# Tank Car Integrated Database (TCID)
# Data Specification Manual

**RAILINC**

Last Updated: February 2019

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## TCID Fields and Inspection Report Data Rules

## Batch and Interface Inspection Form Part 1

The following tables detail the allowable fields in a batch car submission to TCID and in the TCID interface.  For batch upload, the Batch Field Name must be included in the first row of all batch file submissions.  An example batch file is located on Railinc.com. The first field, INSP_ID is user assigned and designates rows of data that belong to the same event.

Types of fields for batch upload are described in the **Data Rules** column:

- **Required** fields contain (●). These fields must be included in the file submission with data that follow rule validations.
- **Optional** fields do not have to be included in the file submission, but when submitted, data must follow rule validations.
- **Conditional** fields contain (¥). These fields may be needed in the file submission to meet conditional requirements (for example, if one field may be dependent on data from another field) and data must follow rule validations.

| | Batch Field Name | Interface Field Name | Description | Data Rules |
|---|---|---|---|---|
| 1 | INSP_ID | | Unique inspection ID, assigned by submitting party for each event, for batch upload files only | (●) Alpha-Numeric, 12 characters max |
| 2 | INSPREASON | Inspection/Report Type | Reason for Inspection | (●) Numeric, 2 digit max from 1 to 63 corresponding to the bitwise or one of these six options. When two reasons are applicable, enter the total value (e.g., Conversion and Alteration value [1+2] is 3): <br>• Conversion: 1 <br>• Alteration: 2 <br>• Stub Sill Inspection: 4 <br>• Tank Qualification: 8 <br>• Other: 16 <br>• Welded Repair: 32 <br>Select appropriate checkbox(es) for this field. |
| 3 | CARMARK | Equipment Initial | The reporting mark stenciled on the car | (●) Alpha-Numeric, 4 characters max; If an additional mark is needed, contact the  company administrator. See App C for details. |
| 4 | CARNUM | Equipment Number | The equipment number stenciled on the car | (●) Numeric, 6 digit max |
| 5 | SHOPCOMP | Station Stencil | Station stencil of inspecting company or  facility | (●) Alpha-Numeric, 7 characters max; Select entry for this field from a drop-down list. See App P for details. |
| 6 | CLASS | Stencil Class | Current car specification, as stenciled,  prior to any R1 modifications | (●) Alpha-Numeric, 11 characters max; Select entry for this field from a drop-down list. See App A for details. |
| 7 | SHOPCITY | Shop Location (City) | City name of facility performing the inspection | (●) Alpha-numeric, 30 characters max |

| | Batch Field Name | Interface Field Name | Description | Data Rules |
|---|---|---|---|---|
| 8 | SHOPSTATE | Shop Location (State) | State or Province of facility performing the inspection | (●) Alpha-Numeric, 30 characters max; Accepts dash. Select entry for this field from a drop-down list. |
| 9 | BUILTDATE | Built Date | Car built date, as per UMLER | (●) Numeric, 8 digits in YYYYMMDD format. Select entry for this field with calendar icon. |
| 10 | INSPDATE | Inspection Date | The date the Inspection occurred | (●) Numeric, 8 digits in YYYYMMDD format. Select entry for this field with calendar icon. |
| 11 | ISJACKET | Car Jacketed | Is the Car Jacketed? Yes = 1 No = 0 | (●) Numeric, 1 digit (0 or 1). Select Yes or No for this field from a drop-down list. |
| 12 | RESERVE1 | Reserved 1 (design specific) | Open field for text entry | Alpha-Numeric, 30 characters max. This field is for data a car owner or builder may have, specific for this design. |
| 13 | RESERVE2 | Reserved 2 (design specific) | Open field for text entry | Alpha-Numeric, 30 characters max. This field is for data a car owner or builder may have, specific for this design. |
| 22 | ORIGCERT | Original AAR Cert of Construction No. | Original AAR Certificate of Construction number | (●) Alpha-Numeric, 8 characters max. Accepts dash. |
| 23 | BUILDER | Builder | Builder Code, as per UMLER | (●) Alpha-Numeric, 4 characters max; Select entry for this field from a drop-down list. See App B for details. |
| 24 | STUBSILLDESIGN | Stub Sill Design (as inspected) | Current Stub Sill Design, as per UMLER | (●) Alpha-Numeric, 7 characters max. Select entry for this field from a drop-down list. Use similar design if the correct sill design is not available. See App D for details. |
| 25 | STUBSILLDESIGNVARIATION | Stub Sill Design Variation | Type of inboard sill reinforcement: Continuous or Non-Continuous or N/A | (●) Alpha-Numeric, 14 characters max. Valid entries:<br>• Continuous<br>• Non-Continuous<br>• N/A<br>Select entry for this field from a drop-down list. Valid choice depends on boxes checked for Inspection Type/Reason.<br>• Tank Qualification is checked: select Continuous or Non-continuous<br>• Tank Qualification is not checked: select N/A |
| 26 | MILES | Miles (actual cumulative miles in thousands of miles) | Number of car miles in thousands. (e.g., enter 23 for 23,000 miles) | Numeric, 4 digit max of 0-1000 (0 to 1,000,000 miles). Any entry larger than 1000 produces an error message. This field is required for the application, and optional for the batch upload. |
| 27 | CONSTRCARSPEC | Constructed Car Spec. | Constructed car specification | (●) Alpha-Numeric, 11 characters max; Select entry for this field from a drop-down list. See App Q for details. |

