component, such as ties, rail, ballast, etc., that is defect free (ie. there are no identified defects) the inspector should check the **Defect Free** box in the upper right hand corner to denote that the segment was inspected.

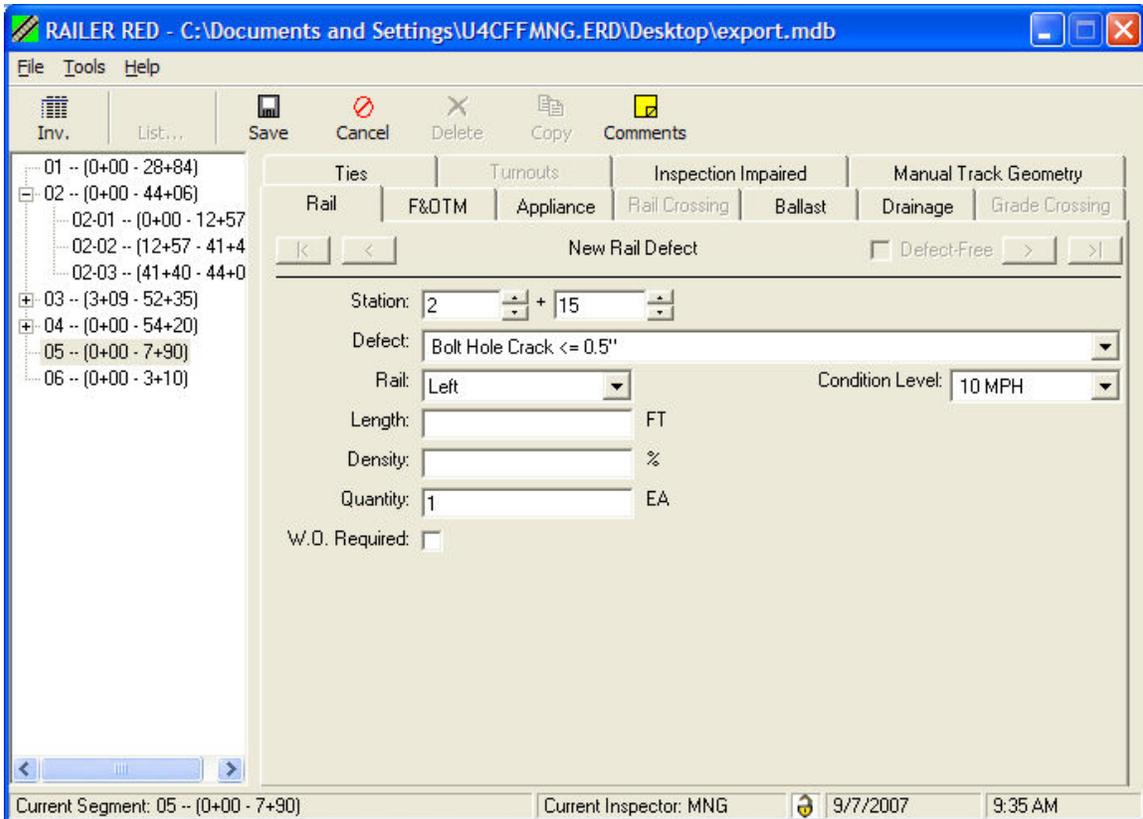
Tie Inspection

The Ties tab is used to keep a tally of tie defects. This keeps track of both single and defective tie clusters, as well as joint tie defects. In addition, the **Other Defects** button allows the user to record missing and improperly positioned (Skewed) ties. The total field in the upper right keeps a tally of total defective ties.



