FH Advanced
Feature Reference

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Contents

Chapter 1

About This Guide

The Advanced Feature Reference is a comprehensive reference for the following FIREHOUSE Software advanced features:

- Import External Data, Chapter 2
- System Rules and Default Values, Chapter 3
- Setup Automated Tasks, Chapter 4
- Station Management, Chapter 5
- User Fields, Chapter 6
- Creating Queries, Chapter 7
- Creating and Modifying Reports, Chapter 8
- Report Designer Layout, Chapter 9
- Auto-Generated Narratives, Chapter 10
- Signature Capture, Chapter 11
- Creating and Modifying Graphs, Chapter 12
- User-Defined Fields in Transaction Files, Appendix A

Additional information is available while running FH by pressing **F1**.

Who Should Use This Reference?

Procedures in this manual assume FIREHOUSE Software is already running, that you have a basic understanding of how to navigate in Windows programs (for example, you are familiar with how to use a mouse to select a menu), and are familiar with the basic purpose of each module installed.

If FIREHOUSE Software has not been installed, follow the installation instructions included with the installation CDs.

If you are not familiar with FIREHOUSE Software, you should familiarize yourself with the basic functions of the software detailed in the *Tutorial* section of the **User Guide**. When you encounter an unfamiliar form press **F1** to display specific information about the form. Access to related information can be displayed by pressing **Click for related topics...**.

Advisories

There are three levels of advisories present. Each level is indicated with a symbol:
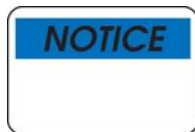
 Notice advisories contain general information that may save time and effort within FH.

 Caution advisories contain information that can help you avoid minor inconveniences.

 Danger advisories contain crucial information for avoiding loss of information.

More Information

If there are any questions this manual does not answer, check the FH 7 help file provided with all versions of this program. To access the help file from FH, press **F1** or select an option from the **Help** menu.

Use The Help File For Procedures

The help file is context sensitive. When you are using specific areas in FIREHOUSE Software, press **F1** and information about the area is displayed. The help file can also be run separately from within FH by selecting the **Help** menu **FIREHOUSE Software Help File** option.

With the help file displayed, you can use the FH 7 Help File *Contents* to locate specific information, or go to *Search*, type in the keywords to search for, then press **List Topics**. Select a topic then press **Display**.

More help on using the help file is available from the Tips for Using This File link at the bottom of the help file home page.

Chapter 2

Import External Data Source

Much of the information that needs to be entered into FIREHOUSE Software may already be available. Rather than reentering the data into FIREHOUSE Software manually, you can import data from other programs as long as the data is in or can be converted to a format accepted by FH.

Acceptable data sources are listed on page 7.

The process for importing external data into FH is straightforward:

- Prepare data source. See page 6 for details.
- Access external data source definitions area. See page 9 for details.
- Add new definition. See page 9 for details.
- Preview Import (optional). See page 19 for details.
- Run External Data Source Definition. See page 19 for details.

Prepare Data Source

Familiarity with FH and planning prior to importing external data will help assure that the data is properly imported. Before starting the import process, consider the following:

- Identify import data elements. Decide what data elements from the source should be imported into FH.
- Complete master records, if necessary. Ensure that master records are available if the source includes child records.

Master Records are described on page 7.

- Save data source to an acceptable format if it is not already in an acceptable format.

Acceptable formats are listed on page 7.

Identify Import Data Elements

To be able to use the source data, you should determine if FH tracks the information and where. Run reports to determine the FH data structure to determine where the source information should be directed.

For a complete listing of FH data tables:

- From the **Reports** menu, select the **Administrative Reports** option. The **Reports** listing is displayed.
- Select the *Database Structure Report*.
- Press **Run**. The **Output Report To** form is displayed.
- Select an output option then press **OK**. The **Query Parameters** form is displayed.
- Press **OK**. A complete listing of FH data tables is directed to the specified output.

At a minimum, your import must create values in the required fields to create a record in that area. For example, to create a valid staff record, you must import or create a Staff ID (**STF_MAIN.DBF**, *Staff ID* field), and a First, and Last name (**STF_MAIN.DBF**, *FIRST* field and *LAST* field).

If you do not know which fields are required, run the import definition, then press **View Import External Data History Log...** after the import results are displayed. If records are skipped because of missing fields, the missing fields are referenced. Also determine required fields from the main data entry form for the record — by default empty required fields are yellow and completed required fields are blue.

Contact area agencies and find out what information they have available. Consider the following possibilities:

- Streets: Your city or county government may have a list of streets for your coverage area.
- Occupancy Records: Your city or county government may have records about properties that you can import into the Occupancy Management module.
- Hydrants: Your local water works department may have hydrant information.

Interfaces to a number of CAD systems are available. Contact your sales representative for more information.

Master Records

Master records contain primary information of a specific type (for example, staff information). Related child records include additional details about master records when additional detail is available, eliminating the need for empty data elements in the master record. Master and child records are related together using an ID. The ID field is a unique value that identifies a specific unique record, and when used in a child record, associates the child record with a specific master record.

When importing external data that goes to target FH child records, a corresponding master record must be available. For example, staff records need to be added to FH before you can import staff activities for that staff member. When you import a child record that relates to a master record, you must use the exact ID FH uses to identify the master record. Generally you will be importing external data into master records.

Save Data Source to Acceptable Format

FH can import the following data formats directly:

Acceptable Source Formats	Description of the Source File Format
Comma-Delimited .csv file	Fields are separated by a comma (","). Most spreadsheets and databases can generate this format.
Tab-Delimited .txt file	Fields are separated by a tab. Most spreadsheets and databases can generate this format.
Space-Delimited .prn file	Fields occupy defined positions in the source file. Some spreadsheets and databases can generate this format.
.DBF Table	Fields are stored in a standard database format. An advantage to this format is that fields in the source will be identified by a field name.

| ODBC Data Source | ODBC is an abbreviation for *Open DataBase Connectivity*, ODBC makes it possible for FH to access any ODBC-compliant data. The ODBC source is set up outside of FH before FH can use the source. |

If your data source is not in one of the accepted formats, try exporting the data into an accepted format. If the external data source cannot export to an acceptable format, try a third-party program (for example, spreadsheet programs can often open a variety of data types and are generally capable of saving to a format accepted for FH import) to open the external file, then save it to an accepted format.

Create an Import Definition

An import definition is a set of instructions that include a path to an external data source and directions for where external source data elements should go in FH target tables. You create the import definition using FH.

Accessing External Data Imports

You can create as many external data imports as needed.

NOTICE Installable Component	Import definitions can be shared between separate departments using Copy to/Install from feature. This feature is described in the help file "Copy and Install Components" topic.

To Add an External Data Definition

✛ From the **Administration** menu, select the **Database Administration** option, **Import From External Data Source…** option. The **External Data Imports** form is displayed.

The **External Data Imports** form *Import* section lists all import definitions added to the system.

See page 19 for the steps to preview an import. See page 19 for the steps to run an import definition.

With the **External Data Imports** form displayed, press **New**. The **Select Import Type** dialog is displayed.
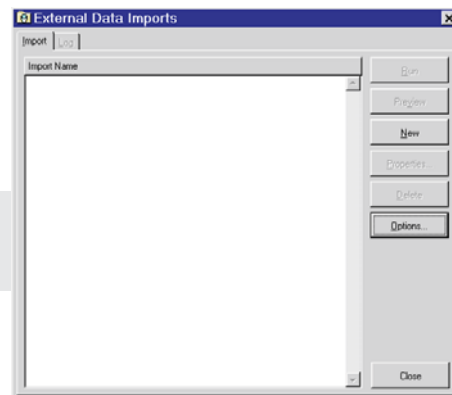
I. Select either **Standard Database Import** or **Lookup Table Import…**

✛ Choose *Lookup Table Import* if the source file only includes data to import into a single category in a specific lookup table (for example, the "Streets" category in **General System Codes**).

✛ Select **Lookup Table**. The *Category* field is required.
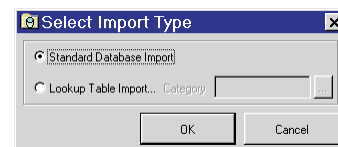
- Press ⬚ and highlight a lookup table and category, then press **Select**. The selected lookup category is added to the field. The rest of the process for completing the import definition is the same as for a standard import, except target fields are all automatically added for the lookup.
- Choose **Standard Database Import** for source files that include non-lookup table data or lookup table data for multiple categories.

2. Press **OK**. The **External Data Import Definition** form is displayed.

3. Type the name of the import in *Import Name* and select the external data source.

NOTICE
Suggestion

Select a name for the import definition that briefly describes the type of data included in the import.

4. Specify the type of source data in *Source Types*. Available types:
   - Comma-Delimited
   - Tab-Delimited
   - Space-Delimited
   - DBF Table
   - ODBC Data Source

NOTICE
External Setup
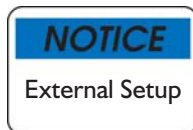
Select ODBC only if an ODBC source has been set up on your workstation. ODBC set up is completed outside of FH. FH cannot provide assistance in setting up ODBC sources for external data sources as part of its regular support services.

More information on acceptable data source formats is listed on page 7.

5. Select the source file:
   - Press ⬚ and locate the source file, then press **Open**. The path to the source file is inserted into the *Source File Name* field.
   - Press **ODBC Setup...** (only enabled when the selected source format is ODBC) to access and select the ODBC source.
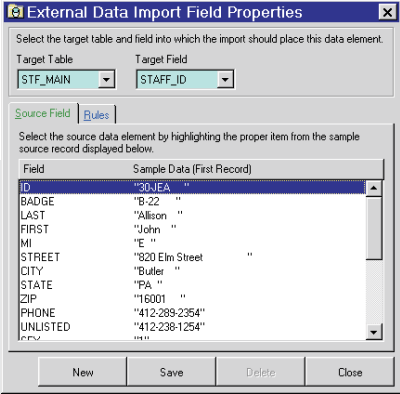
All data elements added to the import definition are added to the area.

The steps to add fields to the import definition are detailed on page 11. Setting rules for the import definition is described on page 15.

To Add a Field to a Definition

With the **External Data Import Properties** form displayed, press **Add**
to specify the target field
where a specific external data
element will be sent. The
**External Data Import Field
Properties** form is displayed.

The form to the right is displayed for
DBF source files. Sample data for
ASCII tab- and comma-delimited files
are displayed on the same form but
field names are not listed. Space
delimited files use a different form,
requiring that the start position and
length for each field be specified.

✚ Select the FH table where
   the source data will be imported in *Target Table*.

A complete list of FH target tables and fields is available. See page 6 for instructions.

✚ Select a field in the target table where a specific source field will be
   imported in *Target Field*. All available fields in the source file are
   listed in the   area with sample data from the first
   record. Note that the way the fields are named depends on the
   source type:

   ✚ **Comma-Delimited**. Source fields are listed by number, starting
      at "1". In the source file, fields are separated by commas. A
      paragraph return marks the next record.

   ✚ **Tab-Delimited**. Source fields are listed by number, starting at
      "1". Fields are separated by tabs. A paragraph return marks the
      next record.

   ✚ **Space-Delimited**. Source fields are located by their starting
      position and length.

   ✚ **DBF**. Source fields are identified by field name.

   ✚ **ODBC**. How fields are listed varies based on the ODBC source.

✚ Highlight the source field you want to direct into the selected target
   field. Setting rules for importing the field are detailed next.

✚ You can optionally specify additional rules for how the current field
   are imported:

- To automatically replace a target field value with a literal value or expression:

  - Click *Replace field with literal value or expression*. The **Replace field with literal value or expression** form is displayed.

  - Enter a literal value or expression. The value entered here replaces any value in the source field. Note that the value specified needs to match the format of the FH target field. For example, if the target field is numeric, the replacement value needs to be numeric.
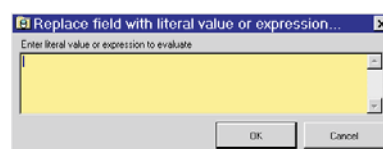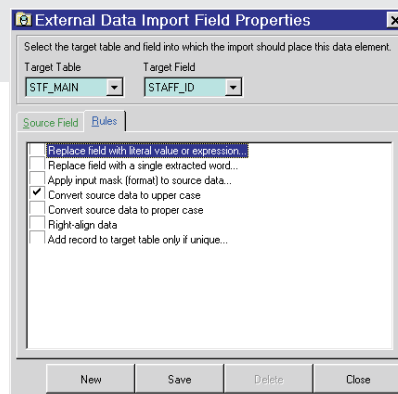
NOTICE

An Example

If you were importing staff member records and wanted the staff member's station to always be "2" even though the source staff member records may include values other than "2", you would type "2" (no quotation marks needed). The expression entered varies depending on the type of source file:

Comma-Delimited. Expressions refer to source fields as `DATA(x)` where **x** is the source field column.

Tab-Delimited. Expressions refer to source fields as `DATA(x)` where **x** is the source field column.

Space-Delimited. Expressions refer to source fields as `Substr(cRecord,x,y)` where **x** is the start position for the source field and **y** is the number of positions allocated for the source field.

DBF. Expressions refer to source fields as `source.field_name` where **source** is the temporary name assigned for the source database and **Field_name** is the name of the field from source table.

ODBC. Expressions refer to source fields as `odbc.field_name` where **odbc** is the temporary name assigned for the source database and **Field_name** is the name of the field from source table.

- Press **OK** to make the literal value or expression replace the source values when the import is run.

- Click *Replace field with literal value or expression* again to disable replacement (entered values are saved and available by enabling the option again).

✪ To choose a single word from a source field that includes multiple words to fill the target field:

- Check *Replace field with a single extracted word...* The **Replace field with a single extracted word...** form is displayed.

- Enter the word number and the character that always separates words in the source field.
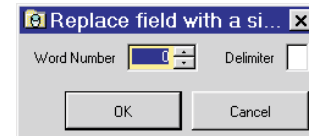
NOTICE

An Example

To select a street name in a source file that lists county, street name, and city in a single field with each word separated by a space, enter "2" in *Word Number*, and type a space in *Delimiter*. Only the second word in the source field would be imported to the FH target field.

- Press **OK** to import the specified word from the source field when the import is run.

- Click *Replace field with a single extracted word...* again to disable replacement (entered values are saved and available by checking the box again).

✪ To change source data format to match target table format (not checked by default):

- Check *Apply input mask (format) to source...* The **Apply input mask (format) to source data...** form is displayed.

- Type an input mask in *Enter input mask*. When you type **9** the alphanumeric character from the corresponding position of the data source field is imported. For example, **999** would import the first three characters from the data source field.

- Press **OK** to apply the input mask to the source file.

✪ To convert source data to all upper case, check *Convert source data to upper case* to convert source data field value to upper case as they are imported into the specified target field.

✪ To capitalize the first letter in the first word (remaining letters lower cased), check *Convert Source data to proper case*.
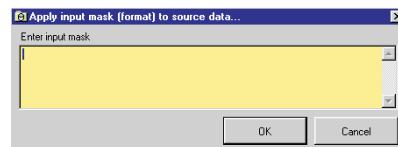
NOTICE

Multiple Selections

When both *Convert source data to upper case* and *Convert source data to proper case* are checked, proper case is applied.

- ✪ To right align data to the right side of the target field (filled to the left with spaces), check *Right-Align data*.
- ✪ To only import a source record if a specified value is unique:
  - ✪ Click *Add Record to target table only if unique…* The **Add record to target table only if unique…** form is displayed.
  - ✪ Type the name of the target field used to qualify whether the record is unique.
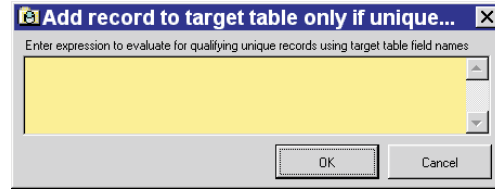
    Only records that contain a unique value in the source field are imported to the specified target field. For example, if the source field has a value repeated only the first record is imported; subsequent records with the repeated value are skipped.

You can add another field to your definition or save the current field properties and return to the import properties if all fields have been added.

- ✚ To save field and add another:
  - ✪ Press **CTRL + Y**, or position cursor over **Save** button, right click then select **Save + New**. The **Extended Data Import Field Properties** form is displayed.
- ✚ To save field and return to import definition:
  - ✪ Press **Ctrl + W**, or position cursor over **Save** button, right click then select **Save + Close**. The **External Data Import Field Properties** form is closed and the **External Data Input Properties** form is displayed.

Specifying Import Definition Rules

After all the fields have been added to the import definition, you are ready to define rules for the import definition.

To Add Import Definition Rules

With the **External Data Import Definition** form displayed, click the *Rules* tab. The *Rules* section includes options specifying how the imported data is treated.

➕ To overwrite existing FH records with duplicate import records, leave *Don't Overwrite existing records in target fields* unchecked. If source and target records have identical ID field values, the FH target records are replaced by the source values.
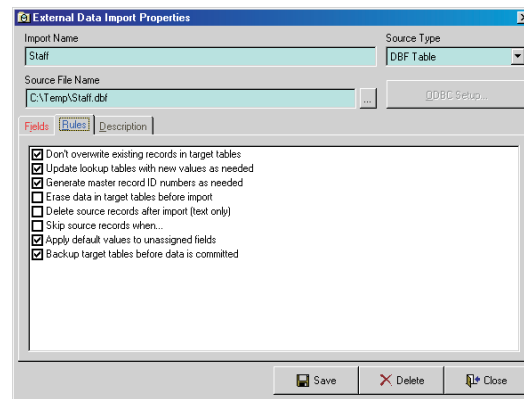
If you do not want to overwrite existing FH records, you can merge source record with target record when the source and target record IDs match, or skip source records entirely when the record ID exists in the target record.

➕ To merge or skip source records:

   ➕ Check *Don't overwrite existing records in target tables*.

   ➕ Select how records will be skipped:

   ➕ To merge source field values into target fields when the values are different, check *Don't overwrite, but merge source data into existing records*.

NOTICE

Merge Source Values Into Existing Record
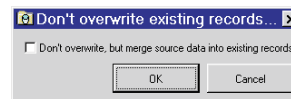
Note that if you opt to merge source data into existing records, all values selected in the source are imported and replace existing target values.

➕ To skip the source record when the source and target records have duplicate ID values, leave *Don't overwrite, but merge source data into existing records* unchecked.

➕ Press **OK**.

- Check *Update Lookup Tables with new values as needed* to automatically create entries in the appropriate lookup table when source data is imported into lookup driven target fields. The values in the source fields are used to create a list of codes for the lookup tables. You will need to add a description for each lookup code created after the import is run.

> **NOTICE**
> Record IDs
>
> A record ID must be unique for master records; you can not import records with duplicate IDs. A master record ID (also known as a key field) is a field that contains a unique value that identifies the master record. Generally, ID fields in FH include "ID" in the field name (for example, STAFF_ID).

- To automatically generate a master record ID in the FH target table if an ID is not available in the source, check *Generate master record ID numbers as needed*.
Leave this option enabled if you are importing new records into FH unless you have a specific reason for importing IDs from source to target. If you are merging source records into existing FH records, this option should be disabled. When merging, extra care needs to be taken to assure that the ID from the source is identical to the target ID.

> **CAUTION**
> Potential Data Loss
>
> Do not check the following option unless you want to completely erase FH target tables included in the import definition. Never create an import with this option unless you have a current backup of your FH data. The only way to recover deleted data is to restore your backup (assuming you have a current backup).

- Check *Erase data in target tables before import* to completely delete all records in the FH target table before performing the import.
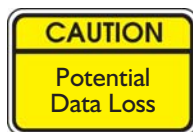
> **CAUTION**
> Potential Data Loss
>
> Do not check the following option unless you want to completely erase the source file referenced in the import definition. Never create an import with this option unless you have a method of restoring the source file.

- Check *Delete source records after import* to delete the source records after the import is run. Typically used when an external program generates the source periodically. For example, a computer aided dispatch system that outputs a daily file that includes incidents.

✪ Check *Skip source records when…* and enter an expression that, when true, skips a source record. The **Skip Source records when…** form is displayed.

   ✪ Type the source field name to evaluate. For ASCII tab- and comma-delimited source files, fields are referenced as **DATA(n)** where **n** is the number assigned to the source field. Use the field name for DBF source files.
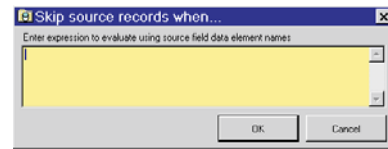
   ✪ Type the qualifier used to determine whether the source record should be skipped (that is, not imported).
Acceptable qualifiers are:

=	equal
==	exactly equal
$	Contains
>	Greater than
<	Less than

   ✪ Type the value used to determine if the record is skipped. Enclose the value in quotations. For example the expression **data(9) = '16001'** (where data (9) is the ninth field in an ASCII tab or comma delimited file), all source records that contain the value 16001 will **NOT** be imported into the specified target records.

   ✪ Press **OK**.

