

GX 32

Inventory Updating Software Program

FRA's Highway-Rail Crossing Data Maintenance System

GX32 Version 2.0

Overview

“GX32” is a Grade Crossing (Xing) software application for updating crossing inventory data on a personal computer that has a Windows (32 bit) operating system. It is free and comes with the specific State's or Railroad's data as requested. It allows the user to update crossing inventory information similar to the way that one would use income tax software. When the updates are complete, the program allows for electronic submittal to the data processing contractor.

GX32 can be installed on a computer for a single user or on a server for a multiuser system. For the single-user system, the GX32 software application and database is installed on a single personal computer. For a multiuser system, the database resides on a network server while the application is installed and operated on various client machines so that several users can access the GX32 database simultaneously.

While GX32 is provided to interested States and Railroads free of charge, use of this product is purely voluntary. No warranties relating to the use of the product are expressed or implied. Neither the Government nor the data processing contractor, Creative Information Technology, Inc. (CITI), is responsible for any damage to data or hardware which may arise from the use of the GX32 software. To get a free copy of GX32 with your State's or Railroad's data, contact FRA's data processing contractor, CITI, at 703-548-3313, ext 223.

Background

GX32 is the Federal Railroad Administration's (FRA) PC-based Highway-Rail Crossing Data Maintenance System. GX32 is made available and provided to States and Railroads so that they can maintain their crossing data, and send updates and new crossing additions to be entered into the US DOT National Highway-Rail Crossing Inventory File (National Inventory File). Users can enter data in an electronic version of the U.S. DOT Crossing Inventory Form, FRA F 6180.71. GX32 displays the DOT Accident Prediction values for open Public at-Grade crossings, and has a calculation feature which allows for the determination of Accident Prediction values for actual and hypothetical crossing parameters. GX32 also displays the Highway-Rail Grade Crossing Accident/Incident Report data, Form FRA F 6180.57, for crossing accident records.

GX32 has a self-contained database which allows the user to retrieve and display the data for a crossing or a group of crossings, updated records, preview and print reports, produce electronic

updates for submission to FRA, and perform other administrative functions. It can be used to update or close existing crossings, re-open closed crossings, and add new crossings.

The GX32 software package includes a custom database which contains the crossing records for the requesting agency, reference tables for the Codes for States, Counties, Cities, and Railroads, and the programs to run the system. GX32 users can make updates to their data as often as they desire. Periodically (at least once every 3 months), the user should upload these changes to the processing contractor, CITI, to update the National Inventory File.

The system requirements for the GX32 software are:

- IBM PC or compatible computer,
- Minimum 25 megabytes of free hard disk storage,
- Minimum of 16 MB of RAM,
- Microsoft Windows 95, 98, 2000, NT, or XP. It will not work with Vista.

The software features both (1) single crossing record updating, and (2) mass record updating for a selected group of crossings. GX32's back up and restore utilities allow the user to restore lost data that has been backed up to diskette or other location.

The user can browse through all of the crossings in the database, or just a subset of the crossings (e.g., all Open Crossings, or just those that are Open Public at-Grade). GX32 allows the user to rapidly shift from the browse display to the edit mode to view and update an individual crossing record formatted in a template modeling the U.S. DOT Crossing Inventory Form. In the edit mode, Look-up Tables are displayed to allow selection for specific entries for certain fields including Railroad, County, City and Timetable Station.

GX32 runs extensive edit and validation checks on updated data and alerts the user to any errors found. The user can fix these errors prior to submitting the updated file. The submitted updates and additions are again checked and edited by the processing contractor to ensure accuracy. Additions and updates which do not pass the edit program will be returned to the submitting agency for review, re-processing, and re-submission.

The Software

The current version of GX32 V2.0 allows the user to maintain and update the the U.S. DOT Crossing Inventory Form (11/99). It can be installed as either a single user system or as a multiuser system. In a single user system, the GX32 application and database will be on a single PC. In a multiuser setup, the database will reside on a network server while the application is run from various client machines so that several users can use GX32 simultaneously. Normally, GX32 only contains a single database for one State. Thus, if a user requires a GX32 database that consists of data involving two (2) States, than a special GX32 installation package is prepared by the processing contractor.

