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# **TCID User's Manual**

**Version 2.2**

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**Sims Professional Engineers**

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## Revision History

Name	Date	Reason For Changes	Version
G. VanHeeren	2016-07-27	Revised section 1.2 for addition of third user type. Revised section 2.1 for new batch notification options. Revised section 2.2.1 to clarify deletion of user accounts. Revised section 2.4.1 for addition of third user type. Added section 2.5.4 Notice of Implementation Added section 2.5.5 FAQ	1.8
G. VanHeeren	2016-08-29	Updated Table 2 for addition of multiple crack orientation codes. Added section 2.3.1 Virtual Group.	1.9
G. VanHeeren	2016-09-19	Added section 2.3.5 Un-Submitting Records. Revised Tables 1 and 2 for Inspection Type update.	2.0
G. VanHeeren	2016-12-22	Revised field 16 of Table 1 for new mileage estimation rules. Removed revision history prior to Version 1.8.	2.1
G. VanHeeren	2017-12-7	Revised fields 6, 15, and 16 of Table 1. Added field 24 – No. of Compartments in Table 1, re-numbered subsequent fields. Added (3) Compartment No. fields in Table 2. Edited text in section 1.1 Other minor text edits.	2.2

# 1. Introduction

## 1.1 Purpose

The purpose of this User's Manual is to serve as a guide and reference to the web based Tank Car Integrated Database (TCID).

The Tank Car Integrated Database (TCID) is designed to replace AAR forms R-1, R-2 and SS-3, by collecting data on tank car inspections, repairs, alterations and conversions. It became mandatory on January 1, 2015, for tank car owners to supply information to TCID for any event for which those forms would formerly have been used\*, as well as inspections of the sill and pad inboard of the bolster. The database allows AAR to monitor the health of the fleet, and investigate questions regarding any particular design. The designated custodian of the TCID program and data collection process is Sims Professional Engineers. All data are held proprietary, and only the car owner and AAR can view or retrieve them.

\* The AAR Tank Committee has eliminated the requirement to report changes in the tank car reporting mark or car number, which would have formerly required submittal of an R-1. This process was deemed redundant with the inclusion of the permanent Equipment Identification Number (EIN) in UMLER.

## 1.2 Access and User Type

The individual using this database will be assigned a user type of either 'Member', 'Data Analyst', or 'Delegate':

Members are car owners or designees who have full authority with regard to cars being inspected or making AAR reports on said cars. They will be able to add new users, edit the profiles of current users within their group, and have full access to their group's information within the database.

Data Analysts will be able to input data and run all available reports for their group, but will not be able to create or modify other user accounts.

Delegates are those individuals who have been given authority to enter data on behalf of the members or their designees. Essentially they will be entering data, but will not have access to user creation and/or modification, and will not be able to create or view most reports.

## 2. TCID Website Navigation

### 2.1 Home

#### Description

The "Home" tab provides the user with their profile details, an option to revise their password, as well as Batch Upload settings. Delegates do not have the option to modify the Batch Upload settings. New settings will not take effect until the "Edit Profile" button at the bottom of the page is selected.

#### 2.1.1 Profile Details

Within the Profile Manager screen, the user has the option to modify their name and password. In addition, the Batch Upload settings may be modified.

For the purpose of testing each user's batch upload process, the upload mode should be set to "Test". This allows for the data to be flagged for subsequent deletion by the system administrator. If the records are ready for final submission, "Production" mode should be selected.

The "Batch Notification User" allows the user to select the individual who should receive notifications when batch uploads are submitted.

The "Batch Notification" allows the user to select when the TCID system will send notifications regarding batch upload success or failure.

The "FTPS Server Credentials" option should be checked when the group/company wishes to have FTPS credentials generated for them. This is only needed when the group/company wishes to batch upload via the FTPS server. If they wish to upload a batch via the web-form under 'Inspections', then it is not needed.

Additional information can be found in Section 2.3.4 of this document regarding batch upload instructions.

### 2.2 Users

#### Description

The "Users" tab is only available to members, and allows for the management of each user within their group. The member has the option to add a new user, delete a user, or edit a user.

#### 2.2.1 User Details

Within the "Add" new user, the member is required to input the new user's name and e-mail, account status, associated group, and user type. If no password is entered, one will be automatically created. Once the "Add User" button is selected at the bottom of the page, an automatic e-mail will

be generated and sent to the new user with their password. The “edit” user screen allows for editing of the same information listed above.

