Format for Submitting Electronic Updates
to the National Highway-Rail Crossing Inventory File

The various methods for submitting updates to the US DOT National Highway-Rail Crossing Inventory File include:

(1) Hardcopy using the Crossing Inventory Form,

(2) Letter or Email for a small number of updates for a single field
(like closing a list of crossings),

(3) Excel files for a limited number of fields (such as updating Latitude and Longitude),

(4) GX32 Software will electronically generate updated files to be sent to FRA
(GX32 is FRA's Highway-Rail Crossing Data Maintenance System using a
Windows compatible personal computer),

(5) Electronic File in .mdb or .txt Format: State or Railroad generated electronic update
files using either a .mdb or .txt formatted file structure can be submitted but must
be in the Data Field Specification format,

(6) FRA XML Web Services can be used to submit updates in XML Format..

The following instructions are for preparing State or Railroad generated electronic files in .mdb or .txt format for submitting updates to the National Highway-Rail Crossing Inventory file.

Instructions for Formatting an Electronic National Crossing Inventory Update File

1.   The "Data Field Specification" document (U.S. DOT Crossing Inventory Form - *Data File Structure and Field Input Specification* dated February 28, 2002) defines the field layout and submitted data MUST follow this layout. The *Data Field Specification* can be found on FRA's Website at http://www.fra.dot.gov/us/content/801 under the heading "Inventory File Data Description and Field Format," select "Data Field Specification."

2.   If an .mdb file is generated:

   a.   All fields must be Text (even if a field is Numeric in the FRA Inventory File Format).

   b.   The same Field Names, Field Sizes, and current valid values and ranges must be used as defined in the *Data Field Specification* document dated Feb 28, 2002.

3.   If a field is not being updated, that field must be completely filled with asterisks (*) in the defined field length, (e.g., HIGHWAY: "*******", GATES "**"). This applies to fields that are both Character and Numeric as defined in the *Data Field Specification*. This applies to both .mdb and ASCII positional file formats.

4.   For items not on the Inventory Form, but that are in the File Structure, and for obsolete Field Names: If a field in the *Data Field Specification* does not represent an item on the current Inventory Form (internal processing examples: EDATE, BATCH), or because it is an obsolete field (obsolete examples: DAYSWT, XBUCKRF, GATERW), then the field must be completely filled with asterisks or left completely blank. Fields coded like this (for items not on the current Inventory Form or obsolete items) will be ignored (if in

ASCII positional) and no change in data will occur.   Fields on the current Inventory Form will have an item number in the Item Number column in the *Data Field Specification* document dated February 28, 2002.

5.   If a <u>Character field</u> is being updated, then:

a.   For an <u>ASCII positional file</u>, enter the desired data starting at ASCII start position, and then follow it with blanks to the ASCII end position (e.g., HIGHWAY is a 7 character field starting in position 66 and ending in position 72. It should be indicated as "SH-1_ _ _" where (_) are blank spaces.) If the field is <u>not</u> to be updated and the current data retained, then enter asterisks (*) in the entire field.   If the information is to be deleted and made <u>blank</u>, fill the entire field with the exact number of blank spaces. For example, if there is data in the HIGHWAY field, and it is to be deleted, and the field is to be made blank, indicate it as "_ _ _ _ _ _ _" where the number of blank spaces (_) match the size of the field, which is 7 characters - seven blanks in this case.

b.   For a <u>.mdb file</u>, just enter the new value in the field to be changed or updated.   If the field is <u>not</u> to be updated and the current data retained, then enter asterisks (*) in the entire field.   If the information is to be deleted and made <u>blank</u>, fill the entire field with the exact number of blank spaces.

6.   If a <u>Numeric field</u> is being updated, then:

a.   For an <u>ASCII positional file</u>, all positions in the field must be provided when updating the field. Insert leading "0's" if needed (e.g., DAYTHRU: "02"). When deleting a value, enter all "0's" (e.g., DAYTHRU: "00").   If the field is <u>not</u> to be updated and the current data retained, enter asterisks (*) in the entire field.   For a Numeric field, the blank (_) is not a valid value. A "0" is a valid value in a Numeric field and it is also the default value, but it does not print as "0" on the Website inventory record - it shows as blank. Thus, if the field to be deleted or made <u>blank</u>, fill the field with "0's."   Do not use blanks for "0." If a field is submitted with blank spaces, it will be ignored and the current data will not be changed.

b.   For a <u>.mdb file</u>, enter the new value (e.g. DAYTHRU = "2") in the field to be changed or updated.   Enter asterisks (*) in the entire field if the field is <u>not</u> to be updated and the current data retained. For a Numeric field, the blank (_) is not a valid value. A "0" is a valid value in a Numeric field and it is also the default value, but it does not print as "0" on the Website inventory record - it shows as blank. Thus, if the field to be deleted or made <u>blank</u>, fill the field with "0's." Do not use blanks for "0." If a field is submitted with blank spaces, it will be ignored and the current data will not be changed. All fields must be submitted as Text, even if the field is Numeric in the file format.

7.   <u>Required Data Fields for all Records</u>: Data must be provided for the following fields for every crossing update being submitted: INIT, CROSSING, REASON, EFFDATE,

STATE, CNTYCD, RAILROAD. Provide the field name, and then provide the data for the fields to be updated.

8.   Special Instructions:

a.   Latitude and Longitude: Submit Latitude and Longitude, in Decimal Degrees, with the explicit decimal, with the "-" sign for Longitude, and with 7 digits after the decimal point.