| | Batch Field Name | Interface Field Name | Description | Data Rules |
|---|---|---|---|---|
| 28 | POSTR1CARSPEC | Car Spec. After Modification | Car specification after modification | Alpha-Numeric, 11 characters max; Select entry for this field from a drop-down list. See App R for details. |
| 29 | DAMAGETYPE | Nature of Damage | Cause of damage, accident or non-accident or N/A | (●) Alpha-Numeric, 12 characters max. Valid entries: <ul><li>Accident</li><li>Non-Accident</li><li>N/A</li></ul> Select entry for this field from a drop-down list. |
| 30 | RAILRESP | Railroad Responsibility | Is Railroad Responsible? Yes = 1 – when any part of the cost is attributable to the railroad No = 0 | (●) Numeric, 1 digit (0 or 1). Select Yes or No from a drop-down list. |
| 31 | STUBSILLDEFA | Stub Sill Deformation (A End) | Is Stub Sill Deformation at A-End? Yes = 1 No = 0 | Numeric, 1 digit (0 or 1). Check none, one, or both options. |
| 32 | STUBSILLDEFB | Stub Sill Deformation (B End) | Is Stub Sill Deformation at B-End? Yes = 1 No = 0 | Numeric, 1 digit (0 or 1). Check none, one, or both options. |
| 33 | LASTTANKQUALYEAR | Year of Last Tank Qualification | Year of last tank qualification | (●) Numeric, 4 digits in YYYY format. Select year from a drop-down list. If no last tank qualification, enter built date of car. |
| 34 | TANKFAIL | Tank Containment Failure | Failure to contain commodity? Yes = 1 No = 0 | Numeric, 1 digit (0 or 1). Select yes or no from the drop-down list. |
| 35 | NUMCOMPARTMENTS | No. of Compartments | Number of compartments in the car | (●) Numeric, 1 digit (value from 1-6). This value impacts values for these fields: <ul><li>Compartment No.</li><li>Compartment No. (Weld)</li><li>Compartment No. (Shell)</li></ul> |
| 36 | MANAGEMENTREP | Facility Rep Name | Name of Management Representative, typically the name of the person submitting the inspection | (●) Alpha-Numeric, 30 characters max. Does not accept quotes. Accepts dash. |
| 37 | SUBMITTEDBY | Submitted By | The name and company submitting the inspection | (●) Alpha-Numeric, 30 characters max. Does not accept quotes. Accepts dash. |

# Batch and Inspection Form Part 2

| | Alterations and Conversions | | | |
|---|---|---|---|---|
| 38 | COMPARTMENT_NO_CHANGE | Compartment No. | Compartment number associated with the change to the car | (¥) Numeric, 1 digit (value from 1-6 dependent on the No. of Compartments). If entered, must also include all Drawing required fields:<br>• Compartment No Change<br>• Change Category<br>• Drawing Number<br>• Approval Reference |
| 39 | CHANGE_CATEGORY | Change Category | Type of drawing used to support the R1 alteration/conversion | (¥) Alpha-Numeric, 20 characters max. See App E for details. If entered, must also include all Drawing required fields:<br>• Compartment No Change<br>• Change Category<br>• Drawing Number<br>• Approval Reference |
| 40 | DRAWING_NUMBER | Drawing Number | New drawing, part, document or commodity ID used to support the R1 alteration/conversion | (¥) Alpha-Numeric, 50 characters max. If the change category is set to Commodity, the text in this field should include either "Owner" or "AAR TCC". If entered, must also include all Drawing required fields:<br>• Compartment No Change<br>• Change Category<br>• Drawing Number<br>• Approval Reference |
| 41 | APPROVAL_REFERENCE | AAR Approval Reference No. | Number of the AAR approval that supports the alteration/conversion | (¥) Alpha-Numeric, 10 characters max. If the change category is set to Commodity, the text in this field should include either "Owner" or "AAR TCC". If entered, must also include all Drawing required fields:<br>• Compartment No Change<br>• Change Category<br>• Drawing Number<br>• Approval Reference |
| 42 | DRAWING_COMMENTS | Drawing Comments | Drawing comments field, free form text box | Alpha-Numeric, 350 characters max. |