✪ Check *Apply default values to unassigned fields* to automatically fill in target fields that are not populated with values from the source data using default values that have been specified via **System Rules and Values**.

NOTICE
An Example

For example, if you have defined a default county to insert into new occupancy records, check *Apply default values to unassigned fields* to insert the default value in records created during the import process. Note that if the *County* field is included in the import, the source value for the county will be used.

✪ Check *Backup target tables before data is committed* to create a copy of the target tables before the source records alter the target tables.

NOTICE
Backup Files

When a backup is created prior to running the import, a copy of the target table is placed in the active database directory.
*.BAK is a copy of the DBF file
*.TBK is a copy of the FPT file.

✛ Save and close import definition.

To View Import Definition Log

With the **External Data Imports** form displayed and a specific import definition from the list highlighted, press the *Log* tab. The *Log* section is displayed.

✛ Highlight a specific date and external import then press **Details...** to view information about the external import.

✛ Highlight a specific date and external import then press **Delete** to remove the external import log.

NOTICE
Delete All Log Records
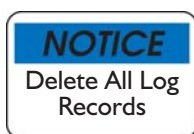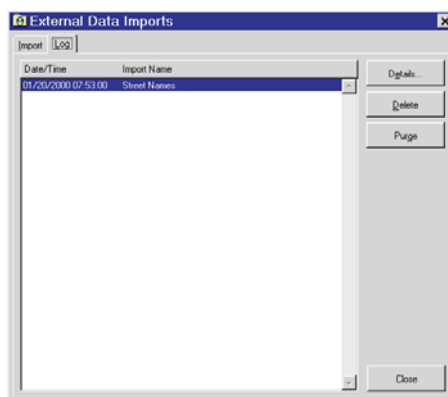
Each time an import definition is run, details about the import are appended to the end of the import log. The import log will eventually become very long.

✛ Press **Purge** and select **Yes** when prompted to delete all log records.

Using Import Definitions

Now that you have taken the time and effort to create an import definition, you are ready to use it. You can preview the results of your import definition without importing any records.

Previewing Import Definition

View the results of a specified number of records from an import without physically importing the source data.

NOTICE
Limit Preview Results
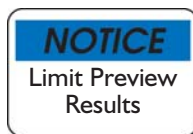
Using preview can minimize the time to test a new import definition when the source file contains a large volume of records since you can specify a limited number of records to include in the preview.

To Preview an Import Definition

With the **External Imports** form displayed:

Accessing the **External Data Imports** form is described on page 9.

✛ Highlight the external import to preview, then press **Preview**. You are prompted to select the number of records to preview.

✛ Specify the number of records from the source file indicated in the import definition you wish to preview in *Preview*, or leave "0" to preview all records in the source file.

✛ Press **OK** to review the results of the import definition.

✛ Press **Cancel** to cancel without previewing the import definition.

Running an Import Definition

When you run the import definition, you can view the import and commit if the results look valid.

To Run an Import Definition

With the **External Data Imports** form displayed:

➕ Highlight the import you wish to run, then press **Run**.

➕ Press **Yes** when prompted to run the import. A progress bar is displayed.

When the import is complete, the **External Data Import Pre-Commit Results** form is displayed.

➕ Press *Show Import Results for Table* to view results for FH target tables. Even when importing into a single target table, there may be multiple target tables if you opted to automatically update lookups.

➕ Review vital information detailing the import:

- *Records Accepted* displays the number of records processed without errors are listed.
- *Records Rejected* displays the number of records that were rejected are listed. Records are rejected for a variety of reasons.
- *Source Records Skipped* displays the number of records that were skipped.

➕ Remove invalid records from external import:

➕ Highlight the record in the *Records* area, then press **Remove**.

➕ Change lookup code descriptions if necessary:

➕ Select the lookup table in *Show Import Results for Table*.

➕ Press **Change Code Description...**

➕ Change the code description.

➕ Press **OK**.

➕ Repeat for each code you wish to add descriptions for.

➕ View import errors and exceptions:

➕ Press the *Errors & Exceptions* tab to view details about records excluded from the import. The *View Errors & Exceptions* section is displayed.

➕ Press **Commit** to add import results to your FH database.

➕ Press **Cancel** to exit the import without committing import results into the target tables.

Sample Import

Before running an experimental import, you should change to the DemoData directory. To change to the DemoData directory with FH running (if DemoData is not already selected), access the **File** menu **Logout** option, and in the **Login** form change the *Database* field to point to the DemoData database.

Import Sample Lookup Data Source

✪ From the **Administration** menu, select **Database Administration** option, then the **Import from External Data Source** option.

✪ Press **New** to define the sample import.

✪ Choose *Lookup Table Import*. The *Category* field is required.

✪ Press ⎯ next to *Categories*. The **Lookup Tables** form is displayed.

✪ Select *System Wide Codes*, drill down to select the *Streets* codes category, then select *Street Names*.

✪ Press **Select**. The **Select Import Type** form is displayed with the category name filled in ("ST NAME")

✪ Press **OK**. The **External Data Import Definition** form is displayed with the import name already completed.

✪ Press ⎯ next to the *Source File Name* to display a file location dialog. Find and select the source file.

✪ In the *Fields* section, press **Add**. The **External Data Import Field Properties** form is displayed with sample data from the first source record.

The following steps assume that you have created the sample file detailed at the start of this example.

✪ Select *PREFIX* for the *Target Field*, then highlight field 1. Position the cursor over the **Save** button, then right-click and select **Save & New** (or press **Ctrl+Y**).

✪ Select *STREET* for the *Target Field*, then highlight field 2.

For consistency, you want to ensure that all street names look the same. In the sample file you created, the second record lists the street name in lower-case (all the others are proper case). The next

---

Create Your Own Simple Data Source

For the purpose of learning, you can create a list of streets using a text editor. Open the text editor, type "E", press **Tab** on the keyboard, type "Barney", press **Tab** again, type "ST", then press **Enter** on the keyboard. Using the same steps, create several more streets.

When you're finished, the text file should look something like this:

```
E        Barney
ST
W        barney
ST
N        Broad
AVE
S        Broad
AVE
         Center
ST
```

Save the file, naming it STREET.TXT and note the location you save it to (for example, **A:**).

step will make all street names have the same proper case (that is, first letter capitalized).

✪ Click the *Rules* tab, then check *Convert source data to proper case*.

✪ Position the cursor over the **Save** button, then right-click and select **Save & New** (or press `Ctrl+Y`).

✪ Select *TYPE* for the *Target Field*, then highlight field 3. Position the cursor over the **Save** button, then right-click and select **Save & Close** (or press `Ctrl+W`). The **External Data Import Properties** form is displayed, and the fields you have selected to import are listed.

✪ Right-click while your mouse is over the **Save** button and select **Save & Close** (or press `Ctrl+W`). The **External Data Imports** form is displayed, and *Street Names* is listed as an external data import.

✪ Highlight *Street Names*, then press **Preview**. The **External Data Import Pre-Commit Results** form is displayed.

If this was a list of streets you wanted to import and everything looked OK, you would be ready to run the import and commit the data.

Chapter 3

System Rules and Default Values

CAUTION

Powerful Area
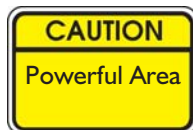
This powerful feature should be used only after careful consideration. Adding field requirements and validation rules can complicate data entry for your users since more information must be entered to complete a record and the information entered must satisfy more requirements. System Rules and Default Values allow the FH Administrator to create rules for record entry and default values automatically included in specific fields for new records. Rules specify whether fields are required to complete the record, define specific record completion requirements, and set required criteria for field values.

About Field-Level Rules and Default Values

You can add rules for all non-system fields. Rules are divided into the following types:

- *Default Value.* You may have fields that will always have a specific value. In those cases, you can specify a value to default in the field so when a new record is created, the default value is inserted. See page 25 for more information.
- *Require Field.* You can specify that data in a certain field is required when a record is entered in the data entry form. When a field is required but not complete, the field is listed as required in the validation results when you attempt to save the record. See page 26 for more information.
- *Disable Field.* Specify that the field is explicitly not available or unavailable based on conditional criteria. See page 26 for more information.
- *Error Condition.* Validation rules allow specific criteria to be defined in order for the field to be valid. If the field value is not valid under the rules you define, the field is tagged as invalid. See page 27 for more information.
- *Update the Value of Another Field.* You can update the value of any field in the current user selected table with a value or expression you specify.

Some fields are locked because they are part of system validations. You can add multiple rules of different types to a single field. You cannot modify certain properties of system fields.

NOTICE
Share System Rules

System Rules and Default Values can be shared between separate departments using Copy to/Install from feature. This feature is described in the help file "Copy and Install Components" topic.

You can add record-level rules to require that a record in a related child table be present. See page 28 for more information.

Adding System Rules and Default Values

All system rules and default values are added from the **System Rules and Default Values** form.

To Add Field Level Rules

✪ From the **Administration** menu, select the **System Rules and Default Values** option. The **System Rules and Default Values** form is displayed.

The **System Rules and Default Values** form lists all available record areas. There are specific tables associated with each record area. When data is entered in a form, the records are written to a specific table.
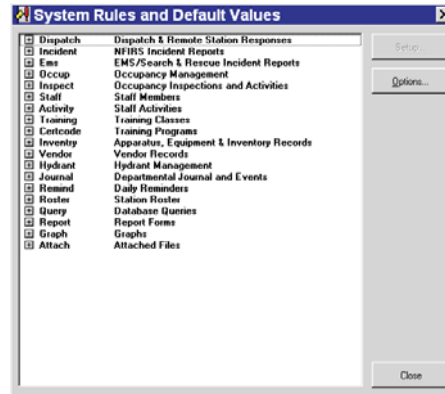
✪ Choose a specific record area by pressing ⊞ . Tables associated with the record area are listed.

✪ Select the table that you wish to specify rules and default values for. For example, if you want to modify the rules and validations for new Occupancy records, select the Occupancy Management record area then **OCC_MAIN** (Occupancy Master Records).

✪ Press **Setup...** The **System Rules and Default Values** form for the table is displayed.

✪ Highlight a field listed in the **System Rules and Default Values** form, then press **Add**. The **Select Rule Type** form is displayed.

✪ To add a default value to a rule:

NOTICE
Use Only When Necessary
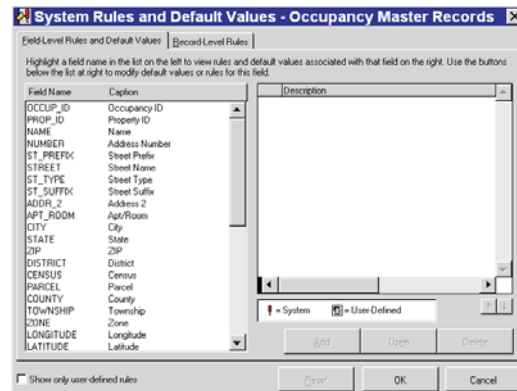
Beware of adding too many defaults, since defaulted values are seldom modified once the record is complete.

✪ Select *Default Value* then press **OK**. The **Default Value** form is displayed.

✪ Type the default value for the field, or press … .
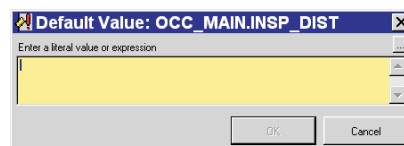
- If the highlighted field is linked to a lookup category, you are prompted to select a default value from the list. Press **Yes** to select a default value from the list of available lookup codes, select the code for the default value, then press **OK**. The selected value is inserted into the field.
- If the highlighted field is not linked to a lookup category, or if you press **No** when prompted, the **System Rule Expression** form is displayed. Note that the value you enter is an expression and must follow all syntax required for expressions. Do not attempt to format the expression (that is, do not press **Enter**) since formatting will invalidate your expression.

Steps for using the **System Rule Expression** form are listed on page 127.

- Press **OK**. See page 27 for the steps to save the rules added for the table.
- To require a field:
  - Select *Require Field* then press **OK**. The **Require Field** form is displayed.
  - Check *Require field always* to require a value in this field for the record to be complete. When *Require field always* is not checked, the *Require field when the following....* field is available.
  - Enter the criteria in the *Require field when the following....* that determines whether this field is required (for example, if another field in the record is a certain value):
    - Press ⬚. The **System Rule Expression** form is displayed.
    - Specify the condition to be satisfied for the field to be required. It is possible for the same field to have a default value and requirement condition.

Steps for using the **System Rule Expression** form are listed on page 127.

  - Press **OK** to save.

CAUTION
Use Restraint

We recommend restraint in this area. Each additional requirement adds an additional field that must be entered before the record is complete.

- To disable a field:
  - Select *Disable Field* then press **OK**. The **Disable Field** form is displayed.
  - Check *Disable field always* to prevent values from ever being entered into field. If not checked, you can specify conditions for when the field is disabled (for example, when another field in the record contains a certain value).
  - Enter the criteria in the *Disable field when the following expression evaluates to true* that determines whether this field is disabled (for example, if another field in the record is a certain value):
    - Press ⬚. The **System Rule Expression** form is displayed.

- ✪ Specify the condition to be satisfied for the field to be disabled.

- ✪ Press **OK**.
- ✚ To add an error condition*:*
  - ✪ Select *Error Condition* then press **OK**. The **Error Condition** form is displayed.
  - ✪ Type a valid expression that specifies the condition for the field's validity. Press ⬚ to display the **System Rule Expression** form.

  - ✪ Type an error message to display when the validation condition specified above is true in *Specify a Custom Validation Message…* Be sure to be as detailed as possible since this message should help the user correct the field. You can include valid expressions inside a text message if necessary.
  - ✪ Select *Severity level*, Critical, Warning, or Info only.
  - ✪ Press **OK**. See page 27 for the steps to save the rules added for the table.
- ✚ To update the value of another field:
  - ✪ Select *Update the Value of Another Field*.
  - ✪ Press **OK**.
  - ✪ Select a field in the current table to replace.
  - ✪ Type a valid expression or value in *Replace Field Value If* that specifies the condition for replacing the specified field, or press ⬚ to display the **System Rule Expression** form.

  - ✪ Type a value or expression in *Value/Expression To Use as Replacement* to use to replace the specified field, or press ⬚ to display the **System Rule Expression** form.
  - ✪ Press **OK**.
  - ✪ Press **OK** to save.

About Record-Level Rules

You can require that a record in a related child table be present. For example, you can specify that the occupancy preplan record (a child record of the main occupancy record) be completed for all occupancy records.

To Add a Record-Level Rule

✪ Access the **System Rules and Default Values** form for the main occupancy table (steps detailed page 24).

✪ Click the *Record-Level Rules* tab to display the *Record-Level Rules* section.

✪ Press **Add** to require a child record be completed.

✪ Select the child record in the *Require a record in the following child table* field. Check *Require a record always* to always required this child record. When *Require a record always* is not checked, add an expression in *Require a record when the following expression evaluates to true* by typing the expression or pressing ⸬ to display the **System Rule Expression** builder.

✪ Press **OK**.
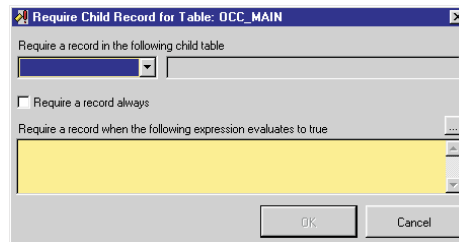
Remove All User-Defined Rules for Current Table

If you encounter problems as a result of the field or record properties specified for the table, you can either correct the problems individually, remove all user-defined rules for the table, or remove all user-defined rules from FH and start over. To correct problems individually, access the rule properties and edit.

Remove User-Defined Rules from Selected Table

To remove all user-defined rules for a table:

✪ From the **Administration** menu, select the **System Rules and Default Values** option. The **System Rules and Default Values** form is displayed.

✪ Choose a specific record area by pressing $\boxed{+}$. Tables associated with the record area are listed.

✪ Highlight the table name that you want to remove user-defined rules from.

✪ Press **Setup…**

✪ Press **Reset**. You are prompted that rules will be removed from the selected table.

✪ Select **Yes**.

All user-defined field properties for the selected table are removed.

Remove All User-Defined Rules from FH

As a last resort, you can remove all user-defined rules from FH:

✪ From the **Administration** menu, select the **System Rules and Default Values** option. The **System Rules and Default Values** form is displayed.

✪ Press **Options…** A menu of choices is displayed.

✪ Select **Remove All User-Defined Rules**. You are prompted with the number of rules to be removed and whether to proceed.

✪ Select **Yes**.

All user-defined field properties are removed from FH.

Chapter 4

Setup Automated Tasks

Automated tasks can be set up to automatically perform various functions at user-defined intervals.

Automated tasks added to FH are evaluated by the automated task processor. The automated task processor reviews each automated task and determines if it is time to run the task. You enable the automated task processor from the **Tools** menu, **Workstation Options...** option. Access the *Other...* section of the **Workstation Options** form and specify the automated task processor status in the **Automated Tasks** area.

The remainder of this chapter details how to add automated tasks.

Adding Automated Tasks

Before adding automated tasks, consider timing and licensing.

- Task Timing. Make sure timing is appropriate. If you do not allow sufficient time for one station to complete an export before the target station begins importing, the import process will not be successful. This is especially important for automated tasks that run unattended.
- Task Licensing. The automated task processor is considered to be a user by FH when it scans for the number of active users and available licenses when a user logs in. Each concurrent user requires a license. If you run automated tasks 24 hours a day, an additional license for the workstation running the task at the central station is recommended.

Valid task types are listed below:

- *Export to Station*, detailed page 33.
- *Import from Station*, detailed page 34.
- *Import External Data*, detailed page 34.
- *Run Database Tools*, detailed page 35.
- *Backup Database*, detailed page 36.
- *Run External Application*, detailed page 37.
- *Run Add-On*, detailed page 38.
- *Print a Report*, detailed page 39.
- *Run a Query*, detailed page 40.
- *NFIRS Transaction File Import*, detailed page 41.
- *EMS Transaction File Import*, detailed page 42.
- *Update Scheduling Activity*, detailed page 43.

Export to Station Task

Use *Export to Station* task for outlying stations that are not connected to the central station with a high speed connection. The outlying station can be set to automatically export data at regularly scheduled intervals. As long as you are not deleting files during the export and the automated task specifies overlapping date ranges when exporting (the resulting duplicate records are skipped during the import), there is no opportunity for data loss should an import be interrupted or skipped. The central station needs to add a corresponding *Import from Station* task to import the outlying station's exported data.

To Set Export to Station Task Parameters

✪ Select the **Administration** menu, **Automated Tasks...** option. The **Automated Task Setup** form is displayed.

✪ Press **New**. The **Automated Task Properties** form is displayed.

✪ Select *Export to Station.*

✪ Press **Setup Task Parameters...** the **Export Data to Station** form is displayed. Press **F1** for details on using this form.

✪ On the **Export Data to Station** form, *Export* section, select the export options, then press **OK** to complete.

✪ Type an *Automated Task Name*.
Use a name that clearly differentiates this task from other automated tasks.

✪ Specify *Run How Often?* for how frequently the task is run. Choices are:
- *Daily* and *Time of Day.*
- *Weekly*, *Day*, and *Time of Day.*
- *Monthly, Day, and Time of Day.*
- *Timed* and *Every x minutes.*
- *Login.*
- *Logout.*
- *Exit.*

✪ Specify a *Sort order/priority* if there are multiple tasks that run together and need to be run in a certain order. Ordered tasks must start with a task with a *Sort order/priority* equal to "1". Leave empty for stand-alone tasks.

✪ If you are running an external application, check *Wait for an external process to complete before continuing* to initiate automated task after the specified external application is finished running. This can be useful if used before another task that should not be run until an external process finishes.

✪ Check *Run task at the following workstation only* to designate the specific workstation to run this task from.

NOTICE Workstation Listing	If the same workstation is listed multiple times, you need to perform some workstation maintenance. See the FH Help File 'Workstation Administration' topic for more information.

✪ Check *Run task from login screen only* to run automated tasks only when the FH login form is displayed.

✪ Check *Exit FIREHOUSE Software after task completes* to automatically close the program after the task is finished. This option is available if the *Run task from login screen only* is checked.

✪ Save and close.

Import from Station Task

The *Import from Station* task is used by the central station to import the outlying station's information into the main database.

To Set Import to Station Parameters

✚ Select the **Administration** menu, **Automated Tasks...** option. The **Automated Task Setup** form is displayed.

✚ Press **New**. The **Automated Task Properties** form is displayed.

✚ Select *Import to Station.*

✚ Press **Setup Task Parameters...** The **Import Data from Station** form is displayed. Press **F1** for details on using this form.

✚ Press **Directory...** to define where the file is located then press **OK** to complete.

✚ Type an *Automated Task Name*.
Use a name that clearly differentiates this task from other automated tasks.