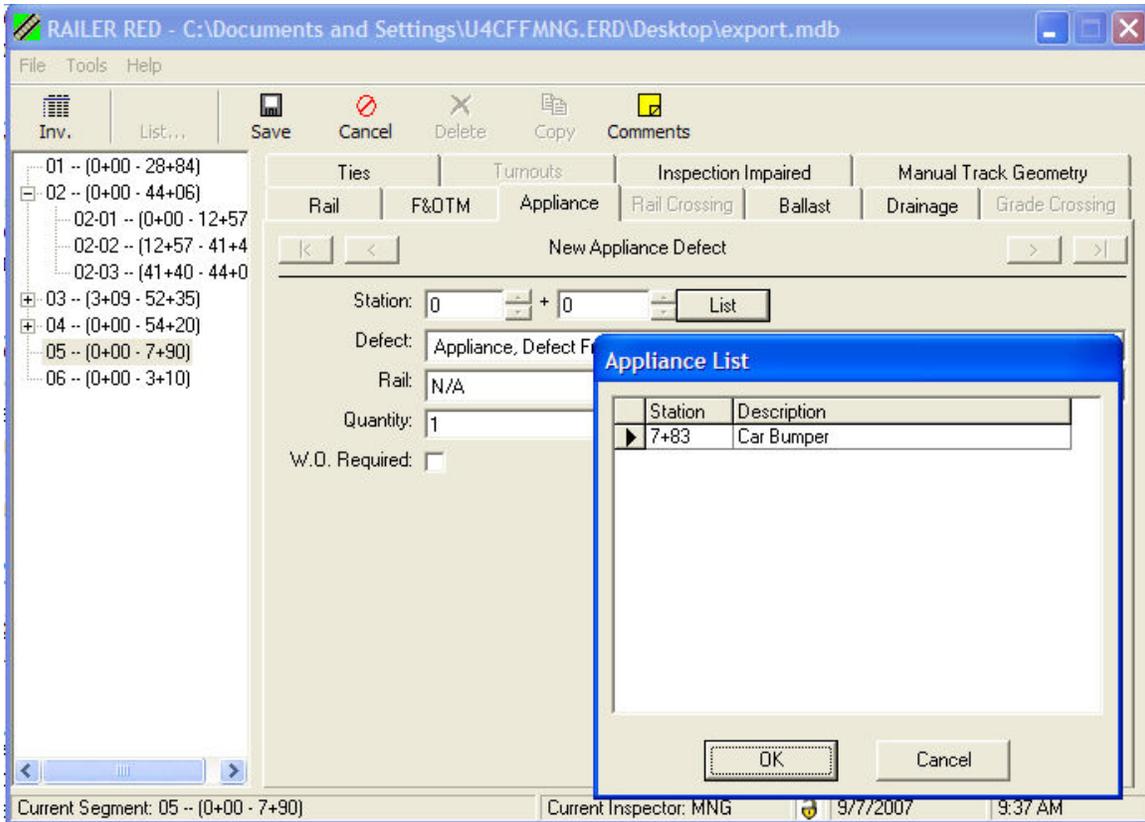
Rail, F&OTM, and Ballast Inspection

For these tabs, the user simply clicks **Add** to add a new defect, enters the station, chooses the defect from the list, and enters the affected rail side and quantity. If common defects repeat, the inspector can use the **Copy** button to copy an existing defect, then change only the fields that have changes, such as station location.