Obtaining GX32 Package and Inventory Data

The GX32 software package is maintained for FRA by the processing contractor, CITI. The FRA provides the GX32 package and data free of charge to States and Railroads so that they can maintain and update their crossing inventory data. The software is provided on CD ROM. States and Railroads who are interested in obtaining a copy of GX32 and a custom copy of the inventory database for their State or Railroad can contact the FRA Project Office Helpdesk between the hours of 8:00 am - 8:00 pm EST, at 1-888-372-9393 x243, or write to:

Creative Information Technology, Inc.
 FRA Project Office, GX32 Program
 4601 N. Fairfax Drive, Suite 1100
 Arlington, VA 22203

GX32 Tool Bar Features

Using GX32 is easy! GX32 displays the data and information in different windows, and allows the user to click on menu selections and Tool Bar buttons to access GX32's features. The Tool Bar is located at the top of the GX32 application window. The Tool Bar features include:

- (1) **Multi Select View:** The user can look through a list of crossing records, browse through the data, and select a single crossing record, or a group of records. Selected records can be previewed, updated, and printed. Accident Prediction values can be obtained for open public at-grade crossings.
- (2) **Filter Crossings:** The user can specify what types of crossings to display in a list of crossings such as Public, Private, Pedestrian, at-Grade, Railroad Under, Railroad Over, and either only Open crossings or all Open and Closed crossings. Also, the user can have only those records with 'Errors' displayed.
- (3) **Mass Processing:** The user can make common changes to a group of crossing records all at once such as changes to the Railroad, Division, Subdivision, Branch, Parent Railroad, Crossing Owner, Speeds and Traffic Counts, and Contact data. The user can also Close a group of crossings.
- (4) **New Crossing:** The user can add a new crossing by entering **all** of the data into an electronic version of the U.S. DOT Crossing Inventory Form.
- (5) **Edit/View Crossing:** The user can view and make changes to an existing crossing record.
- (6) **Show First Page:** The user can go directly to the first screen for viewing.

- (7) **Show Previous Page:** The user can go to the previous screen for viewing.
- (8) **Show Next Page:** The user can go to the next screen for viewing.
- (9) **Show Last Page:** The user can view the last screen without having to view the others first.
- (10) **Save Crossing:** In the **New Crossing** and **Edit Crossing** windows, the user can save the changes that were made to the crossing record.
- (11) **Cancel Changes:** The user can cancel the changes that were made to the crossing record.
- (12) **Error List:** The user can see a list of errors for a particular crossing record.
- (13) **Errors Report:** The user can obtain a report of errors for all saved updated and new crossing records.
- (14) **Table Lookup:** The user can search through tables (e.g., Railroad, County, City) and select an entry from a table.
- (15) **Accident Prediction:** The user can view the DOT Accident Prediction values, and have these values calculated for actual or hypothetical data.
- (16) **Incident Reports:** The user can view the Highway-Rail Grade Crossing Accident / Incident Reports for a crossing.
- (17) **Report Changes:** The user can view the changes to a crossing record and the Effective Date of the change.
- (18) **Sql Query:** The user can create queries to search through the crossing data and retrieve and output the results to a report designed by the user.
- (19) **Print:** The user can preview a document and print it.
- (20) **Other Tools:**
- Upload:** Send additions and updates to the FRA contractor.
 - Replace:** Exchange the data set in the user's system with new current data provided on CD.
 - Up Internet:** Create and send a file of the changes via the Internet.
 - Options:** Set up options to specify identifying data such as State, Railroad, Point of Contact, Telephone Number, etc.

Backup: Saves a copy of the data to diskette, CD, or a file.

Restore: Reload the data that was backed up. (Note: Be careful. Restoring will overwrite the GX data files with the data in the Restore File.)

Exit: Closes and exits the utilities window.

(21) **Technical Support:** Provides information on where to get technical support.

(22) **Help:** Provides a User Guide for help when using the system and obtaining descriptions for the Inventory data fields.