Latitude (LATITUDE):   xx.xxxxxxx (e.g.,   35.3014865)
Longitude (LONGITUD):   -xxx.xxxxxxx (e.g., -085.2802014)

b.   Another Railroad Operating thru the Same Crossing, or having a Separate Track thru the Crossing (SEPRR and SAMERR):   Each of these fields is a 16 character field and can contain up to four valid railroad codes. If any railroad code is less then 4 characters, follow the last character of the code with blank spaces to insure that the code takes up four spaces. Also, any unused code spaces will need to have four blank spaces included.   For example, if SEPRR is to contain UP and BNSF, populate this field as follows: "UP_ _BNSF_ _ _ _ _ _ _ _" where there are two blank spaces after UP and an additional eight blank spaces after BNSF.

9.   Common Errors encountered during processing:

a.   Number of Daily Train Movements (TOTALTRN, TOTALSWT, DAYTHRU):   The field "TOTALTRN" must be greater than or equal to the sum of TOTALSWT + DAYTHRU, otherwise, an error will be generated which will have to be corrected before the data can be processed.   Data should be provided for all three train movement fields when updating the Number of Daily Train Movements.

b.   Speed of Train at Crossing (MINSPD, MAXSPD, MAXTTSPD):   MAXSPD must be less than or equal to MAXTTSPD, and MINSPD must be less than MAXSPD, otherwise, an error will be generated which will have to be corrected before the data can be processed.   It is advisable to provide data for all three train speed fields when updating Speed of Train at Crossing.

10.   Record Layouts: There are two Record Layouts that may be used for an update file. These are:

a.   Record Layout A: With this layout, a single record will have all the updates for a particular crossing.   This layout must follow the FRA Inventory Format, in which all fields in a record are for a single crossing. With this type of layout, if there are 10 crossings that are being updated, then the update file will have 10 records in it.

b.   Record Layout B: With this layout, each record will have a single update for a crossing, which has a field "FIELDUPD" that has the name of the field being updated, and then a field containing the update value "UPDATVAL."   With this

layout format, if 10 crossing are being updated, and 10 fields are being updated for each of the first 8 crossings, and 1 update for the 9th crossing, and 51 fields for the 10th or last crossing, the update file will consist of $80 + 1 + 51 = 132$ records.

For Record Layout B, do not submit a record for a field that is not to be updated. Thus, do not fill the UPDATVAL with asterisks (*) to indicate that the field is not being updated. If UPDATVAL is left blank, or filled with spaces, and FIELDUPD is a Character field, it will be interpreted as update to blank-out or delete a value. If UPDATVAL is left blank, or filled with spaces, and FIELDUPD is a Numeric field, it will be ignored, and no update will be made for this record. See "Attachment A" for the Record Layout B format.

11.   The Update File Name needs to be in the following format:

XNG | RR OR STATE ABBREVIATION | MMDDYY.MDB (or .TXT)
(e.g., XNGWI061603.mdb where the .mdb format file starts with "XNG" submitted by the State of Wisconsin on June 16, 2003)

12.   Submitting the Update File:

a.   An electronic update file should be emailed to rxiupdates@frasafety.net. Specify the number of records being submitted, date submitted, the submitting agency, and contact information for the person sending the file.

b.   A magnetic media (disk or CD) update file should be mailed to:

Inventory Crossing Updates
FRA Project Office
Creative Information Technology, Inc.
4601 N. Fairfax Drive, Suite 1100
Arlington, VA 22203
(O) 703-548-3313

13.   XML Format: When it is desirable to use FRA's Web Services to submit updates in an XML File format, contact FRA Project Office Support at the beginning of the development process and refer to the separate instructions located at http://www.fra.dot.gov/us/content/801 , under "Instructions for Submitting XML Format Inventory Updates" under the section "Inventory Updating and Database Reconciliation Processes."

14.   Helpdesk: For assistance, contact the FRA Project Office Support (Helpdesk) by telephone at 888-372-9393, or email at Support@frasafety.net .

Attachment A
Record Layout B

The file format for Record Layout B is:

Field Name	Type	Width	Start (End) for ASCII	Description
INIT	TEXT	1	1 (1)	Initiating Agency
CROSSING	TEXT	7	2 (8)	Crossing Number
REASON	TEXT	1	9 (9)	Reason
EFFDATE	TEXT	6	10 (15)	Effective Date (YYMMDD)
STATE	TEXT	2	16 (17)	State (FIPS Code)
CNTYCD	TEXT	4	18 (21)	County (FIPS Code)
RAILROAD	TEXT	4	22 (25)	Railroad Code
UPDATFLD	TEXT	15	26 (40)	Name of Field to be Updated
UPDATVAL	TEXT	20	41 (60)	Updated Data

1. Follow these Instructions except:

    a. When a field is not being updated (it has to be filled with asterisks for Record Layout A), it does not have to be filled with asterisks for Record Layout B.

    b. Use the Name file:
    XNGALT | RR OR STATE ABBREVIATION | MMDDYY.MDB (or .TXT) (e.g., XNGALTBNSF061603.txt).

2. The value in UPDATFLD is the name of the field being updated. The names must be those contained in the "Field Specification" document.

3. The value in UPDATVAL field must follow the input specifications and field sizes contained in the "Field Specification" document.

4. If the Narrative field (NARR) is to be updated, and the narrative information text is more than 20 characters, provide the information in a separate file named

    XNGNAR | RR OR STATE ABBREVIATION | MMDDYY.MDB (or .TXT) with the following format:

Field Name	Type	Width	Start (End) for ASCII	Description
INIT	TEXT	1	1 (1)	Initiating Agency
CROSSING	TEXT	7	2 (8)	Crossing Number
REASON	TEXT	1	9 (9)	Reason
EFFDATE	TEXT	6	10 (15)	Effective Date (YYMMDD)
NARR	TEXT	100	16 (115)	Narrative