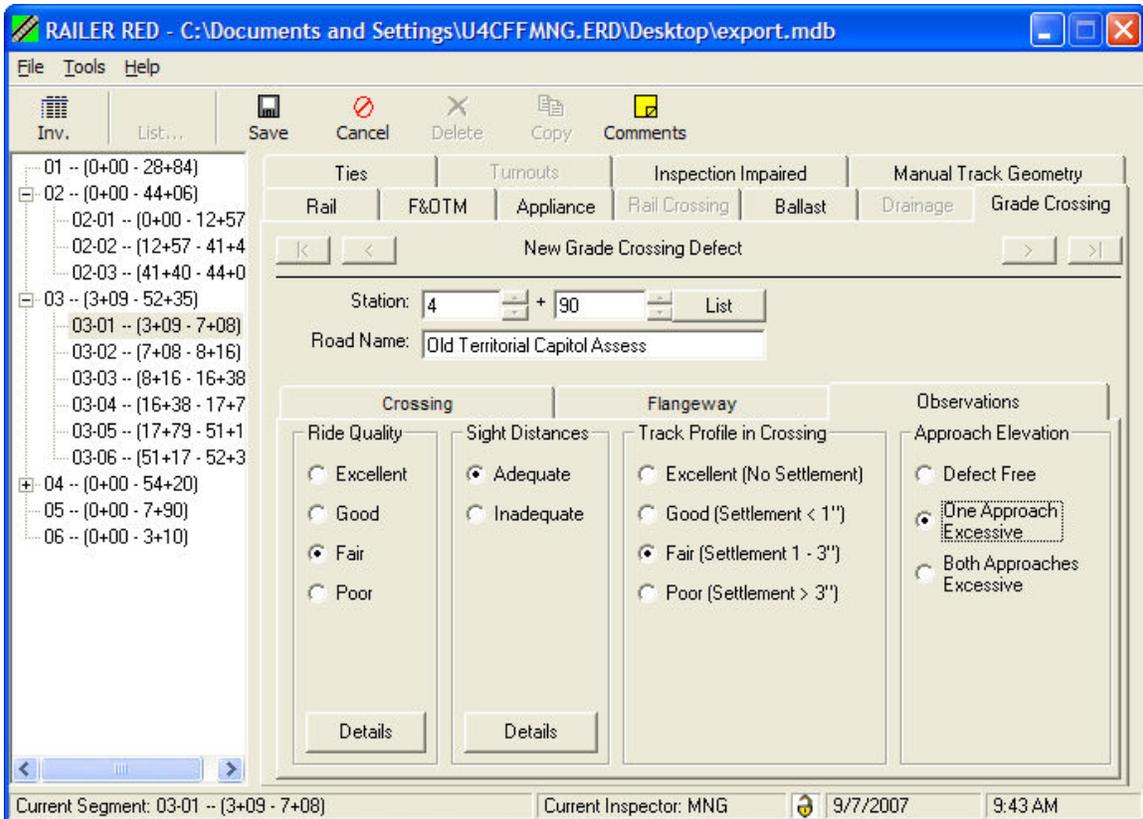
Appliance, Rail Crossing, and Drainage Inspection

For these tabs, the user clicks **Add** to add a new defect, then clicks the list button to chose which piece of track inventory the defect is associated with. This list is based on the items (appliances, drainage, or rail crossings) that have been recorded for that track's inventory.