GX32 Menu Bar Features

The user can also make selections from the Menu Bar which displays drop down menus. The Menu Bar selections are:

File: New Crossing (add new crossing record)
 Edit/View Crossing (view and/or update existing crossing record)
 Save Crossing (save changes to a crossing record)
 Report Changes (view changes to a crossing record)
 Cancel Changes (cancel changes to a crossing record)
 Print (same as **Print** button)

View: Multi Select (same as **Multi Select View** button)
 Filter Crossings (same as **Filter Crossings** button)
 Error List (same as **Error List** button)

Tools: Accident Prediction (same as **Accident Prediction** button)
 Accident/Incident Reports (same as **Incident Reports** button)
 Mass Processing (same as **Mass Processing** button)
 Sql Query (same as **Sql Query** button)
 Errors Report (same as **Errors Report** button)
 Other Tools (**Upload, Replace, Options, Back-up, Restore**)

Help: Get help and technical support.

Browsing through a List of Crossing Records

A quick way to look through the crossing data is to browse through the crossing records in the **Crossings** window. If a filter has been set (e.g., the user specifies that only Public at-Grade crossings are to be displayed), then only the filtered crossings will be displayed.

A crossing record that is selected can be viewed, updated and printed. Previous update information can also be displayed for a crossing. For open public at-grade crossings, Accident Prediction values can be viewed. Accident/Incident data for the past 5 years (not including the current year) can also be viewed.

When obtaining a list of Crossings, the headings for the data element rows are:

<u>Heading</u>	<u>Description</u>
Crossing	Crossing Number
RR	Railroad Abbreviation
Division	Railroad Division Name
Sub Div	Railroad Subdivision Name
Branch	Railroad Branch Name
Stat	Status of the Crossing: Closed New Open
Typ	Type of Crossing: Pedestrian Public Private
Pos	Position of Crossing: At-Grade Railroad Over Railroad Under
St	State Abbreviation
City Name	City
County Name	County
Street	Street
WD	Warning Device 1. No Signs or Signals (NO) 2. Other Signs (OS) 3. Crossbucks (XB) 4. Stop Signs (SS) 5. Special Active Warning Devices (SP) 6. Highway Signals, Wigwags, Bells (HS) 7. Flashing Lights (FL) 8. Gates (GT) 9. Four quad (or full barrier) Gates (FQ)
Milepost	Milepost

To select a crossing, the user merely clicks on the crossing record. The user can mark numerous crossings in order to mass update a group of crossings at one time.

Searching for a Particular Crossing Record

In the **Crossings** window, the user can search for a crossing record that contains specific data. For example, the user can search for a record with a particular crossing number, or for a crossing on a specific Street. The user can also search through the items in the list (e.g., Crossing, Railroad, Division, City, Street) to find the desired location. GX32 will display a list of crossing with all existing values for the row headings previously described for the search item.

Displaying Only Certain Types of Crossings (Filtered Crossings)

The user can display only those crossing records that are Public, Private, or Pedestrian, and either at-Grade, RR Under, RR Over, and/or any combination of these for all Open or Closed crossings. The user can choose and select the Type, Position, and Status of the crossings to be displayed. The user can also select only records which have errors in them, or newly added crossings.

Running Queries

GX32 allows the user to run queries to search for specific data in the GX32 system. The user can create a set of conditions which are used to search for a list of crossings. As an example of such a query, the user can search through the database to find all crossing records in a specific State with an Effective Date before 1981. The results of the search will be a report of the crossings found in the State with an Effective Date before 1981, and the report will display the Crossing ID number, the Operation Railroad, the State, County, City and Street, and the Effective Date. The report will sort the crossing records in ascending order by Effective Date.

Effective Date

The Effective date is the date that a change was completed or put into effect. If it is verified that there are no changes in the data and the crossing still exists, and the most recent record is over 5 years old, then an effective date of January 1 of the current year should be used. If the user has not finished updating the Crossing record and saves it, and then edits the record at another time, GX32 will keep a record of the update and allow the user to make additional changes later without changing the Effective Date again.

Adding a New Crossing

GX32 allows new crossings to be added. If an invalid number is entered, GX32 will alert the user to this and the user will have to correct the entry and enter a valid number. When the user saves the data for a **New Crossing**, GX32 will prompt the user of any errors and give the opportunity to correct them. For a New Crossing, the crossing will not be added to the National Inventory File if it is not error free.