| Weld Inspection Results | | | | |
|---|---|---|---|---|
| 43 | INSPECTION_RESULTS | Inspection Results | Used to indicate that defects were found or that no defects were found. | (¥) Alpha-Numeric, 19 characters max. Select from a drop-down list.<br>• Defect(s) Found<br>• No Exceptions Found<br>Use 'No exceptions found' if all reportable welds have been inspected and no exceptions were found. If entered, must include all Weld required fields:<br>• Inspection Results<br>• Compartment No Weld<br>• Weld code<br>• Location<br>• Inspection Technique<br>• No. of Cracks<br>• Max Crack Length<br>• Crack Orientation Code<br>• How Repaired Weld |
| 44 | COMPARTMENT_NO_WELD | Compartment No. (Weld) | Component number associated with the weld inspection | (¥) Numeric, 1 digit (value from 1-6 dependent on the No. of Compartments). If entered, must include all Weld required fields:<br>• Inspection Results<br>• Compartment No Weld<br>• Weld code<br>• Location<br>• Inspection Technique<br>• No. of Cracks<br>• Max Crack Length<br>• Crack Orientation Code<br>• How Repaired Weld |
| 45 | WELD_CODE | Weld Code | Identifies the weld that is defective | (¥) Alpha-Numeric, 19 characters max. See App K for details.<br>If entered, must include all Weld required fields:<br>• Inspection Results<br>• Compartment No Weld<br>• Weld code<br>• Location<br>• Inspection Technique<br>• No. of Cracks<br>• Max Crack Length<br>• Crack Orientation Code<br>• How Repaired Weld |

| 46 | LOCATION | Weld Location | Identifies the location on the car of the weld defect | (¥) Alpha-Numeric, 19 characters max. See App L for details. If entered, must include all Weld required fields:<br>• Inspection Results<br>• Compartment No Weld<br>• Weld code<br>• Location<br>• Inspection Technique<br>• No. of Cracks<br>• Max Crack Length<br>• Crack Orientation Code<br>• How Repaired Weld |
|---|---|---|---|---|
| 47 | INSPECTION_TECHNIQUE | Inspection Technique | Technique used to identify the weld defect | (¥) Alpha-Numeric, 26 characters max. See App M for details. If entered, must include all Weld required fields:<br>• Inspection Results<br>• Compartment No Weld<br>• Weld code<br>• Location<br>• Inspection Technique<br>• No. of Cracks<br>• Max Crack Length<br>• Crack Orientation Code<br>• How Repaired Weld |
| 48 | NUM_CRACKS | No. of Cracks | Number of Cracks | (¥) Numeric, 5 digits max; >=0 If entered, must include all Weld required fields:<br>• Inspection Results<br>• Compartment No Weld<br>• Weld code<br>• Location<br>• Inspection Technique<br>• No. of Cracks<br>• Max Crack Length<br>• Crack Orientation Code<br>• How Repaired Weld |
| 49 | MAX_CRACK_LENGTH | Max Crack Length (in.) | Length, measured to the hundredth of an inch, of the longest crack found during inspection | (¥) Numeric, 6 digits max; precision: 0.00. If entered, must include all Weld required fields:<br>• Inspection Results<br>• Compartment No Weld<br>• Weld code<br>• Location<br>• Inspection Technique<br>• No. of Cracks<br>• Max Crack Length<br>• Crack Orientation Code<br>• How Repaired Weld |