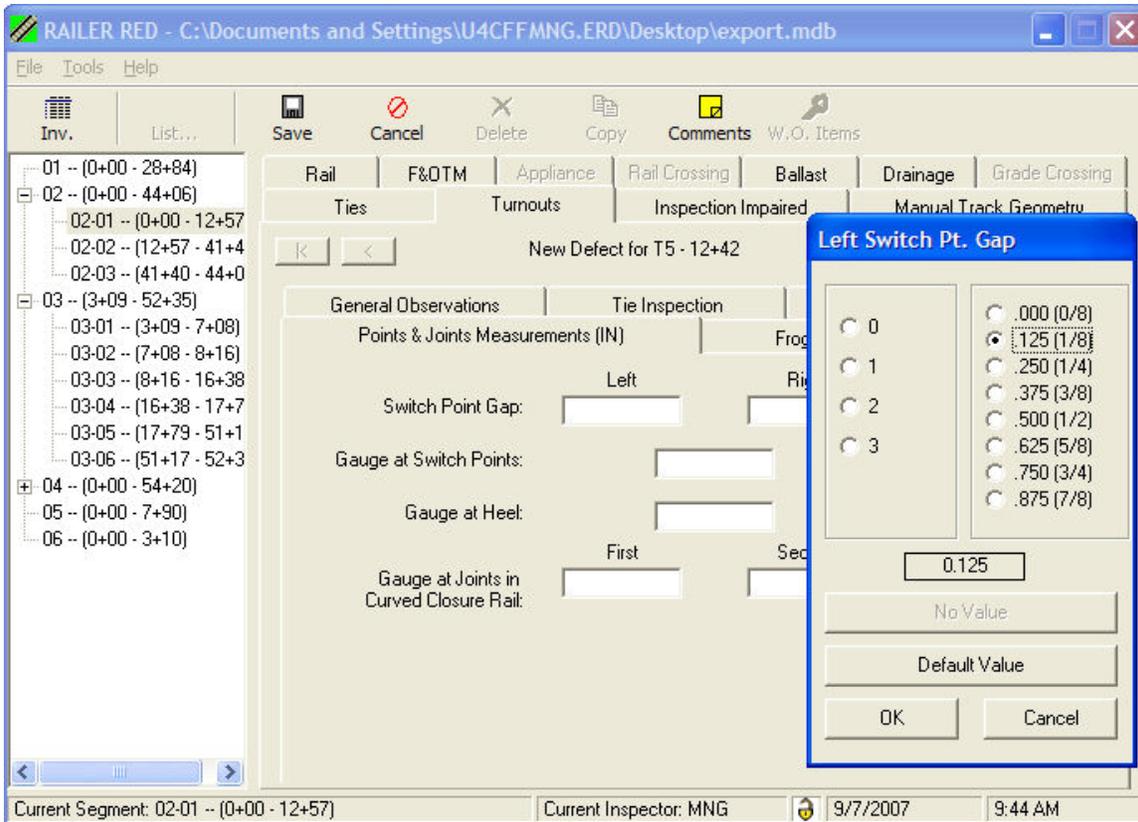
Grade Crossing Inspection

Under the Grade Crossing tab, the user clicks **Add** to add a defect, then the List button to select which grade crossing from the inventory. The inspector can then enter information on crossing defects, flangeway measurements, and General Observations.