User accounts may be deleted by checking the appropriate boxes next to the corresponding user name, then checking the box next to the “Delete Selected” button and clicking the “Delete Selected” button.

## **2.3 Inspections**

### **Description**

Within the “Inspections” tab, the user has the ability to create a new inspection, view open (unsubmitted) inspections, implement a batch import, select the appropriate virtual group, un-submit a previously submitted record, and delete, edit, or download an open inspection. This portion of the website is where all data is recorded.

#### **2.3.1 Virtual Group**

Before creating or editing inspection reports, the user must choose the appropriate group name from the Virtual Group dropdown menu at the top of the Inspections page. This allows the user to select the appropriate group if their account is linked to multiple groups. Once a group is chosen, the saved inspections for that group will show up in the open inspections list.

#### **2.3.2 New Inspection**

Once “New Inspection” is selected, the report form for the new record appears. The new report form can be seen in Figure 1.

Creating Inspection for: Development Group

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**AAR Manual of Standards and Recommended Practices  
Specifications for Tank Cars**

M-1002

Report of Alterations, Conversions, Welded Repairs, and Stub Sill Inspections

0. Inspection/Report Type	Tank Qualification: <input type="checkbox"/> Stub Sill Inspection: <input type="checkbox"/> Alteration: <input type="checkbox"/> Conversion: <input type="checkbox"/> Welded Repair: <input type="checkbox"/> Other: <input type="checkbox"/>		
1. Car Mark	<input type="text"/>	2. Car Number	<input type="text"/>
3. Station Stencil	Select One ▾	4. Stencil Class	Select One ▾
5. Shop Loc. (Town)	<input type="text"/>	6. State or Province	Select One ▾
7. Built Date (YYYY/MM/DD)	Year ▾ Month ▾ Day ▾	8. Date of Work &/or Inspection (YYYY/MM/DD)	Year ▾ Month ▾ Day ▾
9. Car Jacketed	Select One ▾	10. Reserved (design specific)	<input type="text"/>
11. Reserved (design specific)	<input type="text"/>	12. Original AAR Certificate of Construction Number	<input type="text"/>
13. Builder	Select One ▾	14. Stub Sill Design Style (as inspected)	Select One ▾
15. Stub Sill Design Variation	Select One ▾	16. Total miles in thousands of miles (actual cumulative mileage required)	<input type="text"/>
17. Constructed car spec	Select One ▾	18. Car spec after modification	Select One ▾
19. Nature of Damage	Select One ▾	20. Railroad Responsibility	Select One ▾
21. Stub Sill Deformation	A End: <input type="checkbox"/> B End: <input type="checkbox"/>	22. Year of Last Tank Qualification	Select One ▾
23. Tank Containment Failure	<input type="checkbox"/> (Check if YES)	24. No. of Compartments	Select One ▾

Facility Rep. Name:  Submitted by:

TCID-1 09/01/2010

Next-->

**Figure 1. Inspection Report, Part 1**

When populating this form, it is essential to use the allowable data rules to ensure accuracy and the ability to perform reliability studies. Table 1 details the fields for line items 1 through 24 on the report form, and provides data rules for the fields.