✚ Specify *Run How Often?* for how frequently the task is run. Choices are:
  • *Daily* and *Time of Day.*
  • *Weekly*, *Day*, and *Time of Day.*
  • *Monthly, Day, and Time of Day.*
  • *Timed* and *Every x minutes.*
  • *Login.*
  • *Logout.*
  • *Exit.*

✚ Check *Run task at the following workstation only* to designate the specific workstation to run this task from.

NOTICE Workstation Listing	If the same workstation is listed multiple times, you need to perform some workstation maintenance. See the FH Help File 'Workstation Administration' topic for more information.

✚ Check *Run task from login screen only* to run automated tasks only when the FH login form is displayed.

✚ Check *Exit FIREHOUSE Software after task completes* to automatically close the program after the task is finished. This option is available if the *Run task from login screen only* is checked.

✚ Save and close.

Import External Data Task

Import External Data option is used to import external data sources directly into specified FH tables.

To Set Import External Data Parameters

✪ Select the **Administration** menu, **Automated Tasks...** option. The **Automated Task Setup** form is displayed.

✪ Press **New**. The **Automated Task Properties** form is displayed.

✪ Select *Import External Data*.

✪ Press **Setup Task Parameters...** The **External Data Imports** form is displayed. Press **F1** for details on using this form.

✪ Add a new import definition or select an existing definition, then press **Save** to complete.

✪ Type an *Automated Task Name*.
Use a name that clearly differentiates this task from other automated tasks.

✪ Specify *Run How Often?* for how frequently the task is run. Choices are:
  • *Daily* and *Time of Day.*
  • *Weekly*, *Day*, and *Time of Day.*
  • *Monthly, Day, and Time of Day.*
  • *Timed* and *Every x minutes.*
  • *Login.*
  • *Logout.*
  • *Exit.*

✪ Check *Run task at the following workstation only* to designate the specific workstation to run this task from.

> **NOTICE**
> Workstation Listing
>
> If the same workstation is listed multiple times, you need to perform some workstation maintenance. See the FH Help File 'Workstation Administration' topic for more information.

✪ Check *Run task from login screen only* to run automated tasks only when the FH login form is displayed.

✪ Check *Exit FIREHOUSE Software after task completes* to automatically close the program after the task is finished. This option is available if the *Run task from login screen only* is checked.

✪ Save and close.

Run Database Tools Task

The **Database Tools** option is used to maintain your database.

To Set Run Database Tools Parameters

✪ Select the **Administration** menu, **Automated Tasks...** option. The **Automated Task Setup** form is displayed.

✪ Press **New**. The **Automated Task Properties** form is displayed.

- ✪ Select *Run Database Tools*.
- ✪ Press **Setup Task Parameters...** The **Database Tools** form is displayed. Press **F1** for details on using this form.
- ✪ Press **OK** then complete.
- ✪ Type an *Automated Task Name*.
  Use a name that clearly differentiates this task from other automated tasks.
- ✪ Specify *Run How Often?* for how frequently the task is run. Choices are:
  - *Daily* and *Time of Day.*
  - *Weekly*, *Day*, and *Time of Day.*
  - *Monthly, Day, and Time of Day.*
  - *Timed* and *Every x minutes.*
  - *Login.*
  - *Logout.*
  - *Exit.*
- ✪ Check *Run task at the following workstation only* to designate the specific workstation to run this task from.

NOTICE Workstation Listing	If the same workstation is listed multiple times, you need to perform some workstation maintenance. See the FH Help File 'Workstation Administration' topic for more information.

- ✪ Check *Run task from login screen only* to run automated tasks only when the FH login form is displayed.
- ✪ Check *Exit FIREHOUSE Software after task completes* to automatically close the program after the task is finished. This option is available if the *Run task from login screen only* is checked.
- ✪ Save and close.

Backup Database Task

The *Backup Database* option is used to create a backup copy of the database. We suggest that you backup your database on a regular basis to minimize the risk of losing data.

NOTICE Alternative Method	As an alternative to an automated task, you can automatically check for an up-to-date backup when exiting FH. This setting is available on the **Administrative Options** form *Database* section by checking *Prompt for database backup every...* and specify the number of days.

To Set Backup Database Parameters

✪ Select the **Administration** menu, **Automated Tasks...** option. The **Automated Task Setup** form is displayed.

✪ Press **New**. The **Automated Task Properties** form is displayed.

✪ Select *Backup Database*.

✪ Press **Setup Task Parameters...** The **Backup/Restore** form is displayed. Press **F1** for details on using this form.

✪ Make selections then press **OK** to complete.

✪ Type an *Automated Task Name*.
Use a name that clearly differentiates this task from other automated tasks.

✪ Specify *Run How Often?* for how frequently the task is run. Choices are:
  • *Daily* and *Time of Day.*
  • *Weekly*, *Day*, and *Time of Day.*
  • *Monthly, Day, and Time of Day.*
  • *Timed* and *Every x minutes.*
  • *Login.*
  • *Logout.*
  • *Exit.*

✪ Check *Run task at the following workstation only* to designate the specific workstation to run this task from.

NOTICE
Workstation
Listing

If the same workstation is listed multiple times, you need to perform some workstation maintenance. See the FH Help File 'Workstation Administration' topic for more information.

✪ Check *Run task from login screen only* to run automated tasks only when the FH login form is displayed.

✪ Check *Exit FIREHOUSE Software after task completes* to automatically close the program after the task is finished. This option is available if the *Run task from login screen only* is checked.

✪ Save and close.

Run External Application

The *Run External Application* option is used to run programs other than FH.

To Set Run External Parameters

✪ Select the **Administration** menu, **Automated Tasks...** option. The **Automated Task Setup** form is displayed.

✪ Press **New**. The **Automated Task Properties** form is displayed.

- ✪ Select *Run External Application.*
- ✪ Press **Setup Task Parameters...** The **Select Application** form is displayed. Press **F1** for details on using this form.
- ✪ Select the external program to run, then press **Open** and complete.
- ✪ Type an *Automated Task Name.*
  Use a name that clearly differentiates this task from other automated tasks.
- ✪ Specify *Run How Often?* for how frequently the task is run. Choices are:
  - *Daily* and *Time of Day.*
  - *Weekly*, *Day*, and *Time of Day.*
  - *Monthly, Day, and Time of Day.*
  - *Timed* and *Every x minutes.*
  - *Login.*
  - *Logout.*
  - *Exit.*
- ✪ Check *Run task at the following workstation only* to designate the specific workstation to run this task from.

> **NOTICE**
> Workstation Listing
>
> If the same workstation is listed multiple times, you need to perform some workstation maintenance. See the FH Help File 'Workstation Administration' topic for more information.

- ✪ Check *Run task from login screen only* to run automated tasks only when the FH login form is displayed.
- ✪ Check *Exit FIREHOUSE Software after task completes* to automatically close the program after the task is finished. This option is available if the *Run task from login screen only* is checked.
- ✪ Save and close.

Run Add-On Task

The *Run Add-On* option allows you to run add-ons that have been added to your FH program.

Add-ons are utilities that perform various tasks related to your FH system.

To Set Run Add-On Parameters
- ✪ Select the **Administration** menu, **Automated Tasks...** option. The **Automated Task Setup** form is displayed.
- ✪ Press **New**. The **Automated Task Properties** form is displayed.
- ✪ Select *Run Add-On.*

✪ Press **Setup Task Parameters…** The **FIREHOUSE Software Add-Ons** form is displayed. Press **F1** for details on using this form.

✪ Highlight the desired add-on and press **Select** and complete.

✪ Type an *Automated Task Name*.
Use a name that clearly differentiates this task from other automated tasks.

✪ Specify *Run How Often?* for how frequently the task is run. Choices are:
- *Daily* and *Time of Day.*
- *Weekly*, *Day*, and *Time of Day.*
- *Monthly, Day, and Time of Day.*
- *Timed* and *Every x minutes.*
- *Login.*
- *Logout.*
- *Exit.*

✪ Check *Run task at the following workstation only* to designate the specific workstation to run this task from.

> **NOTICE**
> Workstation Listing
>
> If the same workstation is listed multiple times, you need to perform some workstation maintenance. See the FH Help File 'Workstation Administration' topic for more information.

✪ Check *Run task from login screen only* to run automated tasks only when the FH login form is displayed.

✪ Check *Exit FIREHOUSE Software after task completes* to automatically close the program after the task is finished. This option is available if the *Run task from login screen only* is checked.

✪ Save and close.

Print a Report Task

This option allows to you to automatically run and print reports.

To Set Report Print Parameters

✪ Select the **Administration** menu, **Automated Tasks…** option. The **Automated Task Setup** form is displayed.

✪ Press **New**. The **Automated Task Properties** form is displayed.

✪ Select *Print a Report.*

✪ Press **Setup Task Parameters…** The **Reports** form is displayed.

✪ You can either select an existing report or create a new one.

For more information on creating a new report see Chapter 8, "Creating and Modifying Reports".

✚ Add a new report or select an existing report, specify output, add parameters then press **OK** to complete.

✚ Type an *Automated Task Name*.
Use a name that clearly differentiates this task from other automated tasks.

✚ Specify *Run How Often?* for how frequently the task is run. Choices are:
  - *Daily* and *Time of Day.*
  - *Weekly*, *Day*, and *Time of Day.*
  - *Monthly, Day, and Time of Day.*
  - *Timed* and *Every x minutes.*
  - *Login.*
  - *Logout.*
  - *Exit.*

✚ Check *Run task at the following workstation only* to designate the specific workstation to run this task from.

NOTICE Workstation Listing	If the same workstation is listed multiple times, you need to perform some workstation maintenance. See the FH Help File 'Workstation Administration' topic for more information.

✚ Check *Run task from login screen only* to run automated tasks only when the FH login form is displayed.

✚ Check *Exit FIREHOUSE Software after task completes* to automatically close the program after the task is finished. This option is available if the *Run task from login screen only* is checked.

✚ Save and close.

Run a Query Task

This option allows to you to automatically run queries.

To Set Query Run Parameters

✚ Select the **Administration** menu, **Automated Tasks...** option. The **Automated Task Setup** form is displayed.

✚ Press **New**. The **Automated Task Properties** form is displayed.

✚ Select *Run a Query*.

✚ Press **Setup Task Parameters...** The **Queries** form is displayed.

✚ You can either select an existing query or create a new one.

For more information on creating a new queries see Chapter 7, "Creating Queries".

✚ Highlight desired query and press **Select**.

✚ Specify output options, then press **OK** to complete.

- Type an *Automated Task Name*.
  Use a name that clearly differentiates this task from other automated tasks.
- Specify *Run How Often?* for how frequently the task is run. Choices are:
  - *Daily* and *Time of Day.*
  - *Weekly*, *Day*, and *Time of Day.*
  - *Monthly, Day, and Time of Day.*
  - *Timed* and *Every x minutes.*
  - *Login.*
  - *Logout.*
  - *Exit.*
- Check *Run task at the following workstation only* to designate the specific workstation to run this task from.

NOTICE Workstation Listing	If the same workstation is listed multiple times, you need to perform some workstation maintenance. See the FH Help File 'Workstation Administration' topic for more information.

- Check *Run task from login screen only* to run automated tasks only when the FH login form is displayed.
- Check *Exit FIREHOUSE Software after task completes* to automatically close the program after the task is finished. This option is available if the *Run task from login screen only* is checked.
- Save and close.

NFIRS Transaction File Import Task

This option allows to you to automatically run NFIRS transaction file imports.

To Set NFIRS Import Parameters
- Select the **Administration** menu, **Automated Tasks...** option. The **Automated Task Setup** form is displayed.
- Press **New**. The **Automated Task Properties** form is displayed.
- Select *NFIRS Transaction File Import*.
- Press **Setup Task Parameters...** The **NFIRS 5.0 Import** form is displayed. Press **F1** for details on using this form.
- Select the file to import, then press the *Options* tab and specify a directory for the processed files.
- Press **OK** to complete.
- Type an *Automated Task Name*.
  Use a name that clearly differentiates this task from other automated tasks.

- ✚ Specify *Run How Often?* for how frequently the task is run. Choices are:
  - • *Daily* and *Time of Day.*
  - • *Weekly*, *Day*, and *Time of Day.*
  - • *Monthly, Day, and Time of Day.*
  - • *Timed* and *Every x minutes.*
  - • *Login.*
  - • *Logout.*
  - • *Exit.*
- ✚ Check *Run task at the following workstation only* to designate the specific workstation to run this task from.

NOTICE Workstation Listing	If the same workstation is listed multiple times, you need to perform some workstation maintenance. See the FH Help File 'Workstation Administration' topic for more information.

- ✚ Check *Run task from login screen only* to run automated tasks only when the FH login form is displayed.
- ✚ Check *Exit FIREHOUSE Software after task completes* to automatically close the program after the task is finished. This option is available if the *Run task from login screen only* is checked.
- ✚ Save and close.

EMS Transaction File Import Task

This option allows to you to automatically run EMS transaction file imports.

To Set EMS Import Parameters
- ✚ Select the **Administration** menu, **Automated Tasks...** option. The **Automated Task Setup** form is displayed.
- ✚ Press **New**. The **Automated Task Properties** form is displayed.
- ✚ Select *EMS Transaction File Import.*
- ✚ Press **Setup Task Parameters...** The **FH 5.0 EMS Import** form is displayed. Press **F1** for details on using this form.
- ✚ Select the file to import, then press the *Options* tab and specify a directory for the processed files.
- ✚ Press **OK** to complete.
- ✚ Type an *Automated Task Name.*
  Use a name that clearly differentiates this task from other automated tasks.
- ✚ Specify *Run How Often?* for how frequently the task is run. Choices are:
  - • *Daily* and *Time of Day.*

- *Weekly*, *Day*, and *Time of Day*.
- *Monthly, Day, and Time of Day*.
- *Timed* and *Every x minutes*.
- *Login*.
- *Logout*.
- *Exit*.

✚ Check *Run task at the following workstation only* to designate the specific workstation to run this task from.

NOTICE Workstation Listing	If the same workstation is listed multiple times, you need to perform some workstation maintenance. See the FH Help File 'Workstation Administration' topic for more information.

✚ Check *Run task from login screen only* to run automated tasks only when the FH login form is displayed.

✚ Check *Exit FIREHOUSE Software after task completes* to automatically close the program after the task is finished. This option is available if the *Run task from login screen only* is checked.

✚ Save and close.

Update Scheduling Activity Task

This option allows to you to automatically update scheduling activities created from the Staff Scheduling module (optional feature).

To Set Update Schedule Activity Parameters

✚ Select the **Administration** menu, **Automated Tasks...** option. The **Automated Task Setup** form is displayed.

✚ Press **New**. The **Automated Task Properties** form is displayed.

✚ Select *Update Scheduling Activity*.

✚ Press **Setup Task Parameters...**

✚ Select the schedule to update.

✚ Press **OK** to complete.

✚ Type an *Automated Task Name*.
Use a name that clearly differentiates this task from other automated tasks.

✚ Specify *Run How Often?* for how frequently the task is run. Choices are:
- *Daily* and *Time of Day*.
- *Weekly*, *Day*, and *Time of Day*.
- *Monthly, Day, and Time of Day*.
- *Timed* and *Every x minutes*.
- *Login*.

- *Logout.*
- *Exit.*

✪ Check *Run task at the following workstation only* to designate the specific workstation to run this task from.

NOTICE Workstation Listing	If the same workstation is listed multiple times, you need to perform some workstation maintenance. See the FH Help File 'Workstation Administration' topic for more information.

✪ Check *Run task from login screen only* to run automated tasks only when the FH login form is displayed.

✪ Check *Exit FIREHOUSE Software after task completes* to automatically close the program after the task is finished. This option is available if the *Run task from login screen only* is checked.

✪ Save and close.

Use Automated Tasks

Once the automated tasks have been added, they are ready to be run at the user-defined interval. The task processor needs to be active for automated tasks to be run.

Launching the Task Processor

The task processor must be active for FH to scan automated tasks that have been added and run them when appropriate. You can define when the task processor is run.

To Specify Default Task Processor Status

➕ Access the **Tools** menu **Workstation Options** option, and select the *Other...* section. In the **Automated Tasks** area, select the task processor status:

➕ Select *Auto-load on FIREHOUSE Software Startup* to activate the task processor when FH is launched. Automated tasks will not be run unless FH is opened.

➕ Select *Auto-load on Windows Startup* to activate the task processor when Windows is opened. Automated tasks will run even if FH is not opened.

➕ Select *Disable Automated Task Processor* to disable the task processor. Automated tasks will not be run until the task processor is enabled.

When the FH task processor is activated, an FH icon is added to the taskbar next to your Windows clock. Click on the FH icon to display the **Automated Task Status** form, which allows you to suspend or stop the task processor. Press **Suspend** to halt processing, but leave the FH icon on the taskbar. Press **Stop** to halt processing and remove the FH icon on the taskbar.

You can also manually start the automated task processor after adding an automated task. From the **Automated Task Setup** form, press **Start** in the **Task Processor Status** area. The automated task processor is activated.

Run Automated Tasks

Automated tasks are run at intervals specified by the user, but can be run manually at any time.

To Manually Run Task

⊕ Select the **Administration** menu, **Automated Tasks...** option. The **Automated Task Setup** form is displayed.

⊕ Check *Show automated tasks assigned to this workstation only* to limit listed tasks.

⊕ Highlight the task from the list, then press **Run**.

The *Task Processor Status* section displays information about the processor status (for example, 'Stopped' or 'Suspended') and includes buttons for starting, stopping, or suspending the task processor.
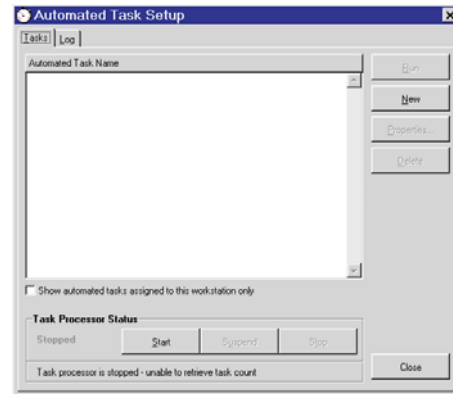
See page 44 for more information on the Task Processor Status.

Review Automated Task Activity

The log section lists by date the individual automated tasks that have been run.

To Review Automated Task Activity

⊕ Highlight a log entry and press the **Details** button.

⊕ Details about the log and when it was last completed are displayed.

⊕ Press **OK** to exit and return to **Automated Task Setup** form.
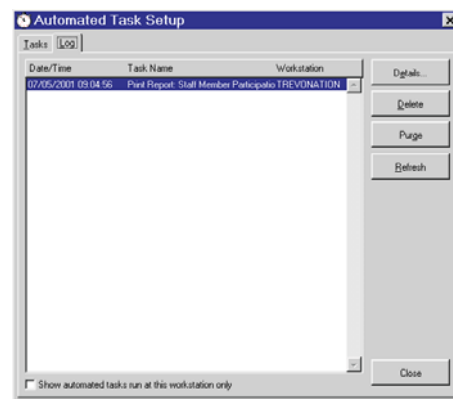
Chapter 5

Station Management

Station Management options include maintaining the station roster and using export to/import from station to share data between stations.

- The station roster is described on the following page.
- Using Export To/Import From is described page 50.
- Additional Export To/Import From information is provided on page 54.

NOTICE Alternatives	Export To/Import From is generally used when a high speed network is not available. If you have high speed connections or use FH Enterprise, all workstations should be connected to a single, central database and you will not need to use Export To/Import From. FH Enterprise is a client/server database version of FH. Contact your sales representative for pricing information.

Maintain Station Roster

The Station Roster lists units and personnel that can be added to incidents. When unit or personnel are added to the Station Roster, the units and personnel are available via the **Staff Group Select** form *Station Roster* section so they can be quickly added to incidents and staff activities.

NOTICE Alternatives	Specify that available units and staff are displayed when adding groups of personnel from the **Administrative Options** form, *Staff* section, by selecting *Station Roster* in the **Default Group Select Method**.

Setting Station Roster

The station roster lists available units and personnel. The list of available units and personnel are typically added by personnel at the beginning of the shift. Please note that with the optional Staff Scheduling module, the station roster could be locked from modification, and updated using scheduling information.

To Add Units to Roster

✪ From the **File** menu, select **Station Management**, **Station Roster & Availability** option. The **Station Roster & Availability** form, *Unit Roster* section is displayed.

✪ Press **Add** in the *Unit* area. The **Station Roster - Available Unit Detail** form is displayed. Add a code to *Unit*, then save and close.

The *Staff Assigned* caption changes based on the highlighted unit.

✪ Press **Add Group** next to the *Staff Assigned* area and select all staff members to associate with the unit.

You can add staff one at a time by pressing **Add**. Repeat the steps above for each unit and staff member associated with the unit.

✪ Save and close.

To Add Personnel Not Associated with a Unit

✪ From the **File** menu, select **Station Management**, **Station Roster & Availability** option. The **Station Roster & Availability** form, *Unit Roster* section is displayed.

✪ Press the *Personnel Roster* tab.