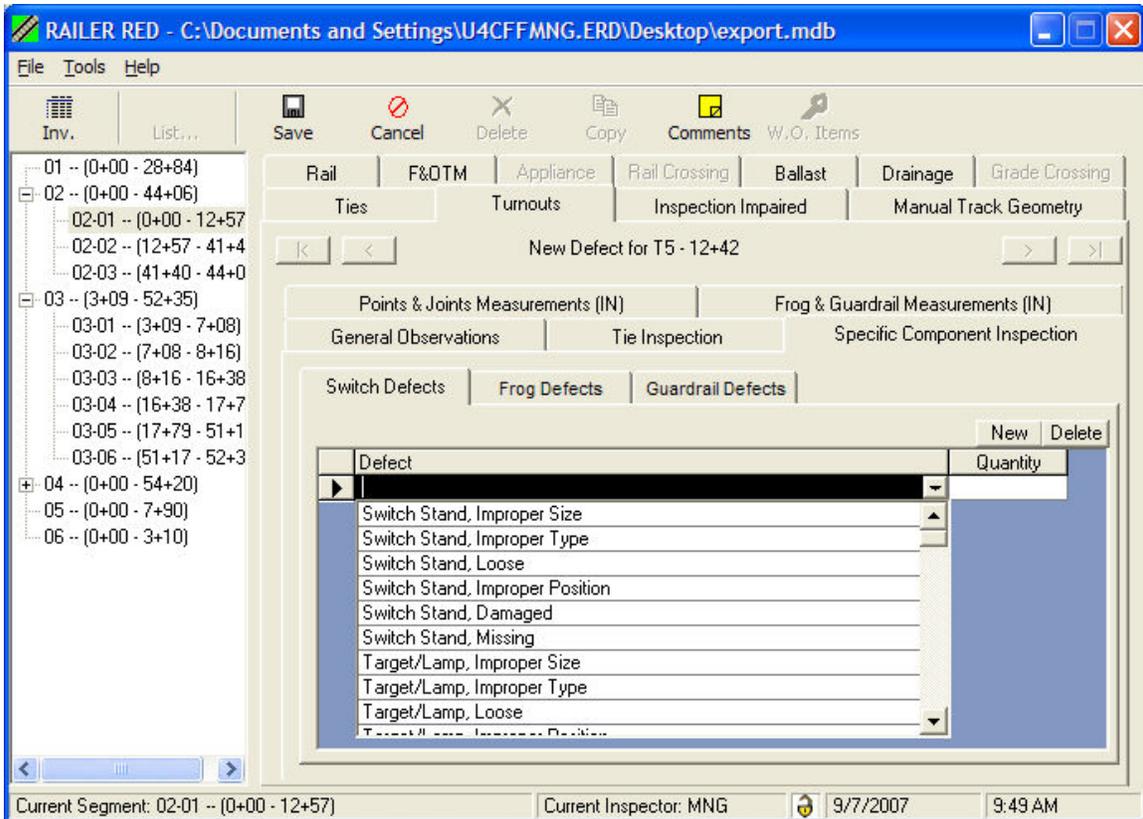


Turnout Inspection

Under the Turnout tab, the user clicks the **Add** button, then chooses the turnout to be inspected. The inspector can then enter information about general observations, switch tie defects, specific components (switch, frog, and guardrail), and measurements. When entering measurements, a pop-up box is displayed to record the value in 1/8" increments.

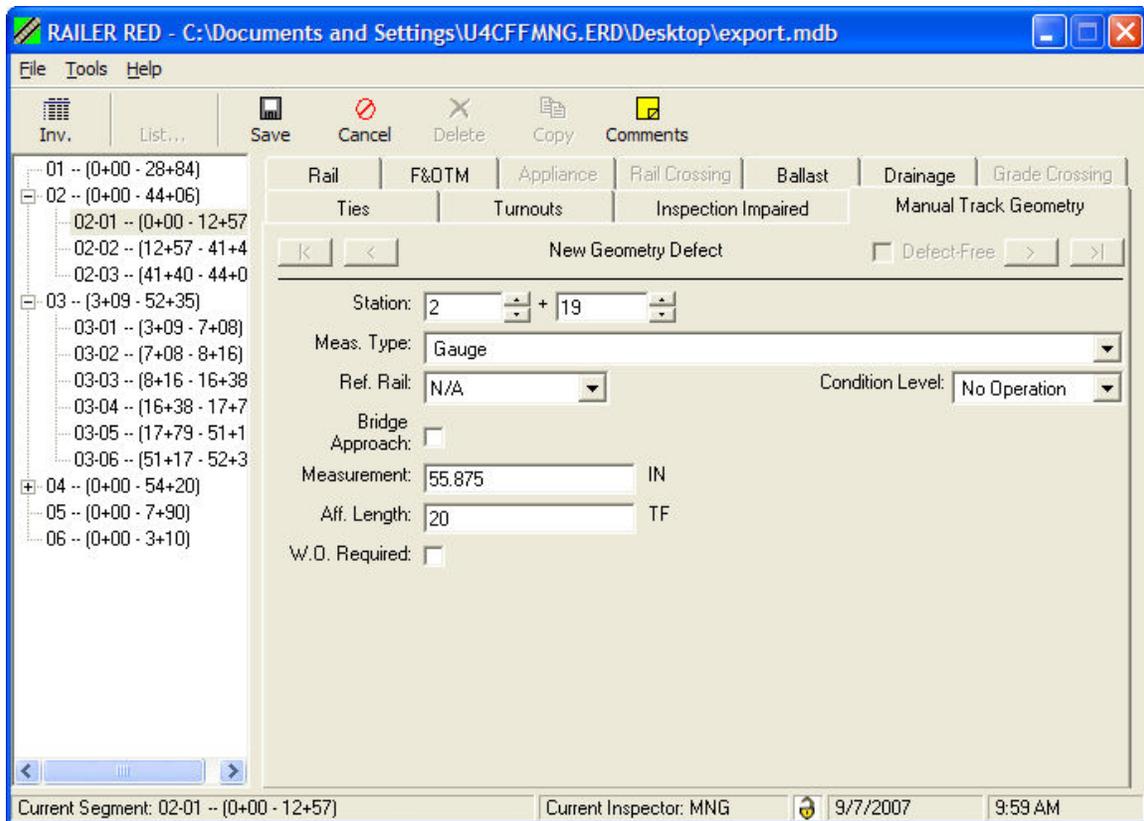


Under the Turnout specific components inspection, the inspector chooses which turnout component to inspect (switch, frog, or guardrail) and then clicks the **New** button to add a row and chose the defect from the list.