**Table 1. Fields and Inspection Report Data Rules, Part 1**

	Field Name	Description	Data Rules
0	INSPECTION/REPORT TYPE	Reason for Inspection	Options for this field are available through check boxes. Based on options chosen, later fields may be disabled for entry.
1	CAR MARK	The reporting mark stenciled on the car	If an additional car mark is needed, please contact the system administrator.
2	CAR NUMBER	The car number stenciled on the car	Numeric, 6 digit max
3	STATION STENCIL	Station stencil of inspecting company or facility. This should be the M-1002 tank car facility station stencil, as opposed to the M-1003 QA station stencil.	Options for this field are available through a drop-down menu.
4	STENCIL CLASS	Current car specification, as stenciled, prior to any R1 modifications	Options for this field are available through a drop-down menu.
5	SHOP LOCATION (town)	City name of facility performing the inspection	Alpha-numeric, 30 characters max
6	STATE OR PROVINCE	State or Province of facility performing the inspection	Options for this field are available through a drop-down menu.
7	BUILT DATE	Car built date, as per UMLER	Options for this field are available through a drop-down menu. Format: YYYY MM DD
8	DATE OF WORK AND/OR INSPECTION	The date the Inspection occurred	Options for this field are available through a drop-down menu. Format: YYYY MM DD
9	CAR JACKETED	Is the Car Jacketed; Yes or No	Options for this field are available through a drop-down menu. Options "Yes" or "No"
10	RESERVE 1 (Design Specific)	Open Field	Alpha-numeric, 30 characters max. This field is for data a car owner or builder may have, specific for this design.
11	RESERVE 2 (Design Specific)	Open Field	Alpha-numeric, 30 characters max. This field is for data a car owner or builder may have, specific for this design.
12	ORIGINAL AAR CERTIFICATE OF CONSTRUCTION No.	Original AAR Certificate of Construction number	Alpha-numeric, 5-8 characters
13	BUILDER	Builder Code, as per UMLER	Options for this field are available through a drop-down menu.
14	STUB SILL DESIGN STYLE AS INSPECTED	Current Stub Sill Design, as per UMLER	Options for this field are available through a drop-down menu. If the correct sill design is not available, use a similar design.
15	STUB SILL DESIGN VARIATION	Underframe slabbing or pad design between bolster, Continuous or Non-Continuous	Options for this field are available through a drop-down menu. Valid choices depend on boxes checked in field 0. If "Tank Qualification" is checked, choose "Continuous" or "Non-continuous".
16	TOTAL MILES IN THOUSANDS OF MILES	Number of car miles in thousands. E.g. input "23" for 23,000 miles	Numeric. Anything larger than 1000 is allowed but will produce a warning message. If total cumulative mileage is unknown, estimate a reasonable number. If no basis for estimation is available, use 18k miles per year the car has been in service.
17	CONSTRUCTED CAR SPEC.	Constructed car specification	Options for this field are available through a drop-down menu.
18	CAR SPEC AFTER MODIFICATION	Car specification after modification	Options for this field are available through a drop-down menu. This field may be disabled based on field 0.
19	NATURE OF DAMAGE	Cause of damage, accident or non-accident	Options for this field are available through a drop-down menu. Options "Accident", "Non-Accident", or "N/A"
20	RAILROAD RESPONSIBILITY	Railroad Responsibility; Yes or No	Choose "Yes" if any part of the cost is attributable to the rail road, otherwise choose "No".
21	STUB SILL DEFORMATION	Stub Sill Deformation at A-End and/or B-End	Check none, one, or both options.
22	YEAR OF LAST TANK QUALIFICATION	Year of last tank qualification	Options for this field are available through a drop-down menu. Format: YYYY. If no last tank qualification, enter built date of car.
23	TANK CONTAINMENT FAILURE	Tank Failure	Check if the tank was unable to contain commodity, otherwise leave unchecked.
24	NO. OF COMPARTMENTS	Number of tank compartments	Options for this field are available through a drop-down menu.



After all the required fields are populated, "Next" must be selected. At this point, all invalid entries not conforming to the data rules will be listed on a message screen, and the invalid fields will be bordered in red. These fields will need to be appropriately populated before proceeding on to the additional fields, or having the option to save or submit the inspection. Once everything is properly entered, additional fields will be visible just below line items 0 through 24. Figure 2 shows the remaining fields which will appear just below these line items. Note that field 25 will be available for data entry only if "Alteration" and/or "Conversion" was selected for the report type.

25. Alterations and Conversions	Compartment	Change Category	New Drawing / Part / Document / Commodity ID	Approval Reference	Actions
	No drawings found.				
<div style="border: 1px solid gray; height: 40px; width: 100%;"></div>					
Characters remaining: 350					
Add Drawing					

  

Attachment Weld Inspection		Record Shell / Sill Damage							
<b>Attachment Weld Inspection Results</b>									
Inspection Results	Compartment	Weld Code	Location	Inspection Technique	Num Cracks	Max Crack Length (in.)	Crack Orientation Code	How Repaired	Actions
<b>Shell/Sill Inspection Results</b>									
Failed Component	Compartment Number	Failure Type	Failure Cause	How Repaired	Crack/Defect Length (in.)	Repair Location	Inspection Technique	Actions	
Facility Rep. Name: <input type="text"/>				Submitted by: <input type="text"/>					
TCID-1 09/01/2010									
								Save Inspection	Submit Inspection

Figure 2. Inspection Report, Part 2

As with the previous fields, when populating this form, it is essential to use the allowable data rules to ensure accuracy and the ability to perform reliability studies. Table 2 details the fields and data rules for line item 25, attachment weld inspections, shell/sill damage, and representatives.