| 50 | CRACK_ORIENTATION_CODE | Crack Orientation Code 1 | Orientation of the crack in the weld or parent metal. Detail about the weld. | (¥) Alpha-Numeric, 19 characters max. See App N for details. If entered, must include all Weld required fields:<br>• Inspection Results<br>• Compartment No Weld<br>• Weld code<br>• Location<br>• Inspection Technique<br>• No. of Cracks<br>• Max Crack Length<br>• Crack Orientation Code<br>• How Repaired Weld |
| --- | --- | --- | --- | --- |
| 51 | CRACK_ORIENTATION_CODE | Crack Orientation Code 2 | Additional field for orientation of the crack in the weld or parent metal. Detail about the weld. | Alpha-Numeric, 19 characters max. See App N for details. |
| 52 | CRACK ORIENTATION CODE | Crack Orientation Code 3 | Additional field for orientation of the crack in the weld or parent metal. Detail about the weld. | Alpha-Numeric, 19 characters max. See App N for details. |
| 53 | HOW_REPAIRED_WELD | How Repaired (Weld) | Designation of the repair method (AAR Appendix R M-1002) | (¥) Alpha-Numeric, 42 characters max. See App O for details. If entered, must include all Weld required fields:<br>• Inspection Results<br>• Compartment No Weld<br>• Weld code<br>• Location<br>• Inspection Technique<br>• No. of Cracks<br>• Max Crack Length<br>• Crack Orientation Code<br>• How Repaired Weld |
| **Shell/Sill Inspection Results** | | | | |
| 54 | COMPONENT | Failed Component | Tank component containing the damage | (¥) Alpha-Numeric, 100 characters max. See App F for details. If entered, must also include all Shell/Sill required fields:<br>• Component<br>• Component No Shell<br>• Failure Type<br>• Failure Cause<br>• How Repaired Shell<br>• Crack Length<br>• Repair Location<br>• Inspection Method |

| 55 | COMPONENT_NO_SHELL | Compartment No. (Shell) | Compartment number associated with the shell inspection | (¥) Numeric, 1 digit (value from 1-6 dependent on the No. of Compartments). If entered, must also include all Shell/Sill required fields:<br>• Component<br>• Component No Shell<br>• Failure Type<br>• Failure Cause<br>• How Repaired Shell<br>• Crack Length<br>• Repair Location<br>• Inspection Method |
|----|--------------------|--------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 56 | FAILURE_TYPE | Failure Type | Type of tank damage | (¥) Alpha-Numeric, 100 characters max.<br>See App G for details.<br>If entered, must also include all Shell/Sill required fields:<br>• Component<br>• Component No Shell<br>• Failure Type<br>• Failure Cause<br>• How Repaired Shell<br>• Crack Length<br>• Repair Location<br>• Inspection Method |
| 57 | FAILURE_CAUSE | Failure Cause | Condition that caused the tank damage | (¥) Alpha-Numeric, 100 characters max.<br>See App H for details.<br>If entered, must also include all Shell/Sill required fields:<br>• Component<br>• Component No Shell<br>• Failure Type<br>• Failure Cause<br>• How Repaired Shell<br>• Crack Length<br>• Repair Location<br>• Inspection Method |
| 58 | HOW_REPAIRED_SHELL | How Repaired (Shell) | The rule/procedure used to repair the tank damage (AAR Appendix R M-1002) | (¥) Alpha-Numeric, 62 characters max.<br>See App I for details.<br>If entered, must also include all Shell/Sill required fields:<br>• Component<br>• Component No Shell<br>• Failure Type<br>• Failure Cause<br>• How Repaired Shell<br>• Crack Length<br>• Repair Location<br>• Inspection Method |

| 59 | CRACK_LENGTH | Crack Length (in.) | Length, measured to the hundredth of an inch, of the longest crack found during inspection | (¥) Numeric, 7 digits max; precision: 0.00. If entered, must also include all Shell/Sill required fields:<br>• Component<br>• Component No Shell<br>• Failure Type<br>• Failure Cause<br>• How Repaired Shell<br>• Crack Length<br>• Repair Location<br>• Inspection Method |
| --- | --- | --- | --- | --- |
| 60 | REPAIR_LOCATION | Repair Location | Location on car of the repair. | (¥) Alpha-Numeric, 25 characters max. See App J for details.<br>If entered, must also include all Shell/Sill required fields:<br>• Component<br>• Component No Shell<br>• Failure Type<br>• Failure Cause<br>• How Repaired Shell<br>• Crack Length<br>• Repair Location<br>• Inspection Method |
| 61 | INSPECTION_METHOD | Inspection Method | Method used to inspect the tank damage | (¥) Alpha-Numeric, 26 characters max. See App M for details.<br>If entered, must also include all Shell/Sill required fields:<br>• Component<br>• Component No Shell<br>• Failure Type<br>• Failure Cause<br>• How Repaired Shell<br>• Crack Length<br>• Repair Location<br>• Inspection Method |

## Appendices

Rules for all Appendices are located in the Data Dependencies Matrix, available on Railinc.com.

- Appendix A – Stencil Classes
- Appendix B – Builders
- Appendix C – Car Marks
- Appendix D – Stub Sill Designs
- Appendix E – Change Categories
- Appendix F – Components
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- Appendix M – Inspection Techniques
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- Appendix O – How Repair Welds
- Appendix P – Station Stencil Shop Codes
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