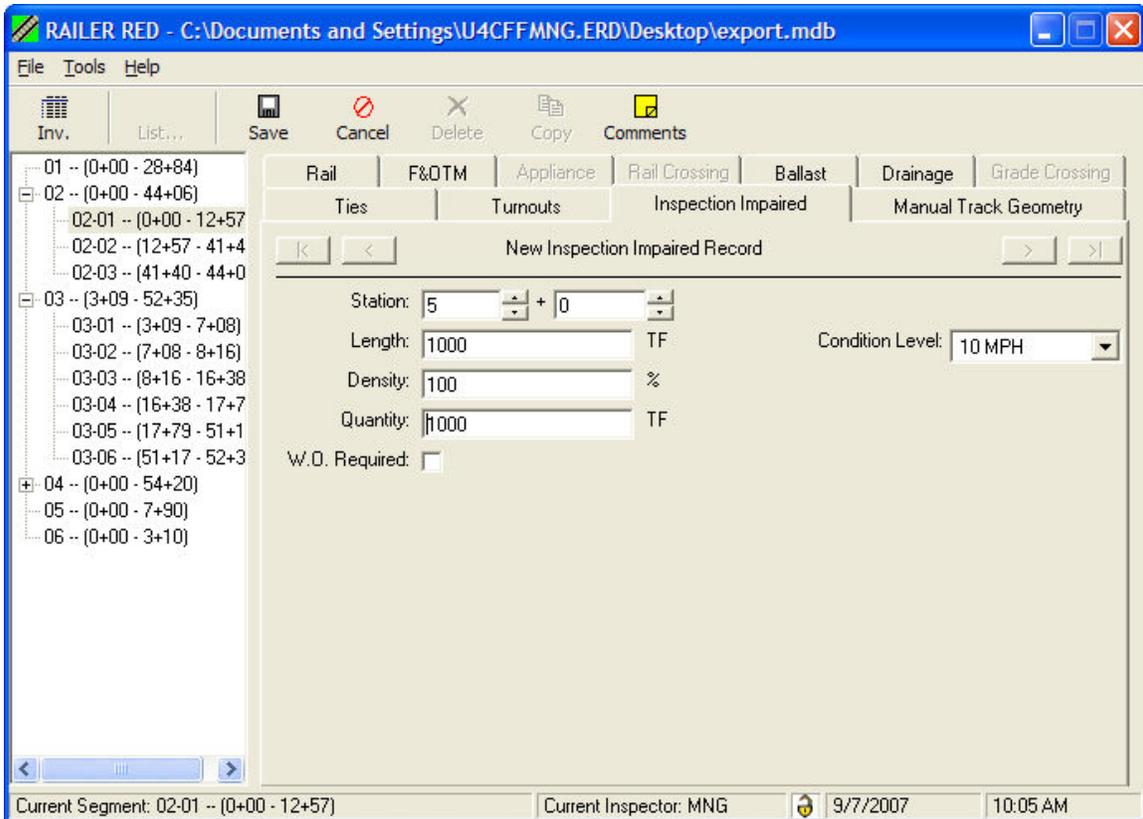
Manual Track Geometry Inspection

Under the Manual track geometry tab, the user can enter information about track geometry deviations, such as Alignment, Crosslevel, Gauge, Profile, and Rail Displacement. The user clicks the **Add** button, enters the station, rail, measurement, and affect length information.



Inspection Impaired

On certain occasions, it may not be possible to adequately and completely inspect a portion of track due to the present of cars, excessive ballast on track, or getting into controlled areas. In these circumstances, the inspector can denote this using the inspection impaired tab.