✪ Press **Add Group**, highlight personnel, then press **OK**.

The units and personnel added to the *Unit Roster* and *Personnel Roster* sections are immediately available from the **Staff Group Select** form *Staff Roster* section.

NOTICE
Use Available Staff

Specify that available units and staff are displayed when adding groups of personnel from the **Administrative Options** form, *Staff* section, by selecting *Station Roster* in the **Default Group Select Method**.

✪ Press **Close** to exit the form.

With the **Station Roster & Availability** form displayed, press **F1** for more information on using this form.

Using Station Export and Import

FH includes the ability to share data across a distributed network, even when connection speeds are not high. Station Export/Import is a two step process, the station export and sation import.

Export Data to Station

Export selected FH data, for sharing data between stations that do not have a high-speed connection.

To Define Station Export

✛ From the **File** menu, **Station Management** option, select **Export Data to Station...** option. The **Export Data to Station ...** form is displayed.

See 'Using Import/Export to Share Data' on page 54 for an overview of the Import/Export process.

✛ Select databases to export records from:

    ✛ Check each database to include in the export.

    ✛ Press **Select All** to select all databases, or press **Select None** to clear all exportable selections.

NOTICE

Limit Selections

Station Roster, *Lookup Tables*, and *Users and Security* add a substantial amount of data to export files, and are usually only exported from the central station to outlying stations when the program is first configured. When selected, *Station Roster*, *Lookup Tables*, and *Users and Security* are exported in their entirety.

✛ Enter a *Last saved on or after* value:

    ✛ Select "Last Export" to include records in selected databases added after the last export was created.

- Select a dynamic date ("Yesterday", "This Week", "This Month", "Last Week", "Last Month") to include records in selected databases created after the designated date. For example, "Yesterday" includes all records saved on or after yesterday (today's date minus one).
- Select "Custom Date..." and specify a *Date* to only include records in selected databases created after the defined *Date*. if *Date* is left empty, all records in selected databases are exported.

- Select a code from any of the lookup code lists for: *Station, District, Shift, or Zone* to include only records from selected databases for the specified items. Leave the fields blank to export all records from the selected databases.

- Check *Exclude Today* to exclude all records with the current date from the export.

- Check *Delete data source records after export* to delete the dated exported records from the exporting station, once the export is complete. If selected, *Station Roster*, *Lookup Tables*, and *Users and Security* are not deleted

- Check *Export attachments for selected records* to automatically export attachments along with their respective records.

- Check *Export user fields for selected records* to export user field values and user field attributes when used in selected records.

- Check *Include records imported on or after above date* to include records imported in the specified time (even if the record's date is not in the specified time).

> **NOTICE**
> Modify Dates
>
> Imported records are not given a 'new' modified date when imported, so a record that is imported into a database will not be included in an export if the original modified date of the imported record precedes the export date. Check this option if the exported databases are imported (and overwrite) records at another workstation.

- Check *Exclude records with blanks in filter fields* to exclude records where the Station, District, Shift, or Zone fields have been left empty.

- Press **Directory...** and use the file dialog to select a directory. The export file must be exported to a location the importing FH workstation can access so it can be imported. You can use a disk, modem, or any other connection method to move the export file to a location accessible to the importing FH workstation.

- Check *Erase any previous export files in this directory* to automatically erase any export files found at this location.

- Type a path to an executable in *When finished, execute the following program* to execute the designated program once the export is finished. For example, you could run a batch file that connects to a separate computer and sends the file.

- ○ To select a program, press **File....** and use the dialog box to locate and select the desired program. FH support is not able to provide assistance for setting this functionality up.
- ✚ When finished with the export specifications, press **OK** to start the export.

To Review Export History

✚ From the **File** menu, **Station Management** option, select **Export Data to Station...** option. The **Export Data to Station ...** form is displayed.

✚ Press the **Log** tab.

✚ Highlight a log entry and press **Details** to get more information on any of the listed exports.

✚ Check *Show exports performed at this workstation only* to display exports run from that workstation.
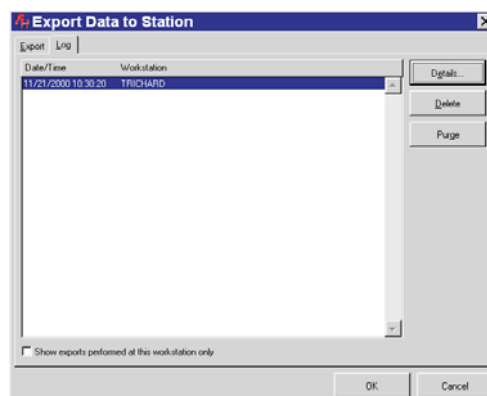
Import Data from Station

Import files created by the FH Export to Station option, for sharing data between stations that do not have a high-speed connection.

See Using Import/Export to Share Data on page 54 for an overview of the Import/Export process.

To Define Import

✚ From the **File** menu, **Station Management** option, select **Import Data from Station...** option. The **Import Data from Station ...** form is displayed.

✚ Press **Directory...** to define where the export file is located.

✚ Check *Erase source files after import* to delete the source files after the import is finished.
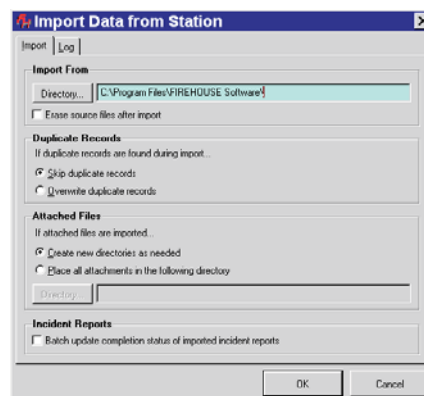
○ Specify how duplicate records are treated during the import. A record is considered to be a duplicate if the key field (or fields for fire and EMS incidents) for the source record matches the target record.

    ○ Select *Skip Duplicate Records* to skip importing records that have the same identifier.

    ○ Select *Overwrite Duplicate Records* to import records, even if the target has a matching record.

NOTICE Duplicate Records	Select *Skip Duplicate Records* for imports if you are sure that the workstation contains the most up-to-date records. Note that if the two stations have duplicate records and one station updates a duplicate record and exports the record to another station that skips duplicates, the updated record will be skipped. For example, if Station 2 (an outlying station) creates an incident, then exports the incident to Station 1 (central station), Station 1 modifies the incident record, then exports the incident record back to Station 2, the incident record will be skipped by the import if *Skip Duplicate Records* is selected for the import. Incident records should be locked upon completion to minimize unauthorized changes. If the central station typically makes changes to records exported from the outlying stations, *Overwrite Duplicate Records* needs to be selected for all outlying station imports to ensure that the most up-to-date records are imported. After records created at outlying stations have been exported to the central station, all subsequent changes must be made at the central station.

○ Specify whether new directories are created as needed or specify one directory that all attachments are saved in.

    ○ Select *Create new directories as needed* to create a new directory only when an attachment is imported (a new directory for each attachment is created).

    ○ Select *Place all attachments in the following directory* to specify where imported attachments will be located.

    To define a directory, first press **Directory...**. Use the dialog box to locate and select the desired directory.

○ Specify how imported records will affect existing incident records.

    ○ Check *Batch update completion status of imported incident reports* to automatically batch update incident completion status when completion information from outlying stations is imported. This will affect your state export transaction file if incident status changes, so check only when sure of the results.

○ When finished with the import specifications, click **OK** to start the import.

To Review Import Log

✪ From the **File** menu, **Station Management** option, select **Import Data from Station…** option. The **Import Data from Station …** form is displayed.

✪ Click the *Log* tab.

✪ Highlight a log entry and press **Details** to get more information on any of the listed imports.

✪ Check *Show imports performed at this workstation only* to limit displayed exports.

Using Import/Export to Share Data

Distributed networks vary widely. A network is a collection of computers that share information. This loose definition could include a collection of stand-alone workstations connected by a "sneaker-network" using removable media to transfer data, or computers connected by ISDN, microwave, or other connection methods. The following is not a primer on available networks, but a set of guidelines for keeping FH data up-to-date department-wide regardless of the type of network you use.

Basic Setup Steps

The basic steps to configure FH data sharing are to:

• determine how you will be sharing data,
• determine who needs what data, then
• define the import/export.

Once these steps are defined, you can add automated tasks that will automate these steps.

Determine Connection

How you choose to connect should be based on available software, budget, and technical resources. A connection can be as simple as a 3 ½" diskette physically carried from one computer to another, or more complex, like a dedicated link between two LANs using a satellite link. Your connection can be dedicated or dial up, depending on whether you have a line to spare, or want to be able to use the line for other purposes or needs.

Determine Data Coverage Needs

Determine how you want to share data throughout the network. A common setup is to have the remote and central stations have their own databases that are kept up-to-date using the station management **Export to/Import from** options. Typically, the export to and import from are automated tasks.

Define the Import/Export

Below are the steps to export data from an outlying station and import the files at the server, then back again. Generally, export and import are used because a network connection is not available, or the available connection is not sufficient for a dedicated connection. Each FH workstation uses its own database. Base information like master records, lookup codes, and user-defined fields should be synchronized to export and import between two FH databases.

A license for each concurrent user is required. Each outlying station and the central station needs a license. Some departments need an extra license at the central station that exclusively runs automated tasks. If you are unsure about your licensing status, please contact your sales representative.
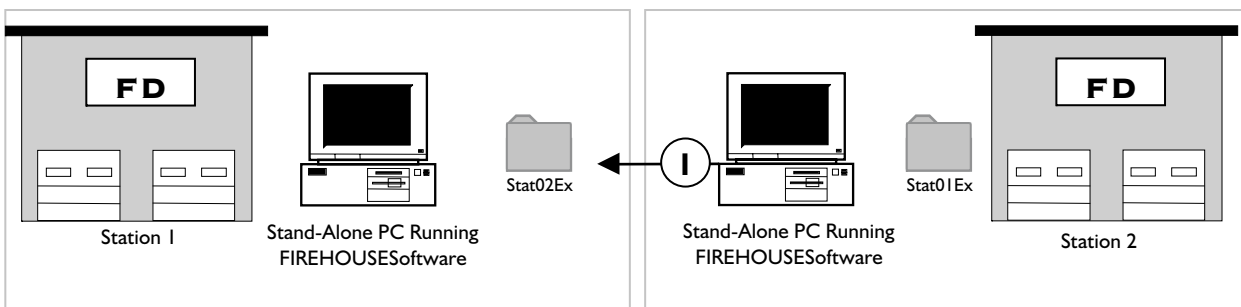
① At Station 2, access the **File** menu, **Station Management** option **Export Data to Station...** option and direct the files to a specific directory or diskette.
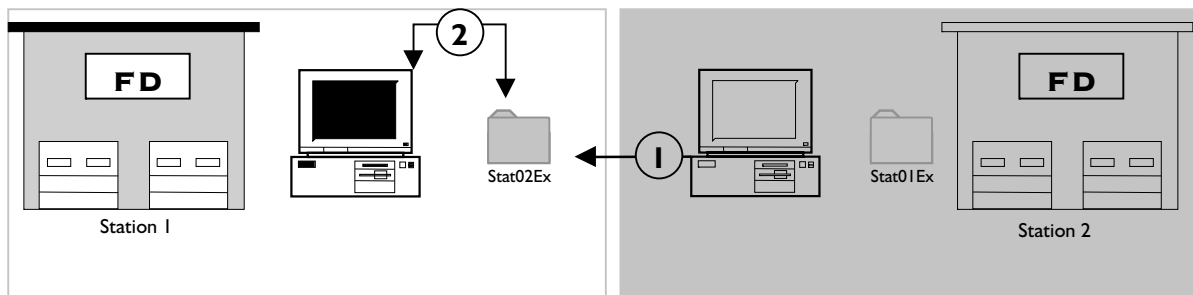
② From a workstation at Station 1 with FH running, go to **File** menu, **Station Management** option **Import Data from Station...** option. The **Import from Station** form is displayed.

After successfully importing the files, Station 1 will have all station records included in the export.

If you need to export Station 1 data to Station 2, then:
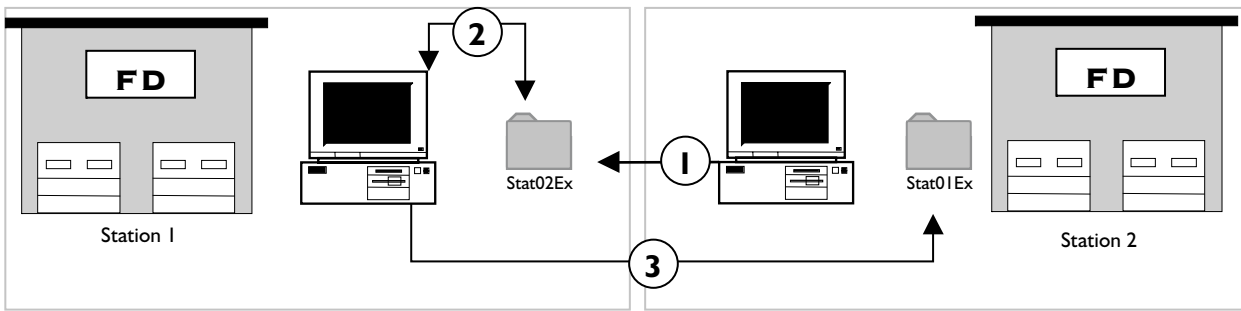
③ From the workstation at Station 1 with FH running, go to **File** menu, **Station Management** option, **Export to Station** option and select the directory/diskette containing the files.
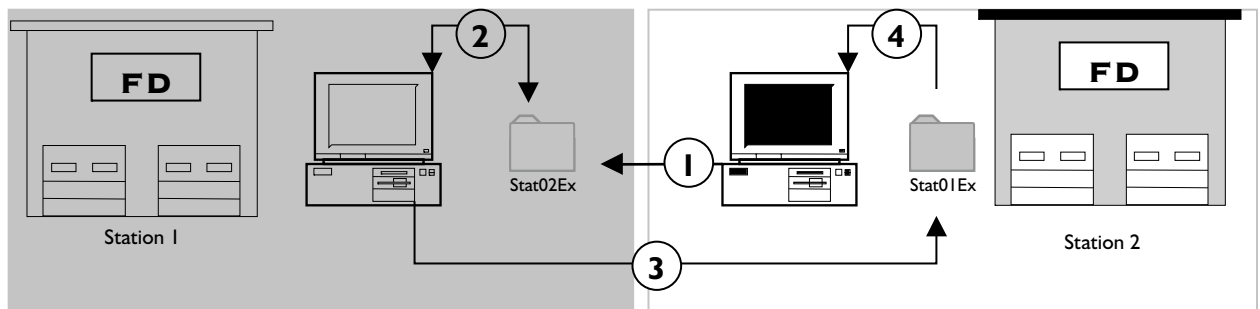
④ From the workstation at Station 2, go to **File** menu, **Station Management** option, **Import from Station** option and select the directory/diskette containing the files.

Moving the Files

FH does not care how you get the files to the server; you can use removable media, internet, Windows dial-up networking, or third-party communication packages like PCAnywhere.

Chapter 6

User-Defined Fields

User-defined fields can be added to specific record areas of FH. Once added, the user-defined fields are entered from the *Other* section of the user-defined field's record area. This chapter describes the intent of user-defined fields, lists areas that user-defined fields can be added to, and details the steps to add user-defined fields.

The Idea Behind User-Defined Fields

User-defined fields allow you to track information that the standard FH package does not track. For example, if you wanted to track the shoe size of staff members, you can add a "shoe size" field and add that information to the staff member's record from the **Staff** form, *Other* section **User Fields...** button. Once a user-defined field is added to FH and you start entering values into the user-defined fields, you can create custom reports that list values from the user-defined fields and include fields from the master record. For example, the report could list staff member's shoe size and their first and last name.

> **NOTICE**
> User-Defined Fields
>
> Check for available fields in FH. The information you want to track using a user-defined field may already be tracked elsewhere in the system.

Available User-Defined Field Areas

The areas that user-defined fields can be added to, and the corresponding form from which user-defined fields are accessed, are listed below.

Available Area	Form Name
NFIRS Incident Reporting	
NFIRS Incident Report User fields	**NFIRS Incident Report** form
Incident Involvement User fields	**Involvement** form
Civilian Casualty User fields	**Civilian Fire Casualty Report** form
Fire Service Casualty User fields	**Fire Service Casualty Report** form
Arson Report User fields	**Arson Report** form
Arson - Suspect/Involvement User fields	**Investigative Leads/Involvement Report** form
EMS/Search & Rescue Incident Reporting	
EMS/Search & Rescue Incident User fields	**EMS/Search & Rescue Report** form
EMS/Search & Rescue Patient/Victim User fields	**Patient/Victim Information** form
Occupancy & Inspection Management	
Occupancy Inspection/Activity User fields	**Inspection** form
Occupancy User fields	**Occupancy** form
Occupancy Contacts User fields	**Contact Detail** form
Occupancy Permit User fields	**Permits** form
Occupancy Chemical Inventory User fields	**Chemical Inventory** form
Staff Management	
Staff Activity User fields	**Activities** form
Staff Activity Participant User fields	**Participants Detail** form
Staff Member User fields	**Staff** form
Staff Contact User fields	**Staff Contacts** form
Training Classes & Programs	
Training Program User fields	**Training Program** form
Training Program Enrollee User fields	**Training Program** form
Training Class User fields	**Training Class** form
Training Class Attendee User fields	**Training Class** form
Apparatus, Equipment & Inventory	
Apparatus/Equipment & Inventory User fields	**Inventory** form
Maintenance/Test User fields	**Maintenance/Test Detail** form
Vendor User fields	**Vendor** form
Vendor Contact User fields	**Vendor** form
Hydrant Management	
Hydrant User fields	**Hydrant** form
Hydrant Activity User fields	**Hydrant Inspection** form
Hydrant Contact User fields	**Contact Detail** form
Department Journal & Events	
Department Event User fields	**Department Event** form

Anatomy of a User-Defined Fields Form

NOTICE

User-Defined Field Values

User-defined fields are always associated with a specific record type. Values for the user-defined fields are always added from the Other section of the associated record type. See page 59 for a list of available record types and their corresponding data entry form. See page 61 for the steps to add user defined fields.

The anatomy of a complete **User Fields** form is illustrated below.

Form caption. See page 61 to modify.

Page section. See page 62 to add.

Label. See page 63 to add.

Text Box. See page 64 to add.

* Combo Box. See page 68 to add.

Edit Box. See page 66 to add.

List Box. See page 69 to add.

Option Group. See page 67 to add.

Status Bar. See page 62 for details.

Spinner. See page 70 to add.

Check Box. See page 68 to add.
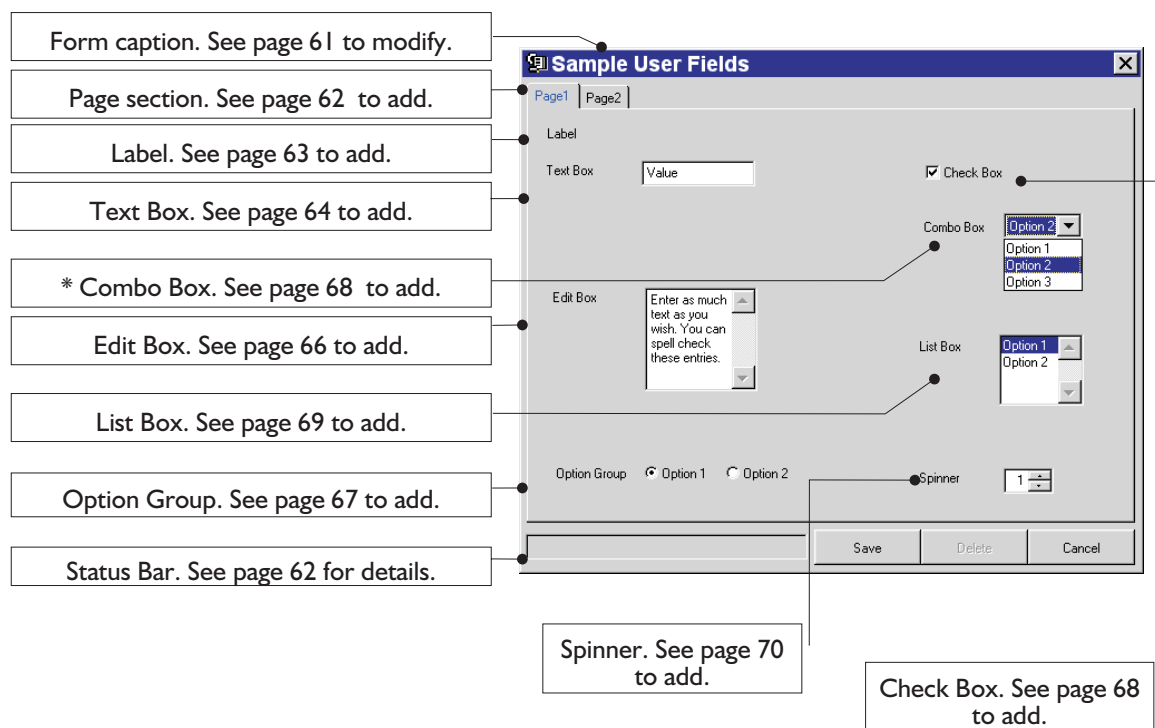
The different types of fields you can add are detailed on page 64.