**Table 2. Fields and Inspection Report Data Rules, Part 2**

	Field Name	Description	Data Rules
<b>Alterations and Conversions</b>			
25	COMPARTMENT NO.	Compartment number corresponding to the drawing.	Options for this field are available through a drop-down menu.
	CHANGE CATEGORY	Type of drawing used to support the alteration/conversion	Options for this field are available through a drop-down menu. This field may be disabled based on field 0.
	NEW DRAWING / PART / DOCUMENT / COMMODITY ID	Number of the drawing used to support the alteration/conversion	Alpha-numeric, 50 characters max. If the change category is set at "Commodity", the text in this field should include either "Owner" or "AAR TCC".
	APPROVAL REFERENCE	Number of the AAR approval that supports the alteration/conversion	Alpha-numeric, 10 characters max. If the change category is set at "Commodity", the text in this field should include either "Owner" or "AAR TCC".
	COMMENTS	Open field	Alpha-numeric, 350 characters max. This field is for references to the owner's approved instruction number and description, along with a description of work done and any commodity changes that need to be reported.
<b>Attachment Weld Inspection</b>			
	INSPECTION RESULTS	"Defect(s) Found" OR "No Exceptions Found"	Use 'No exceptions found' if all reportable welds have been inspected and no exceptions were found. Options for this field are available through a drop-down menu.
	COMPARTMENT	Compartment number corresponding to the weld defect.	Options for this field are available through a drop-down menu.
	WELD CODE	When "Defect(s) Found" is selected, this code provided by a corresponding template identifies the weld that is defective.	Options for this field are available through a drop-down menu.
	LOCATION	Identifies the location on the car of the weld defect. The location can be found in the appropriate template.	Options for this field are available through a drop-down menu.
	INSPECTION TECHNIQUE	Nondestructive testing technique used to identify the weld defect	Options for this field are available through a drop-down menu.
	NUMBER OF CRACKS	Number of Cracks	Numeric
	MAX CRACK LENGTH	Length, measured to the hundredth of an inch, of the longest crack found during inspection	Numeric, precision: 0.00
	CRACK ORIENTATION CODE #1	This code defines the orientation of the crack in the weld or parent metal. This is a detail of the weld itself, as opposed to a general description of the weld location.	Options for this field are available through a drop-down menu.
	CRACK ORIENTATION CODE #2	Same as above. Used when crack propagates through parts so that multiple codes may apply.	This field is optional. Options for this field are available through a drop-down menu.
	CRACK ORIENTATION CODE #3	Same as above. Used when crack propagates through parts so that multiple codes may apply.	This field is optional. Options for this field are available through a drop-down menu.
	HOW REPAIRED	Designation of the repair method; (AAR, MSRP, M-1002, Appendix R)	Options for this field are available through a drop-down menu.
<b>Record Shell/Sill Damage</b>			
	FAILED COMPONENT	Tank component containing the damage	Options for this field are available through a drop-down menu. Use 'No Exceptions Found' if all reportable shell/sill areas have been inspected and no exceptions were found.
	COMPARTMENT	Compartment number corresponding to the failed component.	Options for this field are available through a drop-down menu.

**Table 2. Fields and Inspection Report Data Rules, Part 2 (continued)**

	Field Name	Description	Data Rules
<b>Record Shell/Sill Damage (continued)</b>			
	FAILURE TYPE	Type of tank damage. Availability of "Failure Type" options depend on the failed component selected.	Options for this field are available through a drop-down menu.
	FAILURE CAUSE	Condition that caused the tank damage. Availability of "Failure Cause" options depend on the failed component selected.	Options for this field are available through a drop-down menu.
	HOW REPAIRED	The rule/procedure used to repair the tank damage (AAR, MSRP, M-1002, and App. R). Availability of "How Repaired" options depend on the failed component selected.	Options for this field are available through a drop-down menu.
	CRACK/DEFECT LENGTH	Length, measured to the hundredth of an inch, of the longest defect found during inspection	Numeric; Precision: 0.00; Availability of this field depends on Failure Type chosen.
	REPAIR LOCATION	Location on car of the repair. Availability of "Repair Location" options depend on the failed component selected.	Options for this field are available through a drop-down menu. A graphic for the location on the tank can be found in the Templates section under <a href="#">Tank Location Chart</a>
	INSPECTION TECHNIQUE	Technique used to inspect the tank damage	Options for this field are available through a drop-down menu.
<b>Representatives</b>			
	NAME OF MANAGEMENT REPRESENTATIVE	Name of a manager or other car owner representative who can attest to the work done.	Alpha-numeric, 30 characters max
	SUBMITTED BY (NAME AND COMPANY):	The name and company of the person submitting the form.	Alpha-numeric, 30 characters max

Once the fields for any of these three categories (drawings, attachment weld inspection, or shell/sill damage) are populated, the available options are to add additional records, edit records, or remove records.