Previous Inspection List

When inspecting a segment in RAILER RED, the inspector may come across several inventory items as they walk down the track that require an inspection.

This includes such items as drainage culverts, appliances, turnouts, and grade crossings. The inspection list gives the inspector a sorted list in increasing station location of these inventory items. The inspector can move down this list line by line, select the next item to be inspected, and then click the **Inspect** button to go directly to that inspection record to inspect that item. This feature saves times and ensures that all inventory receives an inspection.

When past inspection information has been recorded and exported for a segment, those defects from the most recent inspection can also be viewed in the Inspection List. Again, all defects are presented in increasing station order, and the inspector can move down the list and verify if the defect has been fixed or still exists. If it still exists, they can click the **Copy** button to directly copy that defect into the current inspection record, thus saving an inspection effort.

Defects List

Location	Description	Rail	Date	Item Type
0+80	Bolts, Improper Size/Type (4 Bolts)	R	5/1/2007	FOTM Defect
0+85	Rail Joint Gap > 1" & <=1.25"	L	5/1/2007	FOTM Defect
1+00	Tie Plate, Missing, SS	L	5/1/2007	FOTM Defect
1+20	Tie Plate, Missing, SS	R	5/1/2007	FOTM Defect
2+50	Bolts, Improper Size/Type (2 Bolts)	R	5/1/2007	FOTM Defect
3+14	Drainage, No Defects	N/A	5/1/2007	Drainage Defect
3+23	Drainage, No Defects	N/A	5/1/2007	Drainage Defect
3+80	Bolts, Improper Size/Type (2 Bolts)	R	5/1/2007	FOTM Defect
3+80	Rail Joint Gap > 3/4" & <=1"	R	5/1/2007	FOTM Defect
7+20	Gauge	N/A	5/1/2007	Geometry Defect
7+28	Alignment	R	5/1/2007	Geometry Defect

Copy Cancel

Safety Inspection

Unlike a detail inspection which addressed all defects, a safety inspection usually only addresses the most critical defects types which should be corrected in an expedient fashion. Safety inspection information, as with all inspection information, is stored and accessed at a segment level. To access the safety inspection screen, go to the Tools menu and chose **Safety Inspection**. The Safety Inspection screen contains a grid, with each row of the grid representing safety defects for that segment.

Safety Inspection

Track ID: 02 Comments Show Existing Defects
Segment ID: 02-01 Show "No New Defects"
Begin Station: 0+00 End Station: 12+57 Insert Delete

Insp Date	Inspector	Comp	Defect	Condition Level	ID	Station	Rail	Quantity
1/14/2005	DRU	Turnout	Heel Joint Bolts	5 MPH		12+42	N/A	1
1/14/2005	DRU	Fastenings & C	Bolts, Loose (3	Full Compliance		12+50	R	1
1/14/2005	DRU	Fastenings & C	Bolts, Missing 0	No Operation		7+85	L	1
1/14/2005	DRU	Fastenings & C	Bolts, Loose, All	10 MPH		12+50	L	1
11/2/2004	DRU	Fastenings & C	Bolts, Loose, All	10 MPH		12+50	L	1

Save Close

To insert additional safety defects, click the **Insert** button to insert additional rows to the grid. To delete a safety defect from the segment record, highlight the row, and click the **Delete** button. The safety grid shows all defects previously recorded, regardless of the date they were found. Use the Show Existing Defects check box to display only current safety defects that exist on the track.

Safety Inspection may occur on a monthly, or more frequent, schedule. If safety defects have been identified via a previous inspection, and those defects are still found to be present under the next safety inspection, it is not necessary to enter those defects again - the system already has those recorded as existing defects.