* available Combo Box options are only displayed when the down arrow is clicked. The pictured Combo Box is 'opened'.

Layout Form

During the layout process, you specify the **User Fields** form's "run-time" appearance and define field layout. When you add a user-defined field, a field is added to the **User Fields** form and to the user-defined field table.

Before adding the user-defined fields to the **User Fields** form, consider how the fields will be arranged on the form. You can title the form and add multiple pages to the form to group related fields, and minimize clutter. We do not recommend adding multiple pages to a **User Fields** form unless you have specific reasons for doing so.

The **User Fields Toolbar** provides buttons for adding user-defined fields and specifying the user-defined field form layout.

About Form Options

Form options include specifying the caption at the top of your **User Field** form, setting the sequence the cursor travels through the fields when **Tab** is pressed, and adding available form sections. After selecting a specific record type to add user-defined fields to, complete the following steps:

See "Access User Field Setup" on page 62 for the steps to access a specific user-defined field.

To Access User Field Layout Form

NOTICE
First Time Set Up

User-defined fields can be initially setup directly from the form where they will be entered. To set up user-defined fields for the first time, access the *Other* section of the form where the user-defined field will be added and press **User Fields...** then answer **Yes** to prompt.

The user-defined fields can be added or modified from the user-defined fields area.

✪ From the **Administration** menu, select **User-Defined Fields...** option. The **User-Defined Fields Setup** form is displayed.

✪ Press ⊞ next to the specific record area you wish to add user-defined fields to. Specific data tables for the area are listed.

See the table starting page 59 for a list of areas and the specific forms that access the user field areas.
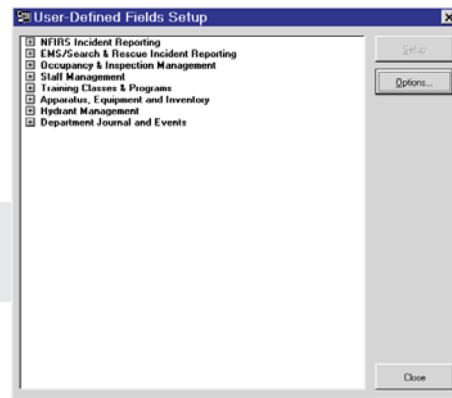
✪ Highlight the specific data table you want to add user-defined fields to (*Apparatus*/*Equipment & Inventory* is selected above).

✪ Press **Setup**. The **User-Defined Fields** form for the selected record is displayed.

The process for adding user-defined fields is detailed starting page 64.

To Set User-Defined Field Form Options

1. Press 🖼. The **Form & Table Properties** form is displayed.

2. Type a caption to display at the top of the **User Fields** form in *Form Caption*.

3. Select a *Field Tab Order*:

Left to Right

| Field 1 | → | Field 2 |
| Field 3 | → | Field 4 |

Top to Bottom

| Field 1 | → | Field 3 |
| Field 2 | → | Field 4 |
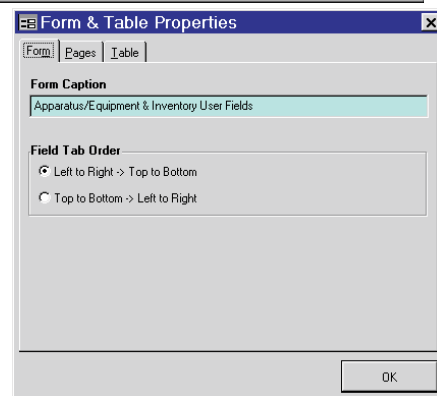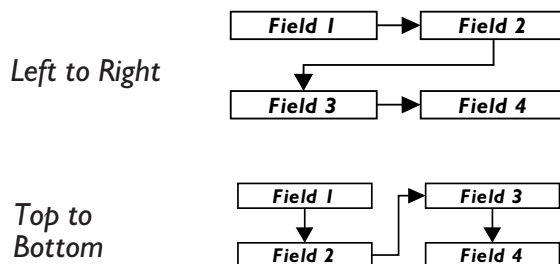
To Add Sections to User-Defined Field Forms

You can add sections to a user fields form so related fields can be grouped and separated from other groups of fields. These pages are like

the sections in other FH data entry forms. You specify the tab caption(s).

1. Press ![icon] . The **Forms & Table Properties** form is displayed.

2. Select the *Pages* tab.

3. Press **New**. The **Page Properties** form is displayed.

4. Type a page caption to display in the tab.

5. Press **OK**.

Repeat steps 3 to 5 for each additional page.

✪ Press **OK** once you have finished creating pages.

See page 60 for an example of a two page **User Fields** form.

A To Add Label to User-Defined Field Form

A label can be used to identify an area of the user-defined form.

✪ Press A then position your cursor in the area you wish to add the label to.

✪ Press your left mouse button. The **Label Properties** form is displayed.

✪ Type the text for the label, then press **OK**. The label is inserted where the cursor was originally positioned.

▦▦◉▣▤▤▤ About User-Defined Fields

All available control types, and the allowable data types for each, are listed below.

Control Types	Character	Numeric	Integer	Date	Logical	Memo	
▦ Text Box	X	X	X	X	X		
▦ Edit Box						X	
◉ Option Group	X	X	X				
▣ Check Box					X		
▤ Combo Box	X	X	X				
▤ List Box	X	X	X				
▤ Spinner		X	X				

There are two additional control types associated with Text Boxes:

	Character	Numeric	Integer	Date	Logical	Memo	
▦ Text Box, Date Lookup				X			

Automatically created for Text Box controls with Date for Data Type.

	Character	Numeric	Integer	Date	Logical	Memo	
▦ Text Box, Code Lookup	X						

Automatically created for Text Box controls with Lookup Checked.

Data Types:

Character - Alphanumeric characters
Numeric - Number characters

Integer - Whole numbers only
Date - Dates only
Logical - True/False only

Adding User-Defined Fields to Form

Add fields to the form using the **User Fields Toolbar**. Available options depend on the control type you select from the toolbar. When you add a user field, you specify the field properties and place the defined field on the **User Fields** form. Once defined, the field is simultaneously added to a database and to the form.

▦ To Add User-Defined Text Field

Access the **User Fields** form for the record type to add the user-defined field to, then complete the following steps:

✚ Press [abl] then position your cursor in the area you wish to add the field to.

✚ Press your left mouse button. The **User-Defined Field Properties** form is displayed.

✚ Type a name for the new field in *Field Name*. *Caption* is automatically filled with the value entered in *Field Name*. Edit this value if you want the label displayed next to the field to be different than the field name.

✚ Select the appropriate data type, length, decimals (numeric only), and formatting options. The data types, length and available formatting options for each are listed below.
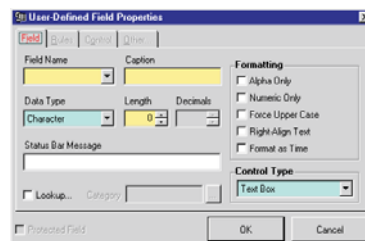
Data Types	Length	Formatting Options	Notes
Character	#254	Alpha Only Numeric Only Force Upper Case Right-Align Text Format As Time	If you Format as Time, a length of 5 or 8 is required.
Numeric	#254	Display Blank if Zero Leading Zeroes Format as Currency	Specify the decimal value in *Decimals*.
Integer	4		
Date	8	None	
Logical	I	None	

✚ Type a message in *Status Bar Message* to display a message in the status bar when the cursor is in the field.

To Make User-Defined Field Lookup Driven

If you want users to select values from an existing lookup category, or you wish to create a list of valid values from which users can select, you should make this field lookup driven. Only text fields that are "character" data type can be lookup-driven fields. You can either select an existing category (described below) or create a new lookup category (described page 65).

✚ Check *Lookup*. The *Category* field becomes required.

✚ Specify the *Category*.

✚ To add an existing lookup table and category, press [...] in the *Category* field and select a category, then press **Select**.

✚ To add a new category, type the new lookup category name in *Category*. When you save the field properties, you are prompted to create the new lookup category.

- ◌ Select **Yes** to the prompt and the entered category is automatically added to the *User Defined Field Codes* lookup table.
- ◌ Add valid codes to your new lookup category now by saving the user-defined field, then pressing ⊡ next to the new lookup-driven user-defined field you created.

What's Next?

Display the *Rules* section to specify rules or default values for the user-defined field. For more information, go to page 71. Otherwise, save the new field properties.
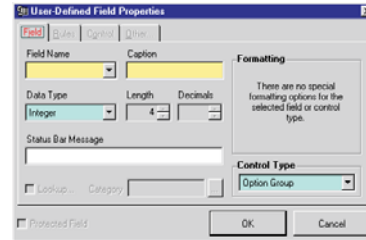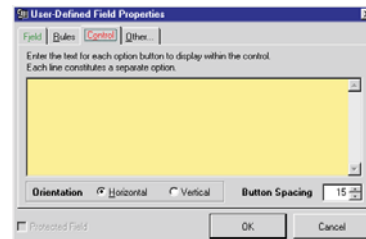
- ⊕ Press **OK** to save the user-defined field properties. The **User Fields** form is displayed with the new field displayed where the cursor was positioned. You may add another field or press **Save** to finish the user-defined field form.

▣ To Add Edit Box

With the **User Fields** form displayed, complete the following steps:

See page 62 for the steps to access the desired user field form.

- ⊕ Press ▣ then position your cursor in the area you wish to add the field to.
- ⊕ Press your left mouse button. The **User-Defined Field Properties** form is displayed.
- ⊕ Type a name for the new field in *Field Name*. *Caption* is automatically filled with the value entered in *Field Name*. Edit this value if you want the label displayed next to the field to be different than the field name.
- ⊕ The *Status Bar Message* display messages associated with each field in the status bar when the cursor is in the field.
- ⊕ Check *Force Upper Case* if you want all text entered in the user-defined field to be capitalized.
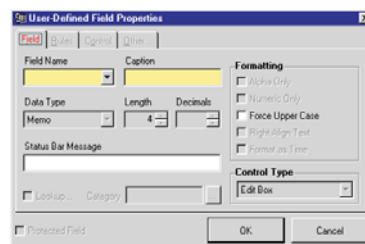
What's Next?

Display the *Rules* section to specify rules or default values for the user-defined field. For more information, go to page 71. Otherwise, save the new field properties.

- ⊕ Press **OK** to save the user-defined field properties. The **User Fields** form is displayed with the new field displayed where the cursor was positioned. You may add another field or press **Save** to finish the **User Fields** form.

⊙ To Add Option Group

With the **User Fields** form displayed, complete the following steps:

See page 62 for the steps to access the desired user field form.

✛ Press ⊙ then position your cursor in the area you wish to add the field to.

✛ Press your left mouse button. The **User-Defined Field Properties** form is displayed.

✛ Type a name for the new field in *Field Name*. *Caption* is automatically filled with the value entered in *Field Name*. Edit this value if you want the label displayed next to the field to be different than the field name.

✛ Select the appropriate data type:
  • *Integer* (default).
  • *Character*, and specify a length up to 254.

✛ The *Status Bar Message* display messages associated with each field in the status bar when the cursor is in the field.

✛ Optionally add rules or default values. Display the *Rules* section to specify rules or default values for the user-defined field. For more information, go to page 71. Otherwise, add options (below).

✛ You must add options for the options group. Each option you add will be added as a radio button:

  ⊙ Press the *Control* tab to display the *Control* section.

  ⊙ Place your cursor in the text area and type the text for the first option. If you are adding an additional option, press **Enter** and type text for the additional option; otherwise, skip to the next step.

NOTICE
Values Entered
Into Field

Values for *Integer* type option groups are entered into the user field table as "1" for the first option, "2" for the second, and so forth. *Character* type option groups are represented by the actual option text specified above. Note that if the option group text is more characters than specified in *Length*, that particular option will not be selectable from the user form.

  ⊙ Select *Horizontal* if you want options to display side by side. *Vertical* places the options one over the other.

- Specify the number of pixels to place between options in *Button Spacing*.

◯ Press **OK** to save the user-defined field properties. The **User Fields** form is displayed with the new field displayed where the cursor was positioned. You may add another field or press **Save** to finish the **User Fields** form.

☒ To Add Check Box

With the **User Fields** form displayed, complete the following steps:

See page 62 for the steps to access the desired user field form.

◯ Press ☒ then position your cursor in the area you wish to add the field to.

◯ Press your left mouse button. The **User-Defined Field Properties** form is displayed.

◯ Type a name for the new field in *Field Name*. *Caption* is automatically filled with the value entered in *Field Name*. Edit this value if you want the label displayed next to the field to be different than the field name.

◯ Type general information to display in the status bar when the cursor is in the user-defined field in *Status Bar Message*.

◯ Optionally add rules or default values. Display the *Rules* section to specify rules or default values for the user-defined field. For more information, go to page 71. Otherwise, add options (below).

◯ Press **OK** to save the user-defined field properties. The **User Fields** form is displayed with the new field displayed where the cursor was positioned. You may add another field or press **Save** to finish the **User Fields** form.
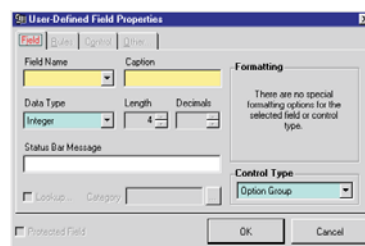
▦ To Add Combo Box

With the **User Fields** form displayed in layout mode, complete the following steps:

See page 62 for the steps to access the desired user field form.

◯ Press ▦ then position your cursor in the area you wish to add the field to.

◯ Press your left mouse button. The **User-Defined Field Properties** form is displayed.

◯ Type a name for the new field in *Field Name*. *Caption* is automatically filled with the value entered in *Field Name*. Edit this value if you want the label displayed next to the field to be different than the field name.

✛ Select the appropriate data type:
- *Integer* (default).
- *Character*, and specify a length up to 254.

✛ The *Status Bar Message* display messages associated with each field in the status bar when the cursor is in the field.

✛ Optionally add rules or default values. Display the *Rules* section to specify rules or default values for the user-defined field. For more information, go to page 71. Otherwise, add options (below).

✛ Press the *Control* tab to display the *Control* section.

✛ Place your cursor in the text area and type the text for the first option. If you are adding an additional option, press **Enter** and type text for the additional option; otherwise, skip to the next step.

| NOTICE
Values Entered Into Field	Values for *Integer* type option groups are represented in the user field table when selected as "1" for the first option, "2" for the second, and so forth. *Character* type option groups are represented by the actual option text specified above. Note that if the option group text specified above is more characters than specified in *Length*, that particular option will not be selectable from the user form.

✛ Press **OK** to save the user-defined field properties. The **User Fields** form is displayed with the new field displayed where the cursor was positioned. You may add another field or press **Save** to finish the **User Fields** form.

📖 To Add List Box

With the **User Fields** form displayed, complete the following steps:

✛ Press 📖 then position your cursor in the area you wish to add the field to.

✛ Press your left mouse button. The **User-Defined Field Properties** form is displayed.

✛ Type a name for the new field in *Field Name*. *Caption* is automatically filled with the value entered in *Field Name*. Edit this value if you want the label displayed next to the field to be different than the field name.

✛ Select the appropriate data type and length. Available data types and lengths for each are listed below.
- *Integer* (default).
- *Character*, and specify a length up to 254.

✛ The *Status Bar Message* display messages associated with each field in the status bar when the cursor is in the field.

✛ Optionally add rules or default values. Display the *Rules* section to specify rules or default values for the user-defined field. For more information, go to page 71. Otherwise, add options (below).

✪ Press the *Control* tab to display the *Control* section.

✪ Place your cursor in the text area and type the text for the first option. If you are adding an additional option, press **Enter** and type text for the additional option; otherwise, skip to the next step.

NOTICE Values Entered Into Field	Values for *Integer* type option groups are represented in the user field table when selected as "1" for the first option, "2" for the second, and so forth. *Character* type option groups are represented by the actual option text specified above. Note that if the option group text is more characters than specified in *Length*, that particular option will not be selectable from the user form.

✪ Press **OK** to save the user-defined field properties. The **User Fields** form is displayed with the new field displayed where the cursor was positioned. You may add another field or press **Save** to finish the **User Fields** form.

🔲 To Add Spinner

With the **User Fields** form displayed, complete the following steps:

See page 62 for the steps to access the desired user field form.

✪ Press 🔲 then position your cursor in the area you wish to add the field to.

✪ Press your left mouse button. The **User-Defined Field Properties** form is displayed.

✪ Type a name for the new field in *Field Name*. *Caption* is automatically filled with the value entered in *Field Name*. Edit this value if you want the label displayed next to the field to be different than the field name.

✪ Select the appropriate data type, length, decimals (numeric only), and formatting options:

Data Types	Length	Formatting Options	Notes
Numeric	#254	Display Blank if Zero Leading Zeroes	Specify the decimal value in *Decimals*.
Integer	4	Format as Currency	

✪ The *Status Bar Message* display messages associated with each field in the status bar when the cursor is in the field.

✪ Optionally add rules or default values. Display the *Rules* section to specify rules or default values for the user-defined field. For more information, go to page 71. Otherwise, add options (below).

✪ Press **OK** to save the user-defined field properties. The **User Fields** form is displayed with the new field displayed where the cursor was positioned. You may add another field or press **Save** to finish the **User Fields** form.

Setting Rules for User-Defined Fields

Rules and default values can be specified for all user field types.

To Specify Rules/Default Values for User-Defined Fields

With the **User-Defined Field Properties** form displayed:

✚ Press the *Rules* tab to display the *Rules* section.

✚ Enter rules or default values. Rules are divided into the following types:

- *Default Value*. Specify value to default in the field so when a new record is created, the default value is inserted.

See page 25 for more information on adding default values.

- *Require.* Specify that a certain field is required when the record is entered in the **User Fields** form. When a field is required but not complete, the field is listed as required in the validation results when you attempt to save the record. Logical fields can not be required.

See page 26 for more information on creating rules.

- *Validation*. Enter validation rule for the field to be valid. If the field value is not valid under the rules you define, the field is tagged as invalid. Entering a message in the *Validation Error Message* field helps users correct their mistake.

See page 27 for more information on adding validation rules.

- *Disable/Hide*. Enter expression that, when true, disables field. Check *Remove field from page if above condition is true* if you want do not want the field to display when the expression is true. Note that if all fields in a page are hidden, the page is also hidden.

- *Update Field*. Select a field to replace, specify the condition to meet, then enter the value or expression to use as a replacement value in the *Field to Replace*.

✚ Press **OK** to save the rules.

Saving User Fields Form

After you have defined the form properties, laid the form out, and added the desired fields, you can save the **User Fields** form.

To Save User-Defined Fields Form

With the **User Fields** form that you just created displayed:

✪ Press **Save**. All field additions and modifications are listed in the **Confirm Update** form (if modifications were made).

✪ Press **OK**. The **User-Defined Fields Setup** form is displayed.

You're ready to start using your user-defined fields.
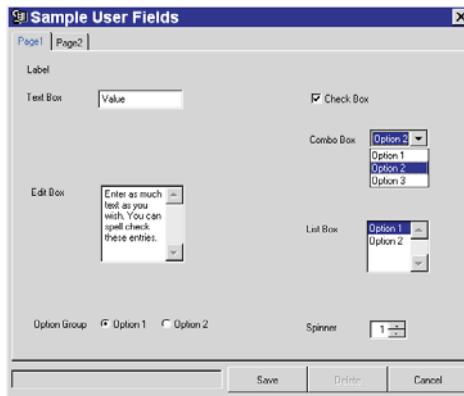
Modifying User-Defined Fields

You should not change user-defined field properties after data has been entered into them. You can either remove fields from the **User Fields** forms only, or remove the field from the form and the user field table. If user fields are deleted after data has been added to the user field, data will be lost.

To Remove User-Defined Fields from Form

Access the user-defined fields form to remove fields from, then complete the following steps:

✪ Position your cursor over the field to remove, then press your right-mouse button. A menu of options is displayed.

✪ Select **Delete Field...** The **Delete Field** prompt is displayed.

✪ Select whether to remove the field from the table and form, or just the form:

  ✪ Select *Delete the field from the user fields table* to remove the field from the **User Fields** form and the user-defined fields table. Consider carefully before deleting user-defined fields from user fields tables, as these fields may be referenced in queries and reports throughout your system and their removal may cause error messages.
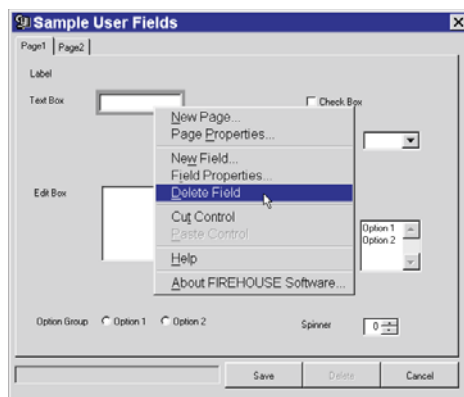
- Select *Remove the control from the form* to remove the field from the **User Fields** form and leave the field in the user-defined fields table.
- Press **OK**.