Updating a Crossing Record

The most important feature of GX32 is updating. States and Railroads can update crossing data and then periodically upload the data to the processing contractor where the updates are incorporated into the National Inventory File. If the crossing is not Public at-Grade, then Parts II through V are normally not applicable. However, GX32 does allow data to be entered in Parts II through V for Private at-Grade crossings if the user desires and provides the data.

For those fields where GX32 provides a Look-up Table, the user will first click on the item and then click on the **Table Lookup** button. This will bring up a list of valid entries. The user can search through this list and select the appropriate entry.

FIELDS WITH TABLE LOOKUP FEATURE AVAILABLE

- Part I** 1. Operating Railroad; 2. State; 3. County 4. Railroad Division or Region; 8. RR I.D. No.;
9. Nearest RR Timetable Station; 10. Parent RR; 11. Crossing Owner; 12. City;
21. High Speed Rail Corridor ID
- Part II** 4. Does Another RR Operate a Separate Track at Crossing? If Yes, Specify RR;
5. Does Another RR Operate Over Your Track at Crossing? If Yes, Specify RR
- Part V** 1. Highway System; 3. Functional Classification of Road at Crossing

When the user is finished updating the crossing record, they click on the **Save Crossing** button to save the changes and exit the record. The software will check the data for errors and display any error that exists. For new crossings to be added to the National Inventory File, all errors must be corrected.

In the multiuser setup, only one user may have a particular crossing record open at a time. If a user tries to edit a record that another user is already viewing, an error message will occur informing the user. The record will be locked from all other users until the first user saves or closes the record. Once complete, edits made by one user may be viewed by another user.

The software keeps a record of changes made to a crossing, which lists the Effective Date that the data was changed or updated, and the items that were changed. If no changes are found, a message will appear stating such.

Updating using Mass Processing

The user can take advantage of GX32's Mass Processing feature to mass update a group of marked crossing records to change the name of the Railroad, Division, Subdivision, Branch Line, Parent Railroad, Crossing Owner, Train Speeds and Train Counts, and the Contact Information for the State, Railroad, and Emergency telephone numbers. It can also be used to Close a group of crossings.

Accident Prediction

The GX32 system contains Accident Prediction data for Open Public at-Grade crossings. The software will display the DOT Accident Prediction values as well as the Fatal Probability values, and Casualty Index values for the crossing. The user can play “What If?” games by changing the data to hypothetical data values to see the effect on the Accident Prediction values. For Warning Devices, Highway Paved, and Urban/Rural, the user can make a selection from the drop down lists and the Accident Prediction, Fatal Probability, and Casualty Index will be calculated for the changed data fields.

Viewing Accident/Incident Data

GX32 allows the user to view Accident/Incident data (for the past 5 years) on the Highway-Rail Grade Crossing Accident/Incident Report. If there are any reports, a print preview screen will appear and display the reports. The user can print the report and go to other additional accident reports.

Sending Updates to be Processed

One of the main features that GX32 provides States and Railroads is the ability to easily send the updated data in the correct format to update the National Inventory file. States and Railroads can directly and conveniently upload their updated data files to the processing contractor. GX32 will create an upload file that contains all changes/updates and all added new crossing records. The user should upload the updates at least once every 3 months. The program will alert the user if a upload file has not been created in the last 90 days.

To transmit the upload file electronically to CITI, the user uses a communications program like Microsoft Outlook. The user simply attaches the upload file to an e-mail and sends it CITI at Support@fra-safety.net. Another option is to save the upload file to diskette or CD, and then mail it to CITI.

Replacing GX32 Data with Current FRA Inventory Data

The user replaces the old data with new current Inventory data that is sent by CITI. Normally, the user will first upload their updates and any new crossing additions to CITI. Once the upload data has been processed by CITI, and the National Inventory File updated, CITI can send the user the most current data to the user to replace in their GX32 system. It is important to know that the **Replace** feature will replace all data in the user’s GX32 system with the new updated data. Thus, the user should not do any updating with the GX32 software while the data is being processed, but instead, wait until the new CD is received and loaded into the system to update the GX32 database.