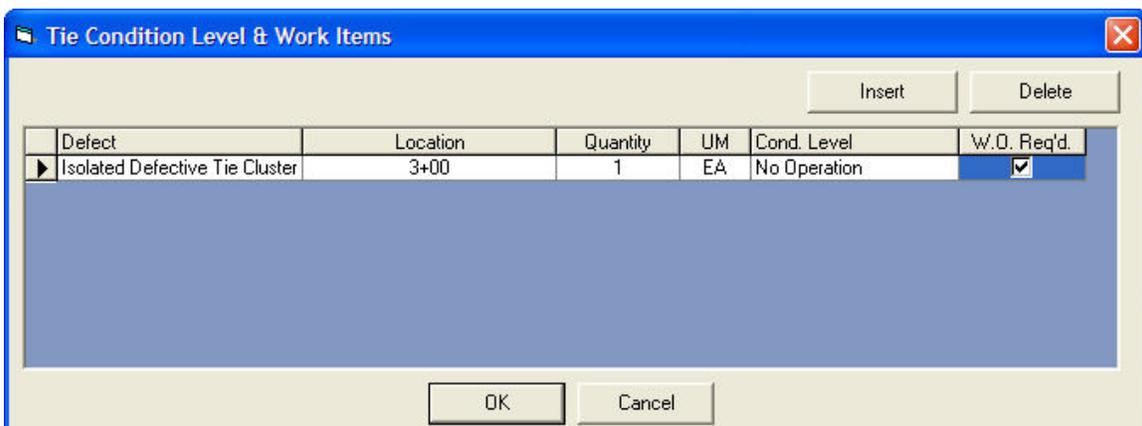
If a safety inspection is performed that turns up no new safety defects, a new record should be entered for that inspection date where the component is set to None - denoting no defects.

During a detailed inspection, it is not unlikely to come across a critical defect that requires a immediate work action because it is a safety concern. If a given defect is denoted as requiring a work order during the detailed inspection, that defect will be displayed on the safety screen as well.

Work Orders

During an inspection, the inspector may come across a defect that requires attention immediately. In this case, the inspector would denote that by checking the **W.O. Required** checkbox for that defect. Checking the work order box automatically makes the defect a safety defect to be included on the safety screen.

To create a work order for a tie defect or a turnout defect, the inspector must first enter the defect on the detailed inspection screen then save the record. Then, the inspector clicks the **Edit** button to edit the record again, and then choses the **W.O. Items** button on the tool bar. This brings up a screen similar to the one below.



The inspector can chose the defect from the list to associate a work order with, optionally enter the location of the defect, and click the W.O. Req'd box.

Support

Support Center



University of Illinois

If RAILER software was obtained from the University of Illinois, contact the following for software support:

Scott McDonald
Tel: (800)895-9345
Email: techctr@uiuc.edu
University of Illinois Technical Support Center
302 East John Street, Suite 302
Champaign, IL 61820



SMS Center of Expertise for RAILER

The SMS Center of Expertise for Builder was created to provide a full range of customer support to DoD RAILER users. Services include:

- Support for implementation of RAILER
- Support for Inspection and re-inspection of Railroad track
- Condition assessment analysis
- Technical support for RAILER users
- Training
- Development of annual and long range work plans
- Budget forecasting and justification
- Development of GIS applications and presentations
- Database maintenance
- Software customization for specific organization requirements

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Acknowledgements

RAILER RED version 6.0 would not be possible without support from sponsors in the Army and Navy. The developers would like to thank Mr Mike Dean and Mr Phil Columbus with the Army Office of Assistant Chief of Staff for Installation Management (OACSIM) and Mr Bill Gannon from Naval Facilities Engineering Service Center (NFESC) for their support in program upgrades and features.

The developers also express thanks to all those who have provided feedback and suggestions during the beta testing period and Grade Crossing Condition Index Development to greatly improve the quality of the application. Specific thanks goes to:

Nick Byrnes
Mike Crawford
Jeremiah Dirnberger
Lulu Edwards
Riley Edwards
Bernie Forcier

Bill Gannon
John Hoegemeier
Sarah Jersey
Julie Kelley
Tom Pinnick
Greg Ramsay
Don Uzarski
Matt Waggoner

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