To Review User-Defined Fields

You can view a list of all user-defined fields added for a specific area, regardless of whether the user-defined field is included in a user field form. After selecting the area to review user-defined fields for, complete the following steps:

See "Access User Field Setup" on page 62 for the steps to access a specific user-defined field.

- Press . The **Form & Table Properties** form is displayed.
- Access the *Table* section. All user-defined fields for the area are listed.

| NOTICE | If you are encountering errors as a result of a user-defined |
| Bad User Fields | field that is no longer used and for which entered data is no longer required, you can highlight the user-defined field and press **Delete**. |

To Move User-Defined Fields

You can not move a user-defined field from one area to another (for example, NFIRS Incident Report User Fields can not be moved to the Occupancy User Fields area) but you can move a user-defined field within the same area. For example, if you added a new page to the user-defined field form.

Access the user-defined fields form to remove fields from, then complete the following steps:

See page 62 for the steps to access user-defined fields forms.

- Position your cursor over the field to remove, then press your right-mouse button. A menu of options is displayed.
- Select **Cut Control**. If a label is associated with the control, highlight, press your right-mouse button, and select **Delete Label**.
- Access the new page added to the user-defined fields form.
- Position your cursor over the field to remove, then press your right-mouse button. A menu of options is displayed.
- Select **Paste Control**. The control is pasted onto the form. Add a label if necessary.

Using User-Defined Fields

Once you have set up the user-defined fields, you are ready to enter data. User-defined fields are always accessed from the main data entry form *Other* section **User Fields...** button.

The list of areas that you can add user-defined fields to, and the corresponding data entry form for the user-defined are listed on page 59.

When you press **User Fields...**, the user-defined form with the fields you have added is displayed.

Chapter 7

Creating Queries

Queries are a powerful tool for gathering and using information entered into FH. Queries drive the following:

- **Browse** lists of available records used to select specific records.
- **Report** forms that display information from your system. Reports can be formatted to display information in a variety of ways and can include calculated fields that statistically analyze data on the form.
- **Graph** charts that visually display your data.
- **Map** plots that visually display your data.
- **Data Export** definitions that create customized FH export files. Certain states use this functionality to collect data not included in standard NFIRS and EMS exports. Custom data exports that use *Data Export* type queries are only available as installable components.

Browse lists and reports are an important part of getting the most out of FH. Browse lists are displayed when you press the **Browse** button from data entry forms, and are used to locate specific records, browse available records, and even to share information with others by creating files in an external data format. You will use reports to track important department statistics, to justify expenditures, and manage resources. Graphs and maps are powerful tools for displaying your data visually.

Queries gather data that has been entered into FH and formats the data for use in browse lists, reports, graphs, and maps. Reports, graphs, and maps can include multiple queries, browse lists only allow one. You can not add or modify the FH data directly through a query.

> **NOTICE**
> Multiple Uses
>
> A single query can be used in multiple places (for example, for a browse list and a report). Bear in mind that if the multi-purpose query is changed to suit a specific purpose (for example, to change the sort order for a browse list) the change will also affect (and potentially invalidate) the report that uses the same query.

Queries are structured questions that gather specific information from available FH data. The information gathered by the query is stored in a temporary file called the *results table*. Data from the results table can be used to create reports and browse lists. Queries for reports are built using the **Report Setup** form. Queries for browse lists are built using the **Query Designer** form. The process for starting and completing queries is detailed below.

1. Access Query. See page 77 for details.
2. Set Properties. See page 78 for details.
3. Select Tables. See page 81 for details.
4. Select Fields. See page 82 for details.
5. Join Tables. See page 87 for details.
6. Filter Results. See page 90 for details.
7. Order Results. See page 91 for details.
8. Group Results. See page 92 for details.
9. Limit Results. See page 92 for details.
10. Pivot Table. See page 94 for details.

If the query is already available, and you are creating a report, graph, or map, additional details are available:

- The report design process is detailed in Chapter 8.
- The graph creation process is detailed in Chapter 12.

Adding and Accessing a Query

New queries can be created from several locations based on whether they will be used for a browse list, a report, graph, or map.

CAUTION
Avoid Editing Existing Queries

When you attempt to edit a query that is already in use, a list of places the query is used by is displayed (if used by other browse lists, reports, graphs, or maps). Avoid modifying used queries since modifications could invalidate the browse list, report, graph or map using the query. Copy the query before changing it. FH automatically asks you if you want to copy an existing query when you add a new query.

To Add a New Query

✪ From **Tools** menu, select the **Queries...** option. The **All Queries** form is displayed.

✪ Select the desired group. Query groups correspond to specific modules. Under each query group are subcategories that correspond with specific module records.

Note: Queries can be added during the report or graph creation process and from browse lists.
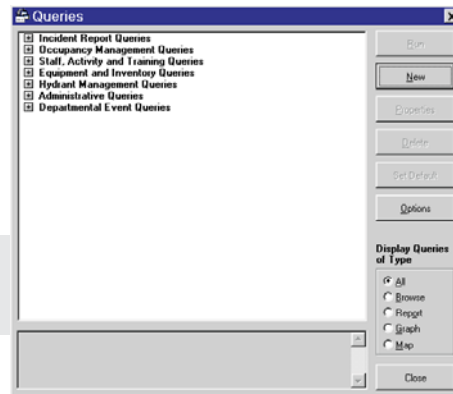
✪ Press **New**. The prompt *Would you like to start by making a copy of an existing query?* is displayed. Copying an existing query can save time since it will copy any joins, filters, and so on.

  ✪ If you selected *Yes* to prompt, the **Select a Query** form is displayed. Highlight the query you wish to copy, then press **Select**. The **Query Designer** form with information from the copied query is displayed.

  ✪ If you selected *No* to prompt, the **Query Designer** form is displayed.

✪ Complete the **Query Designer** form. The steps are detailed below.

To Access an Existing Query

✪ From **Tools** menu, select the **Queries...** option. The **All Queries** form is displayed.

✪ Select the desired group and query then press **Properties**.

✪ If prompted that the query is in use elsewhere in FH, press **OK**.

✪ If prompted that the query is a system query, press **Yes**.

Query Designer Properties

The *Properties* section contains descriptive information about the query. The *Properties* section is detailed below.

To Define Query Properties

✪ From **Tools** menu, select the **Queries...** option. The **All Queries** form is displayed.

✪ Select the desired group.
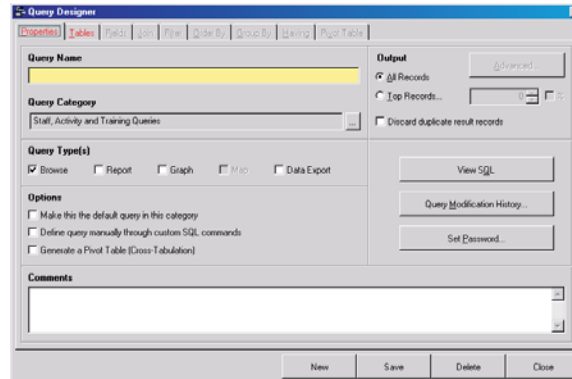
NOTICE
Make a Copy

We do not recommend modifying an existing query – it is better to make changes to a copy of the original to prevent problems.

✪ Press **New**. The prompt *Would you like to start by making a copy of an existing query?* is displayed. Copying an existing query can save time since it will copy any joins, filters, and so on.

　　✪ If you selected *Yes* to prompt, the **Select a Query** form is displayed. Highlight the query you wish to copy, then press **Select**. The **Query Designer** form with information from the copied query is displayed.

　　✪ If you selected *No* to prompt, the **Query Designer** form is displayed.

✪ Type a title for the report in *Query Name*. Be descriptive as this name is used in the list of queries.

✪ Check ⬚ and select the category in *Query Category*.

✪ Select *All Records* to view all records or select *Top Records...* and determine the percent or number of records you want to include in the query results.

✪ Check *Discard duplicate result records* to display unique records only.

✪ Choose where the query results will be available in the *Query Types* area. Select any combination of the following query types:

• *Browse*. Used in browse lists for selecting records.

• *Report*. Used to gather information for reports.

• *Graph*. Used to gather information for graphs.

• *Map*. Used to gather information for maps.

- *Data Export*. Used to gather information for custom data exports.

✛ Check *Make this the default query in this category* to assign a default query. There can be only one default query for each category. The default *Browse* type query is displayed when you press **Browse** from the data-entry form for the query category. For example, the default *Occupancy Management Queries: Occupancy Queries* category is displayed when you press the **Occupancy** form **Browse** button.

✛ Check *Define query manually through custom SQL commands* to manually enter Structured Query Language (SQL) commands to gather data from FH tables. Not recommended for non-programmers.

See "Customize SQL" on page 79 for steps to define queries using SQL commands.

✛ Check *Generate a Pivot Table (Cross Tabulation)* to analyze data as three separate data elements. These three elements represent the X axis, the Y axis, and the cell value for the graph.

When checked, you must complete the *Pivot Table* section. See page 94 for details.

✛ Add *Comments* to list in the lower left corner of the queries window whenever this query is selected.

Custom SQL Statements

You can define a query using SQL statements if desired. Most users don't need to create queries using custom SQL commands since the standard query designer functionality is so powerful and easy to use. Familiarity with SQL and FH data structures is required to customize queries using SQL.

As you create a query using the Query Designer (that is, create the query by selecting tables and fields, steps that are detailed later) FH creates the necessary SQL commands to gather the data from FH. The SQL commands can be viewed for your reference. The SQL commands are read-only.

To Customize SQL
✛ From **Tools** menu, select the **Queries…** option. The **All Queries** form is displayed.

✛ Select the desired group and query then press **Properties**.

✛ If prompted that the query is in use elsewhere in FH, press **OK**.

✛ If prompted that the query is a system query, press **Yes**.

✛ In the **Options** area, check *Define query manually through custom SQL commands*. The **View SQL** button changes to **Customize SQL**.

✛ Press **Customize SQL**. The **Query-Customize SQL** form is displayed.

⊕ Type valid SQL commands to gather specified values from FH data tables and fields, then press **OK** when finished.

It is beyond the scope of this manual and FH technical support to cover SQL commands.

To View SQL
⊕ From **Tools** menu, select the **Queries…** option. The **All Queries** form is displayed.
⊕ Select the desired group and query then press **Properties**.
⊕ If prompted that the query is in use elsewhere in FH, press **OK**.
⊕ If prompted that the query is a system query, press **Yes**.
⊕ Press **View SQL** then press **Close** when finished.

Modification History and Passwords

You can review the last user to modify the query, and the date the modification was made. You can also require that a password be entered before a query is run. A password must be entered anytime the query is run (reports, browse lists, etc.).

To View Query Modification History
⊕ From **Tools** menu, select the **Queries…** option. The **All Queries** form is displayed.
⊕ Select the desired group and query then press **Properties**.
⊕ If prompted that the query is in use elsewhere in FH, press **OK**.
⊕ If prompted that the query is a system query, press **Yes**.
⊕ Press **Query Modification History** then press **OK** when finished.

To Password Protect a Query
⊕ From **Tools** menu, select the **Queries…** option. The **All Queries** form is displayed.
⊕ Select the desired group and query then press **Properties**.
⊕ If prompted that the query is in use elsewhere in FH, press **OK**.
⊕ If prompted that the query is a system query, press **Yes**.
⊕ Press **Set Password…** The **Query Password** form is displayed.
⊕ Type the password for the query in *Password* then type the password again in *Confirm Password*.
⊕ Press **OK**. The query is password protected.

Query Designer Tables

All available tables are displayed in the left-hand box of the **Query Designer** form *Tables* section. The right-hand box lists the tables selected to be included in the query.

To Add a Table to Query

✪ Access the query to add tables to, then click the *Tables* tab.

The steps to add a new query or access an existing query are detailed on page 77.

✪ Highlight the available table name in the left-hand box, then double-click or press [›] and the table is added to *Selected Tables*. When you add a table, all fields in the table are available in the *Fields* section.

When you add multiple tables, the tables need to have a common field to relate the records in the two tables together. FH attempts to determine the proper fields to "join" the tables on. You should check all joins for accuracy, as improper joins will create invalid query results.
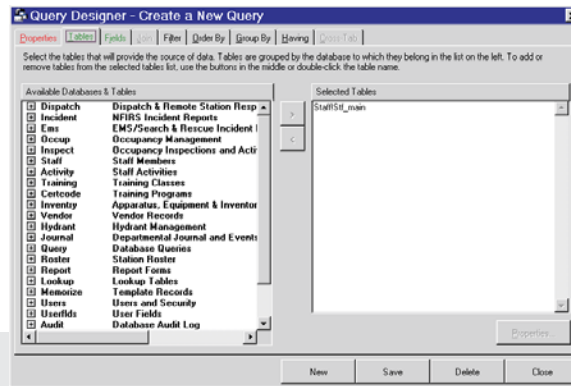
To Display Table Properties

✪ Access the **Query Designer** form *Tables* section.

✪ Highlight the table name listed in *Selected Tables* and press **Properties...** The **Query Table Properties** form is displayed.

- *Table Source* lists the name of the database and table using the format:
  DBC Name!DBF Name
  where **DBC Name** is the name of the database (the **.DBC** extension is not included) and **DBF Name** is the name of the table included in the DBC (the **.DBF** extension is not included). You cannot modify this field.

- *Local Alias* by default, lists the name of the table. This name is used throughout the query when fields from the table are used. You can modify *Local Alias* if necessary.

✪ Press **OK** to exit this form.
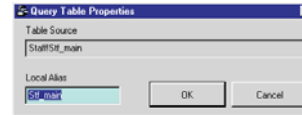
Query Designer Fields

All available fields and the fields included in the query are displayed in the **Query Designer** form *Fields* section. The left-hand fields are the fields in the tables you have selected to add in the *Table* section. The fields in the right-hand box are fields you select to add to the query.

To Add Fields from Table

✪ Access the **Query Designer** form *Fields* section.

✪ Select field or fields to add:

- ✪ To select one field, highlight the field name in the left-hand box then double-click or press ⟩.
- ✪ To select a range of fields, click on the first list item in the range, press **Shift**, then click the last list item in the range. All list items between the first and last records in range are highlighted.
  - ✪ Release the **Shift** key then press ⟩ to add highlighted fields to query.
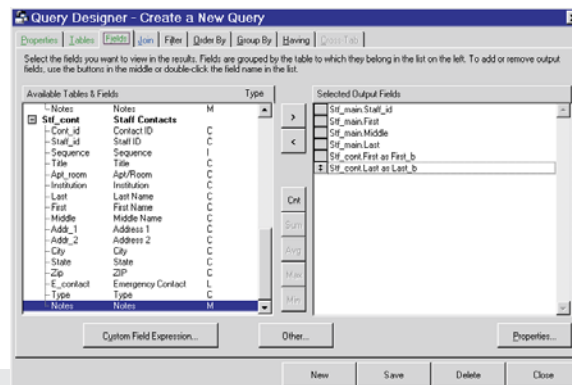
- To select items spread throughout the list (not adjoining), click on a list item, press **Ctrl**, then click an additional list item, repeating until all list items are selected.
    - Release the **Ctrl** key then press ⟩ to add highlighted fields to query.

Certain master records include a field used to determine if the record should be hidden. When this *Hide* field is added for the query, the **Query** form displaying query results includes a checkbox to show or hide 'hidden' records.

NOTICE Masked Data	If **Respect View Security and Privacy in Queries and Reports** is enabled via the **Administrative Options** form *Database* section *Rules and Security* section, protected information is masked in all queries and reports that do not include the record ID field regardless of the security level of the user. Include the ID fields for the following list of tables to use this feature: EMS Patient, EMS_PTNT.PTNT_ID Incident Arson Involvements, INC_ASUB.SUSP_ID Incident Civilian Casualties, INC_CCAS.CAS_ID Incident Fire Service Casualties, INC_FCAS.CAS_ID Incident Involvements, INC_INVL.INVL_ID

Adding Calculated Fields to Query

Calculated fields will perform a mathematical calculation on specified data. There are the following available calculation fields available:

- Adding count fields to your query allows you to display the number of occurrences of a specific field (either all records or unique values). For example, you can list the total count of records.
- Adding *Sum* fields to your query allows you to add the values in numeric fields together. For example, you can list the total sum of values for a specific field.
- Adding *Average* fields to your query allows you to average the values in numeric fields together.
- Adding *Max* fields to your query allows you to display the highest value in numeric fields.
- Adding *Min* fields to your query allows you to display the smallest value in numeric fields.
- A variety of other custom formats can be added. Available formats depend on the format of the field. Select the *Other* button for preset options available for the field.
- You can customize the value included in the query if you are familiar with building advanced expressions in FH.

To Add a Count Field

✪ Access the **Query Designer** form *Fields* section:

The steps to add a new query or access an existing query are detailed on page 77.

✪ Highlight the field name in the left-hand box then press [Cnt] . You are prompted to count all records, or distinct values.

✪ Press **Yes** to add a count of all records, and **No** to count only distinct values.
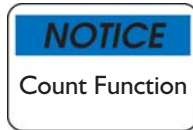
NOTICE Count Function	When you count all records, every record is included in the count. When a distinct count is used, only distinct values are included. The distinct count will be equal to or less than the total count.
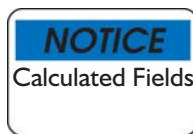
NOTICE Calculated Fields	*Cnt*, *Sum*, *Avg*, *Max*, *Min*, and certain *Other...* fields are calculated fields. If a calculated field is added to the query, you must add a "reset" point for the calculation in the *Group* section, or the result table will include only one record because there is only a single calculated field result.

Add Sum Field

✪ Access the **Query Designer** form *Fields* section:

The steps to add a new query or access an existing query are detailed on page 77.

✪ Highlight the field name in the left-hand box then press [Sum] .
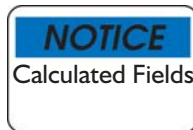
NOTICE Calculated Fields	*Cnt*, *Sum*, *Avg*, *Max*, *Min*, and certain *Other...* fields are calculated fields. If a calculated field is added to the query, you must add a "reset" point for the calculation in the *Group* section, or the result table will include only one record because there is only a single calculated field result.

Add Average Field

✪ Access the **Query Designer** form *Fields* section:

The steps to add a new query or access an existing query are detailed on page 77.

✪ Highlight the field name in the left-hand box then press [Avg] .

NOTICE Calculated Fields	*Cnt*, *Sum*, *Avg*, *Max*, *Min*, and certain *Other...* fields are calculated fields. If a calculated field is added to the query, you must add a "reset" point for the calculation in the *Group* section, or the result table will include only one record because there is only a single calculated field result.

Add Max Field

✪ Access the **Query Designer** form *Fields* section:

The steps to add a new query or access an existing query are detailed on page 77.

✪ Highlight the field name in the left-hand box then press [Max] .
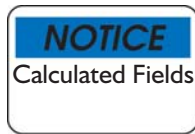
NOTICE Calculated Fields	*Cnt*, *Sum*, *Avg*, *Max*, *Min*, and certain *Other...* fields are calculated fields. If a calculated field is added to the query, you must add a "reset" point for the calculation in the *Group* section, or the result table will include only one record because there is only a single calculated field result.

Add Min Field

✪ Access the **Query Designer** form *Fields* section:

The steps to add a new query or access an existing query are detailed on page 77.

✪ Highlight the field name in the left-hand box then press [Min] .
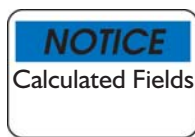
NOTICE Calculated Fields	*Cnt*, *Sum*, *Avg*, *Max*, *Min*, and certain *Other...* fields are calculated fields. If a calculated field is added to the query, you must add a "reset" point for the calculation in the *Group* section, or the result table will include only one record because there is only a single calculated field result.

Add Other Field

✪ Access the **Query Designer** form *Fields* section:

The steps to add a new query or access an existing query are detailed on page 77.

✪ Highlight the field name in the left-hand box then press [Other...] . The **Additional Query Functions** form is displayed.

Available options vary based on the field format. Highlight the function to display a description of the function.

✪ Press **OK**.
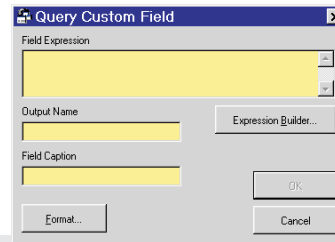
NOTICE Calculated Fields	*Cnt*, *Sum*, *Avg*, *Max*, *Min*, and certain *Other...* fields are calculated fields. If a calculated field is added to the query, you must add a "reset" point for the calculation in the *Group* section, or the result table will include only one record because there is only a single calculated field result.