When the inspection is complete and all data is entered, the final option is to submit the inspection or save the inspection for later review and submission.

**2.3.3 List Open Inspections**

This section of the database contains a list of all open and un-submitted inspections entered by all users within a specific group or company.

Within this screen, any listed inspection can be deleted, modified, or downloaded for viewing purposes. The record may be submitted at any time, but needs to be done through the edit window. Once an inspection is submitted, it will no longer be considered an 'open' inspection, and will be removed from the list.

**2.3.4 Batch Import**

If a batch submission is preferred, please refer to document "[TCID Batch Submission Spec](#)" within the "Documentation" tab, under "List Specifications".

### 2.3.5 Un-Submitting Records

To remove a previously submitted record from the database, enter the car mark and car number in the corresponding boxes in the upper right corner of the Inspections page. A list of submitted records for that car will appear. Check the box next to the record to be removed, then click the Un-Submit Selected button at the bottom of the list. The chosen record will be moved into the open inspections list, where it can be edited or deleted as needed.

## 2.4 Reports

### Description

This section of the database contains all the reports that are available to retrieve information from the database.

#### 2.4.1 List Reports

There are three reports that a user has access to within the user's specified group:

The "Inspection Summary" report is only available to members, and allows the user to view a summary list of all submitted inspections. To run this report, select the PDF icon under the "Run" heading. A PDF Document will open which can then be saved or printed.

The "Single Inspection Summary" report is available to both members and delegates, and provides information on the most recent inspection for a specific tank car associated with the account. To run this report, input the car mark and car number, then select the corresponding PDF icon under the "Run" heading. A PDF document will open which can then be saved or printed.

The "Service History by Group" report is available to members, and gives all inspection information within the database for the selected group. To run this report, choose the group from the dropdown menu, then click the report icon under the "Run" heading. This will schedule the report to be run. When it is finished, an email notification will be sent, and the CSV file can be downloaded from the "List Data Files" page.

#### 2.4.2 List Data Files

This page is where data files from previously run reports are stored. To download a specific report file, click the corresponding report icon under the "Download" heading. A CSV file will be downloaded which can then be saved elsewhere. Files will be kept on this page for 30 days after the report was created, then removed from the database.

## 2.5 Documentation

### Description

This section of the database contains all the supporting documents for the data entry and inspection submittal. Included in this section are the various car builder inspection templates, specifications for submitting data, several supporting documents for the database, notices of new system implementations, and a list of FAQ's.

These documents are available to all users whether you are logged in or logged out.

**2.5.1 List Templates**

This section contains all the inspection templates. Inspection templates are used to accurately report cracks found in the stub sill attachment welds. Each template lists the welds of its corresponding stub sill design, and assigns each weld a weld code. The template also lists the possible locations of each specific weld. When reporting weld cracks, use the appropriate design template. If the exact template is not available, use one that most closely emulates the design.

**2.5.2 List Specifications**

This section contains the batch upload specification and user's manual. Also included is an example of a batch upload file.

**2.5.3 List Supporting Documents**

This section contains all other documents, including the tank location chart, data dependencies, sill design mapping template, and data entry form which can be printed and used to record inspection data when offline. Also found here are the descriptions of changes for each Notice of Implementation.

**2.5.4 Notice of Implementation**

This page lists past and upcoming changes to the database which will affect how users are able to enter information into the database. When a new notice is created, an email will be sent out to users alerting them of pending changes. These changes will be shown on this page, with details such as the notice date, target implementation date, overall description, and relevant affected files. Also shown is the actual implementation date once the changes have been finalized. The target time between notice and implementation is 90 days.

**2.5.5 FAQ**

This page lists many of the most common questions asked by users, along with the answers to those questions.

## **3. External Interface Requirements**

### **3.1 User Interfaces**

The only user interface requirement is that the user has an internet connected computer with a web browser and an e-mail account.

### **3.2 Software Interfaces**

The following web browsers are supported and known to work with TCID

- Mozilla Firefox (all versions)
- Microsoft Internet Explorer 9.0.8112.16421, Update Version 9.0.9 (KB2722913)
- Opera (version 12)

## **4. Additional References**

### **4.1 Technical Contact**

If you have additional questions about the TCID Inspection Reporting process, which are not answered here, please contact a TCID administrator by filling out the form in the "Contact" tab at [www.rsiaarproject.com](http://www.rsiaarproject.com).