To Add a Custom Expression to Query

✪ Access the **Query Designer** form *Fields* section:

The steps to add a new query or access an existing query are detailed on page 77.

✪ Press **Custom Field Expression...** and the **Query Custom Field** form is displayed.

✪ Enter a valid expression for returning your custom expression in *Field Expression* or press **Expression Builder...** to display the **Query Expression Builder** form.

✪ Enter the name to use for the custom expression in *Output Name*.

✪ Type the name to display in the column heading ("Browse" queries) or field ("Report" queries) in *Field Caption*.

✪ Check *Pad field width to* and specify the width to allocate for custom field if you want to make the field a standard width (the first value in the query results for the field will be used to set the column width if this is not enabled.

✪ Press **Format...** to display format options

Viewing and Editing Field Properties
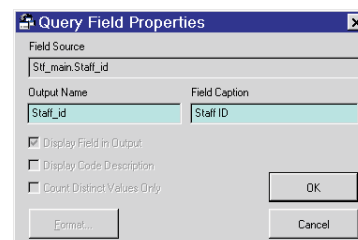
You can view and modify the properties for fields listed in *Selected Output Fields*.

To View/Edit Field Properties

✪ Access the **Query Designer** form *Fields* section:

✪ Highlight the field and press **Properties...** The **Query Field Properties** form is displayed. Note that the **Query Custom Field** form is displayed if the highlighted field is a custom expression.

- *Field Source* displays the source table name and field name.

- *Output Name* displays the field name. The value in this field is used to name query fields (for example, when selecting a field to sort by in the *Order By* section). You can edit this value if necessary.

| NOTICE
Automatic
Naming | When multiple fields with the same name are entered, text is appended to the end of the field name to avoid name duplication. |

- *Field Caption* is value used as a caption for the field in the resulting report, graph, or browse list. For example, the caption displayed at the top of the column of the **Query** form for "Browse" type queries. You can edit this value if necessary.

✪ For "Browse" query types, check *Display Field In Output* to include the field in the browse list. You may wish to exclude fields that were only added to be used for sort order.

✪ Check *Display Code Description* to automatically include a description for the code. Available only for lookup-driven fields.

✪ Check *Count Distinct Values Only* if you wish to count only distinct values. If you wish to count each repeated value leave blank. Available only for *Count* field.

✪ Press **Format...** to display format options (only available for "Browse" type queries).

✪ Press **OK** to save changes, or press **Cancel** to exit without changing properties.

Query Designer Joins

The **Query Designer** form *Join* section displays table joins. Joins are a way of joining together related records from separate tables. Joins are automatically added when multiple tables are added and the tables share a common ID field. When more than one table is added, you are prompted to specify the join type. Generally accept the default. Join types are discussed in greater detail below. Do not add additional table joins unless you have very specific reasons for doing so. The *Join* section is only accessible when more than one table is selected in the *Tables* section.

| CAUTION
Use Only As
Needed | Improper joins can result in invalid data and unpredictable query results. Allow FH to make entries where necessary and only modify this area if you know exactly what you are doing. |

To Add Table Joins

⊕ Access the **Query Designer** form *Joins* section.

⊕ Press **Add**. "Inner" is inserted into the *Type* column. Click the *Type* column and select the appropriate join types:

⊕ Select *Inner* and only the records that match the join condition from both the source and target tables are included.

⊕ Select *Left* and all records from source table and only matching records from the target table are included.

⊕ Select *Right* and all records from target table and only matching records from the source table are included.

⊕ Select *Outer* and all matching & non-matching records from both tables are included.

⊕ Click in the *Source Table* column to select the source table. The *Source Table* is where specified information originates from.

⊕ Click in the *Target Table* column to select the target table. The *Target Table* is where the information is imported to.
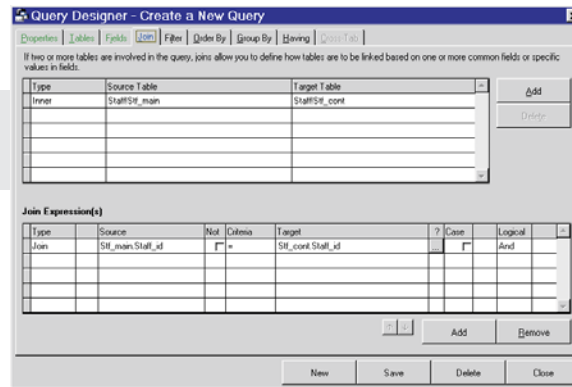
Adding Join Expressions

A join expression is automatically added when multiple tables with ID fields in common are added. Each table join has its own join expressions. When you add an additional table join, you need to specify additional criteria for applying the join condition.

To Add Join Expression

⊕ Access the **Query Designer** form *Joins* section.

⊕ Press **Add** in the **Join Expressions** area. The cursor moves to the *Type* column with "Join" selected.

⊕ Click in the *Type* column to change the join expression type:

⊕ Select *Join* to compare two field values.

⊕ Select *Value* to compare field with values you specify.

⊕ Select *Var* to compare field to a variable value.

- There is an untitled column for nesting join expressions. This advanced feature should not be used unless you are familiar with nesting join expressions.
- Click in the *Source* column and select the field from the source table.
- Check *Not* if you wish to exclude records where the join expression is true.
- Click *Criteria* column and specify the criteria operator.
- Click in the *Target* column and select the field from the source table.
- Check *Case* if you wish to ignore capitalization as criteria for evaluating data (for example, FH sees "FoxTrot" and "foxtrot" as separate values even though they use the same letters).
- There is an untitled column for nesting join expressions. This advanced feature should not be used unless you are familiar with nesting join expressions.
- Click *Logical* column if additional join expressions are to be added and a logical is required. *Logical* column options:
  - Select *Or* adds an "Or" between multiple criteria, so records will still be found even if the first criteria is not met. For example, you specify records with specific values in two fields or multiple values in one field be included in a report. You want records included even if the first criteria is not met, add two "Literal Comparison" criteria with an "Or" between them. If you do not add an "Or" between two criteria and the first criteria is not met, no records will be included in the results table even if the second criteria is met.
  - Select *And* adds an "And" between multiple criteria, so records will only be found if the first criteria and the second criteria are met.

You are ready to add filters, described on the next page.

Query Designer Filter Results

The **Query Designer** form *Filter* section includes parameters used for narrowing the query results to specific records. Adding filters is not required to complete a query.

To Add Filter Results

✪ Access the **Query Designer** form *Filter* section.

The steps to add a new query or access an existing query are detailed on page 77.

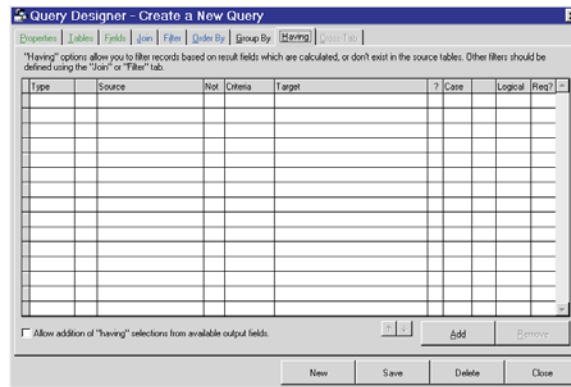✪ Press **Add**. The cursor is moved to the   column with "Value" selected.

✪ Click the   column to select a different filter type:

  ✪ Select *Table Join* to include records from two tables that have a field that has the same value. You must have two tables selected in the *Table* section, and a valid join requires that the two tables share a valid relationship.

  ✪ Select *Value* to include records when a certain field contains a value that meets certain criteria.

  ✪ Select *Var* to include records when a certain variable contains a value that meets certain criteria.

  ✪ Select *Ask* to display a prompt that asks the user to specify a certain value when the query is run.

  ✪ Select *Custom* and enter a custom expression that will include records when criteria specified in the expression is met.

✪ Click on the *Source* column to display available fields. Any fields listed in the *Fields* section are available.

✪ There is an untitled column for nesting join expressions. This advanced feature should not be used unless you are familiar with nesting join expressions.

✪ Check *Not* if you wish to exclude records where the filter expression is true.

✪ Click the *Criteria* column and specify the criteria operator.

✪ Click in the *Target* column and select the field from the source table.

✪ Check *Ignore Case* if you wish to ignore capitalization as criteria for evaluating data (for example, FH sees "FoxTrot" and "foxtrot" as separate values even though they use the same letters). This column is automatically enabled for fields that are required to be capitalized.

✪ There is an untitled column for nesting filter expressions. This advanced feature should not be used unless you are familiar with nesting join expressions.

✪ Click the *Logical* column if additional filter expressions are to be added and they are required.

Using "Or" and "And" is described page 89.

✪ Check *Required?* to make information required to perform filter.

✪ Check *Allow Addition* at the bottom of the form to allow additional criteria to be added when the query is used.

You are ready to set the sort order, described on the next page.

To Remove Filter Expression

✪ Access the **Query Designer** form *Filter* section.

The steps to add a new query or access an existing query are detailed on page 77.

✪ Highlight a filter expression then press **Remove**.

Query Designer Order By

The **Query Designer** form *Order By* section specifies how records in the results table are sorted. For example, if the browse list or report lists staff members, add the staff member's last name field in the *Selected Sort Field* box to list staff names alphabetically by last name.
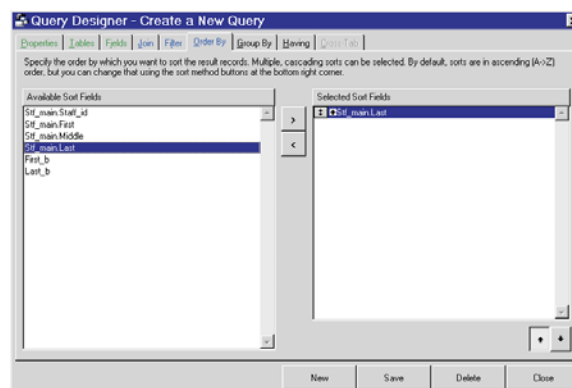
To Sort By a Specific Field Value

✪ Access the **Query Designer** form *Order By* section.

The steps to add a new query or access an existing query are detailed on page 77.

✪ Highlight the field name in the left-hand box then double-click or press [>]. Fields in the sort do not have to be in the results table.

You can add multiple fields to the sort order. See page 82 for steps to select more than one field at a time.

✪ Press [•] to sort records in ascending order (A to Z) based on the values in the highlighted field.

✪ Press [•] to sort records in descending order (Z to A) based on the values in the highlighted fields.

Most queries are finished at this point. If necessary, set query group options, described on the next page. If you have added calculated fields, you should complete query group options.

Query Designer Group Results

The **Query Designer** form *Group By* section defines the data element used to reset counters. For example, if you are listing activities for a staff member, you could add a *Count* field (*Fields* section) that would count activities for a particular staff member and the count would be reset to zero when the staff ID changed.

CAUTION

Query Results
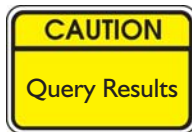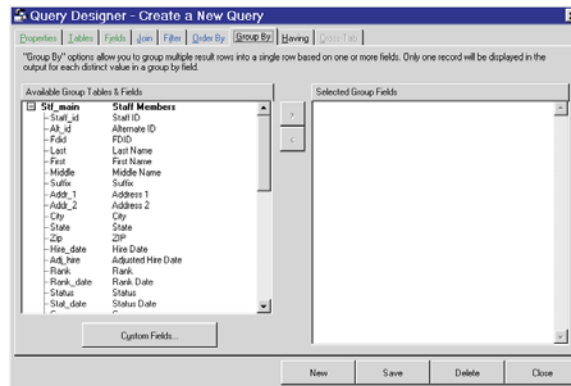
Only one record is displayed if a group is added but no *Count* field is added. Counts are unpredictable if the sort order and groups do not correspond.

To Define a Group By Field

✪ Access the **Query Designer** form *Group By* section.

The steps to add a new query or access an existing query are detailed on page 77.

✪ Highlight the field name in the left-hand box then double-click or press ⟩ .

Query Designer Limit Results

The Query Designer form *Having* section lists limiting fields that are removed from the results table at the end of the querying process. The difference between the *Filter* and *Having* section is the *Filter* section filters out data before it is included in the results table. The *Having* section filters out data that is included in the results table.

NOTICE	Typically it is not necessary to use the *Having* section
Specialized Use	

To Add Having Filter Results

✪ Access the **Query Designer** form *Having* section.

The steps to add a new query or access an existing query are detailed on page 77.

✪ Press **Add**. The cursor is moved to the ____ column with "Value" selected.

✪ Click the ____ column to select a different filter type:

- ✪ Select *Table Join* to include records from two tables that have a field that has the same value. You must have two tables selected in the *Table* section, and a valid join requires that the two tables share a valid relationship.
- ✪ Select *Value* to include records when a certain field contains a value that meets certain criteria.
- ✪ Select *Var* to include records when a certain variable contains a value that meets certain criteria.
- ✪ Select *Ask* to display a prompt that asks the user to specify a certain value when the query is run.
- ✪ Select *Custom* and enter a custom expression that will include records when criteria specified in the expression is met.

✪ Click on the *Source* column to display available fields. Any fields listed in the *Fields* section are available.

✪ There is an untitled column for nesting join expressions. This advanced feature should not be used unless you are familiar with nesting join expressions.

✪ Check *Not* if you wish to exclude records where the filter expression is true.

✪ Click the *Criteria* column and specify the criteria operator.

✪ Click in the *Target* column and select the field from the source table.

✪ Check *Ignore Case* if you wish to ignore capitalization as criteria for evaluating data (for example, FH sees "FoxTrot" and "foxtrot" as separate values even though they use the same letters). This column is automatically enabled for fields that are required to be capitalized.

⊕ There is an untitled column for nesting filter expressions. This advanced feature should not be used unless you are familiar with nesting join expressions.

⊕ Click the *Logical* column if additional filter expressions are to be added and they are required.

Using "Or" and "And" is described page 89.

⊕ Check *Required?* to make information required to perform filter.

⊕ Check *Allow Addition* at the bottom of the form to allow additional criteria to be added when the query is used.

To Remove Filter Expression

⊕ Access the **Query Designer** form *Having* section.

The steps to add a new query or access an existing query are detailed on page 77.

⊕ Highlight the having expression then press **Remove**.

Save the changes and most queries are ready for use. If this is a pivot table query, you must complete the *Pivot Table* section.

Query Designer Pivot Table

The **Query Designer** form *Pivot Table* section is for defining a pivot table to display the query results in. A pivot table summarizes data in a spreadsheet format. The *Pivot Table* section is only accessible if *Generate a Pivot-Table* is checked on the *Properties* section.

You specify fields for columns, rows, and cells. Each unique column field value creates a new column, and each unique row field value creates a new row. The intersecting cell contains the cell field value, which may be tabulated (for example, an average). Available fields in *Available Cross-Tab Fields* are the fields added to the *Fields* section.

To Generate a Pivot Table

⊕ On the **Query Designer Properties** checkmark *Generate a Pivot Table (Cross-Tabulation)*.

⊕ Access the **Query Designer** form *Pivot Table* section.

The steps to add a new query or access an existing query are detailed on page 77.

⊕ Highlight the field to display across the top of the results table, then press **Column**.

- Highlight the field to display down the left side of the results table, then press **Row**.
- Highlight the field to be entered in the intersecting cell position, then press **Cell**.
- Specify field analysis type to define the appearance of the cell value:
  - Select *None* to display the highlighted cell value as is.
  - Select *Count* to display the number of cell values.
  - Select *Sum* to tally all the values in each cell and display the total.
  - Select *Avg* to display the average value for each cell.
  - Select *Max* to display the largest value for each cell.
  - Select *Min* to display the smallest value for each cell.
  - Check *Count distinct values only* to only count unique values once.
- Check *Add a subtotal column to each row containing...* to add a column at the end of the table.
  - *Number of cells in row containing data* totals the number of cells with values in each row.
  - *Sum of cell values in a row* tallies the values in each row.
  - *Sum of cell values in a row as a percent of a grand total* displays the value percentage for each row.

Save the changes and the query will be displayed in a pivot table.

Query Designer Period Comparisons

Period comparisons allow comparisons between aggregate (for example, count fields) data for distinct time periods. A date field needs to be added to the *Filter* section with a 'Between' criteria comparison.

To Add Period Comparisons
- Access the **Query Designer** form *Period Comparisons* section.
The steps to add a new query or access an existing query are detailed on page 77.
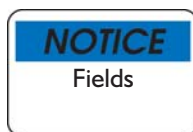
NOTICE Fields	Note that a date field with a 'Between' criteria operator needs to be included in the query. At least one field in the *Group By* section is also recommended.

- Select the number of comparisons to include in the results:
  - '1' compares an initial user-defined start date with a user-defined end date. Aggregate fields that calculate for the first comparison period have a '1' appended to the display name.

- ○ '2' compares a second comparison period with an initial user-defined start date with a user-defined end date. Aggregate fields that calculate for the first comparison period have a '2' appended to the display name.
- ○ '3' compares a third comparison period with an initial user-defined start date with a user-defined end date. Aggregate fields that calculate for the first comparison period have a '3' appended to the display name.
- ✪ Select a *Date period filter variable*.
- ✪ Define comparison period(s):
  - ○ Specify *Move 1st Date To* dynamic date the time period starts on.
  - ○ To start the period at the specified dynamic date, leave *(+/-number)* as a '0'. Optionally start the time period earlier by specifying a negative number or after by specifying a positive number.
  - ○ Specify the *Move 2nd Date To* dynamic date the time period ends on.
  - ○ To end the period at the specified dynamic date, leave *(+/-number)* as a '0'. Optionally start the time period earlier by specifying a negative number or after by specifying a positive number.

NOTICE Comparison Example	A typical example of a comparison period would be to *Move 1st Date To* 'Start of Calendar Year' and *Move 2nd Date To* 'End of Calendar Year'. The second comparison period would have the same values, except '-1' would be specified in both *(+/- number)* fields for the second comparison period.

Save the changes and the query will include calculated results for each comparison period added.

Chapter 8

Creating and Modifying Reports

Reports can be modified or created from scratch. All reports include report design properties, gathered data to display in the report, and the report design layout. Reports included with FH can be directly modified, but we recommend that you modify a copy of the report.

Report Creation Overview

To create a new report, complete the following basic steps:

✛ Specify the report design properties. Create and name the report, then set basic options. You also specify available data within the report design properties. Queries gather FH data for the report. Select an existing query or build a new query.

See page 99 for more information on report design properties.
The procedure for completing queries are included in "Queries" on page 75.

✛ Specify the report design layout. Format the report to include desired fields from the query.

The Report Designer layout is detailed in chapter 9.

An overview of the report creation process is detailed below.

Adding New Reports

Specify the report design properties. Create and name the report, then set basic options. You also specify available data within the report design properties. Queries gather FH data for the report. Select an existing query or build a new query.

To Create a New Report from a Copy of an Existing Report

✛ Click on the **Reports** menu, and select the area you wish to add a new report to. The **Reports** form is displayed with the selected reports category open.

✛ Select the reports category to add a report to. If necessary, press ⊞ next to the report category to display specific report categories.

✛ Highlight the desired report category, then press **New**. You are prompted to copy an existing report or create a new report.

✛ Select **Yes** to the prompt. The **Reports** form is displayed.

✛ Locate the report you wish to make a copy of, then press **Select**. The **Report Designer** form is displayed with the copied report information. The report layout and report queries are copied.
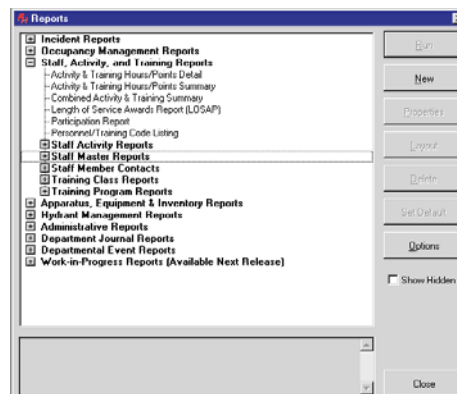
You can quickly locate specific reports using keywords. Press `Ctrl + F`, type a keyword or phrase in the report name, then press **Find** to locate reports matching your text.

More information on specifying **Report Designer** form properties is included on page 99.

- ○ Modify the **Report Designer** form properties as needed. See 'Specify Report Designer Properties' on page 99 for details. Save and close when finished.
- ○ Modify the layout as needed. Accessing and modifying the Report Designer layout is detailed on page 118.

To Create a New Blank Report

- ⊕ Click on the **Reports** menu, and select the area you wish to add a new report to. The **Reports** form is displayed with the selected reports category open.
- ⊕ Select the reports category to add a report to. If necessary, press ➕ next to the report category to display specific report categories.
- ⊕ Highlight the desired report category, then press **New**. You are prompted to copy an existing report or create a new report.
- ⊕ Select **No** to the prompt. The **Report Designer** form is displayed.
- ⊕ Type a name for the report in *Report Name*.
- ⊕ *Report Category* contains the report category highlighted when the new report was initiated. You can modify the selected report category if necessary.
- ⊕ Select "Report" in *Report Type*:
  - ○ Select *Report* for a standard printed report form.
  - ○ Select *Mailing Label* for a printed label (for example, a mailing label).
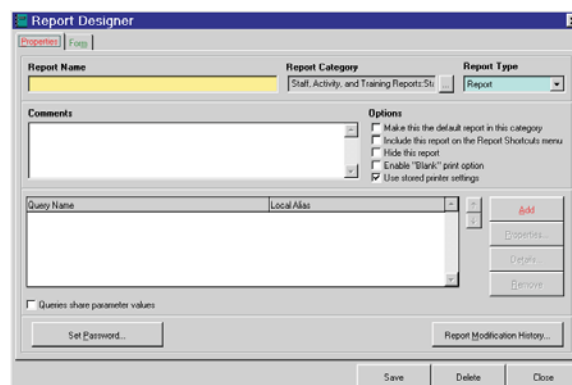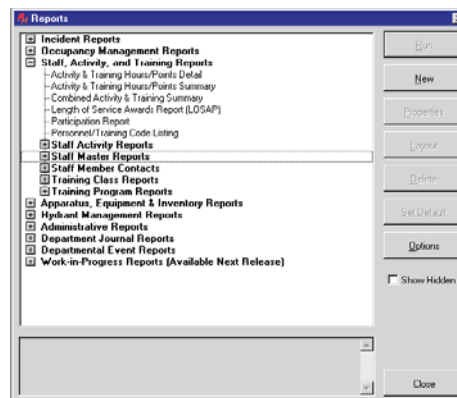
- ✪ Select *Batch Report* for a collection of reports that print all records for a report.
- ✪ Select *Collated Report* for a collection of reports that print a record for each report, resulting in a collated collection of reports for each record. The NFIRS Incident Report is an example of a collated report.

The steps for creating a mailing label are similar. The procedure for creating a batch or collated report is detailed on page 115.

- ✚ Type a descriptive phrase about the report in *Comments*. The message will display in the **Reports** form status bar, and could help users identify the purpose of the report without having to run it.
- ✚ Complete the options area:
  - ✪ Check *Make this the default report in this category* to automatically select the report when **Print...** is pressed from the data entry form for the report category associated with a specific data entry form. When no report in the report category associated with the data entry form is "default", a list of reports to select is displayed when **Print...** is pressed.
  - ✪ Check *Include this report on the Report Shortcuts menu* to add the report to the **Reports** menu **Report Shortcuts** submenu. Reports included in this area are the most frequently accessed reports for your department.
  - ✪ Check *Hide this report* to prevent the report from being included in the **Reports** form listing (unless *Show Hidden Reports* is checked).
  - ✪ Check *Enable "Blank" print option* if you want to be able to print the report without any data. This is especially helpful if you could use the report as a printed data entry form in the field.
  - ✪ Check *Use stored printer settings* to save printer settings for this report. Press **F1** with the **Report Designer** form displayed for more information.

You're ready to add a query. The query gathers the data for display on the report form. Add an existing query, or create a new query.

- ✚ Press **Add**. The **Queries** form is displayed. We recommend that you create a new query. If you know a query that already exists that gathers the necessary data *without modification*, select the query from the list. Otherwise, complete the next step.
  - ✪ Press **New**. A prompt to copy an existing query is displayed.
  - ✪ Select whether to copy an existing query or to create a new one:
    - ✪ To copy an existing query select **Yes** and find a query to copy or press **Ctrl+F** to search for the query using a keyword.
    - ✪ To create a blank query select **No**. The **Query Designer** form is displayed.
  - ✪ Define or edit (if a copy was created) the query.

Creating and defining queries is described in Chapter 7.

Be sure to include all of the information that you will include in the report layout. When you're finished, save and close the new query. The **Queries** form is displayed with your query highlighted.

✪ Press **Select**. The **Report Query** prompt is displayed.

 ✪ Change *Query Alias Name* only if you have a specific reason for doing so.

 ✪ Check *Don't requery if alias name is already in use* to not run query if the alias name assigned to the query is already in use.

 ✪ Check *This is the primary query* if there are to be multiple queries included in the report and the current query is the primary query.

 ✪ Press **OK**. The query is added to the query area of the **Report Designer** form.

Specifying the Report Design Layout Using Quick Form

When you create a new blank report, the report must be laid out using the Report Design Layout after you have defined the report design properties and added a query to gather the data for the report.

The steps create a report start in "Report Creation Overview", page 98.

The **Quick Form** option helps you quickly create custom reports by automatically placing the fields in the query in the Report Designer layout.

Using **Quick Forms** is detailed on the next page.

If you want to skip directly to the report layout without using the **Quick Form** option, press **Save** then **Close** and a blank Report Designer layout is displayed.

Details for adding fields to a blank
Report Designer layout are described in "Access Report Layout" on page 118.

To Generate Quick Form

✪ Access the **Report Designer** form for the new report.

The steps leading up to the steps below start in "To Create a New Blank Report", page 99.
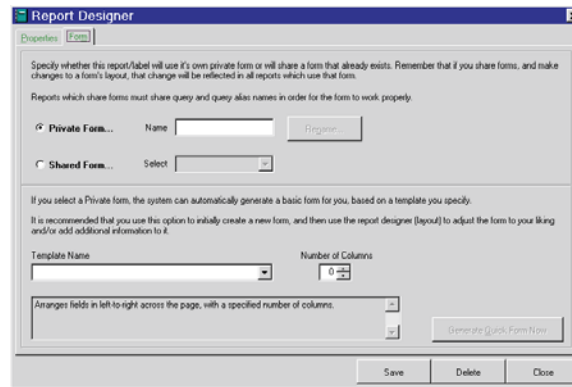
✪ Press *Form* to display the *Form* section.

✪ Select a layout option in
   Template Name:

   ✪ Select *Column* to
      display fields
      horizontally in
      columns. You also need
      to specify the number
      of columns.

   ✪ Select *Form* to display
      fields one below the
      other.

✪ Press **Generate Quick
   Form Now** (not available
   if a *Template Name:* has not been selected) to display the Report
   Designer layout with all fields selected in the query automatically
   inserted.

See "Report Form Objects" on page 124 for more information on available object
types.

Sample Report

The following example walks you through the process of creating a new report, then modifying the report.

The sample report will list staff last name, first name, middle initial, and staff date of birth.

✚ Access the **Reports** menu, **Staff, Activity, and Training Reports** option. The **Reports** form is displayed.

✚ Highlight **Staff Master Reports** then press **New**. You are prompted to start by making a copy.

✚ Press **No**. The **Report Designer** form is displayed.

✚ Type "Staff Birthdays" in the *Report Name* field.

✚ Type "List staff birthdays, sorted by last name" in the *Comments* area.

✚ Press **Add**. The **Queries** form is displayed.

✚ Press **New**. You are prompted to make a copy of an existing query.

✚ Press **No**. The **Query Designer** form is displayed.

✚ Type "Staff Birthdays" in *Query Name*.

✚ Click the *Table* tab to display the *Tables* section of the **Query Designer** form.

✚ Press **STAFF** in *Available Databases & Tables*, then double-click **STF_MAIN** to add the Staff Members table to *Selected Tables.*

✚ Click the *Fields* tab to display the *Fields* section of the **Query Designer** form.

✚ Add the following fields to *Selected Field* (you can highlight the field then press the right arrow, or double click to add the field to the results table):

LAST
FIRST
MIDDLE
DOB
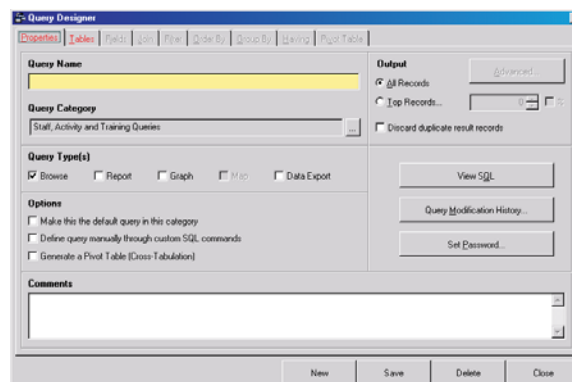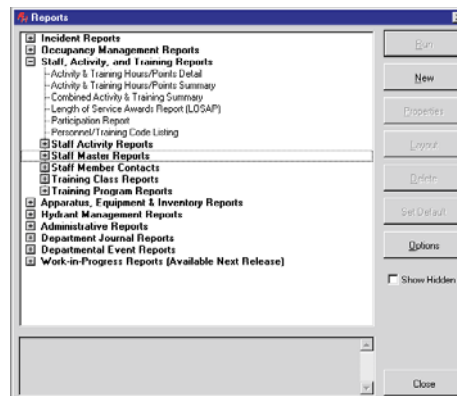
NOTICE

Filters Are Optional

By specifying filter options, you are allowing the user to specify criteria for selecting reports when they run the report. You do not have to specify filter options, but running reports that use queries without any filters will include all records in the queried database; a disadvantage if you have large numbers of records.

✪ Click *Filter* tab to display the *Filter* section of the **Query Designer** form.

✪ Press **Add**, change *Type* to "Ask", place cursor in *Source*, and select "LAST". The **Query "Ask User" Parameters** form is displayed.

✪ Press **OK**.

✪ Press **Add**, change *Type* to "Ask", place cursor in *Source*, and select "STATUS". The **Query "Ask User" Parameters** form is displayed.

✪ Press **OK**. The finished *Filter* section looks like this:

Type	Source	Not	Criteria	Target	?	Case		Logical	Req?
Ask	Stf_main.Last	☐	=	Last Name		☐		And	☐
Ask	Stf_main.Status	☐	=	Status		☐			☐

✪ Click the **Order By** tab to display the *Order By* section of the **Query Designer** form.

✪ Add the following field to *Selected Sorts* (you can highlight the field then press the right arrow, or double click to add the field to the results table):
   STF_MAIN.LAST

✪ Press the **Save** button on the **Query Designer** form, then press **Close.** The **Queries** form is displayed**.**

✪ Select the query you just created, "Staff Birthdays". The **Report Designer** form is displayed.

✪ Press *Form* to display the *Form* section of the **Report Designer** form.

✪ Select "Column" in *Template Name*, type "1" in *Columns*, and press **Generate Quick Form Now**. If you have not saved **Report Designer** form changes, you are prompted to do so.

✪ Press **Yes**. The form is generated and the Report Designer layout for the report form is displayed.

Accessing and modifying the Report Designer layout is detailed on page 118.

Preview the Report

It is always a good idea to preview the report to see how it will look before printing. With the Report Designer layout displayed:

✪ Access the **File** menu, **Print Preview** option. The report is previewed on your screen.

✪ Select the **File** menu, **Close** option to return to the Report Designer layout.

Widen Field in Report Layout

The preview showed some minor problems with the report. The *DOB* field is too narrow, so the date of birth occupies two lines. This change can be made now

✪ Click on *DOB*.

✪ Position the cursor to the right side of the *DOB* box, click and hold the left mouse, and drag your cursor to the right.

✪ Release the left mouse button when it is a little wider (about ½ an inch is sufficient).

✪ Select the **File** menu **Save & Close** option. The **Report** form with the **Staff Birthdays** report highlighted is displayed.

Run Report

To run the report, complete the following steps:

✪ Highlight **Staff Birthdays**, then press **Run**. The **Output Report To** form is displayed.

✪ Press **OK** without changing the output options. The **Query Parameters** form is displayed.

✚ Press **OK**. The report is previewed on the screen.

Report Change Suggestions

The sample report has a number of areas that can be improved.

- Combine the staff name field into a single field and remove unnecessary spaces between first, last, and middle names.
- Add more white space so the printed report can be three-hole punched.
- Change the report to two columns, so more information will fit on each page.
- Allow user more flexibility for entering their own selection criteria as they are running the report.
- Add the staff member's age to the report.

See the next page for the steps to modify a sample report.

Notice the DOB format problem; we'll fix this in the next section.

Modify Sample Report

The report we have just created is listed at the bottom of the reports for the **Staff, Activity and Training Reports** category **Staff Master Reports** subcategory.

Change Report List Sequence

You can arrange report names to appear in any order in the report list. Access the **Reports** menu, then select the report category you wish to modify.

For the report we have just created, select **Staff, Activity and Training Reports** option. The **Reports** form is displayed.

✪ Highlight **Staff Master Reports** then press **Options...** A list of options is displayed.

✪ Press **Change List Sequence...** The **Report Sequence** form is displayed.

✪ Highlight the **Staff Birthdays** report (it is listed at the very bottom of this form).

✪ Press and hold the left mouse button down, then drag the report to the desired location in the list.

✪ Press **OK**, and the report list sequence is changed.

Now, you're ready to modify the report.
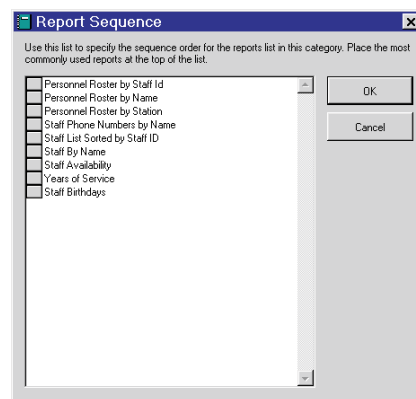
Modify the Sample Report

The **Reports** form is displayed, with the *Staff Birthdays* report listed.
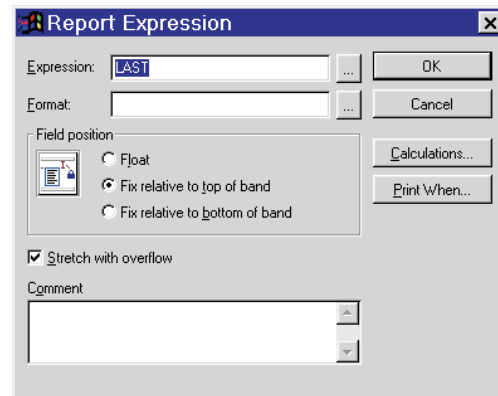
✪ Highlight the *Staff Birthdays* report.

✪ Press **Layout...** The Report Designer layout is displayed.

See page 118 for more details about the Report Designer layout area.

Combine First, Middle, and Last Name Fields in Sample Report

We will write an expression that combines the last, first, and middle names of the staff member.
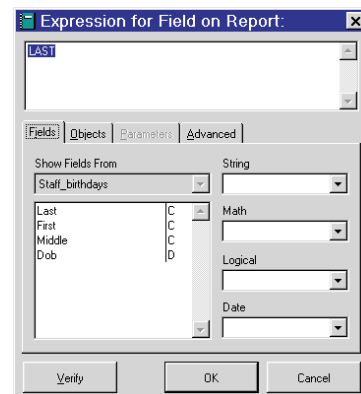
1. Double-click the *Last Name* field listed in the *Detail* band. The **Report Expression** form is displayed.

2. Press the **Expression** lookup button. The **Expression for Field on Report** form is displayed.

3. Delete the expression entered in the *Expression for Field on Report* box.

4. In the *Expression for Field on Report* box, type "**trim(**".

> **NOTICE**
> **Trim** Function
>
> **Trim** removes extra spaces from a field entered in the expression.

5. Double-click the *Last* field listed in the *Field:* area, then type "**)**".

6. Type "**+', '+**".

> **NOTICE**
> Expression Syntax
>
> Typing a plus sign (+) in the *Expression for Field on Report* box indicates that there is additional information. Anything between the quotation marks will be included in the report as it is typed in. There is a comma and a space between the quotation marks, so a comma and a space will be added to the end of the last name.

7. Type "**trim(**" then double-click on the *first* field, then type "**)**".

8. Type "**+' '+**".

9. Type "**trim(**" then double-click on the *MI* field, then type "**)**". The entire expression is displayed below.

10. Press **Verify**. If there are any mistakes or errors in the expression, an error message is displayed.

11. Press **OK** and the **Expression Builder** form is closed.

12. Press **OK** and the **Report Expression** form is closed, and the Report Designer layout is displayed (a portion of the Report Designer layout is displayed below).
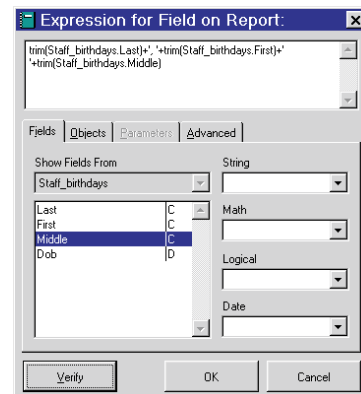
Remove Fields in Sample Report

Now that we have added a single field that includes the last name, first name, and middle initial. The first name and middle initial fields included on the report are no longer necessary.
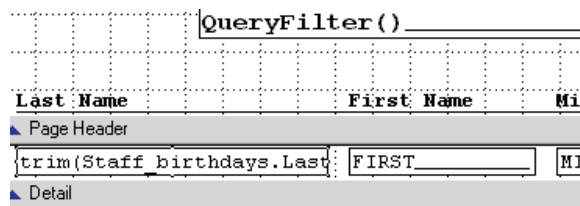
1. Select the [▶] tool.

2. Position the cursor on the first name field and press the **Delete** keyboard key.

3. Position the cursor on the first name label and press the **Delete** keyboard key.

4. Position the cursor on the middle initial field and press the **Delete** keyboard key.

5. Position the cursor on the middle initial label and press the **Delete** keyboard key.

Tip Hold down the shift key to select multiple objects at one time.

Rename Labels in Sample Report

The label "Last Name" is no longer accurate since this field now includes the last name, first name, and middle initial.

1. Select the [A] tool.

2. Move the cursor to the "Last Name" label, and double-click on the *Last Name* field label. The entire label is highlighted.

3. Type "Staff Name".

4. Select the $\boxed{A}$ tool.

5. Move the cursor to the DOB label, and double-click on the *DOB* field label. The entire label will be highlighted.

6. Type "Birthday".

Add Columns and Margin

Now that we have created a single field for the name, we are ready to make the report two columns, and add space in the margins. Note that the following steps are made while the Report Designer layout for the report is displayed.

Move Fields Together

Since we have removed several fields, there is unused space in the middle of the report.

1. Select the $\boxed{\nwarrow}$ tool.

2. Move the cursor to the center of the field you want to move, press and hold down the left mouse button, drag the cursor to the new location, then release the left mouse button.

NOTICE
Select Multiple Objects

Select multiple fields by pressing the **Shift** key and selecting multiple objects.

Add Columns and Margin

3. From the **File** menu, select the **Page Setup...** option. The **Page Setup** form is displayed.

4. Type 2 in the **Column** area *Number* field.

5. Type .75 in the *Left Margin:* field. This inserts space in the left column, so you can 3-hole punch the report without putting a hole in data listed in the report.

6. Press **OK** and the **Page Setup** form is closed. The Report Designer layout is displayed and *Column Header* and *Column Footer* bands are added to the layout.
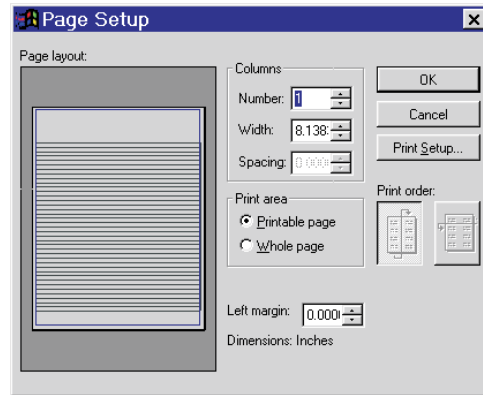
Add User Options

When the report is run, you can give the user additional options for criteria for determining what records to include in the report, or in this example, make it possible for the user to search for specific values in any field added to the table added to the query (**STF_MAIN** in this example).

1. From the **File** menu, **Report Properties...** option. The **Report Designer form is displayed.**

2. Access the **Query** area, then press **Properties...** The **Query in Use** form is displayed. Press **OK** and the **Query Designer** form is displayed.

NOTICE
Query Already In Use

The **Query in Use** form is displayed any time you attempt to open a query that is used by reports, graphs, or browse lists. The function of the form is to inform you about reports, graphs, and/or browse lists that use the query, since modifying a query could invalidate the results.

3. Press **Filter** to display the *Filter* section of the **Query Designer** form.

4. Check *Allow addition of "filter" selections from available output fields*.

When the report is run, the user can search for specific records based on values in any field available in tables added to the *Table* section of the **Query Designer** form.

5. Press **Save** then **Close** (or `Ctrl + W`) to return to the **Report Designer** form.

6. Press **Save** then **Close** (or `Ctrl + W`) to return to the Report Designer layout.

The next time the report is run, the user has more flexibility in selecting specific records.

Add Age Field

The last thing we need to do to complete the report is to add a field that will list the staff member's age.

Add Age Field

1. Click on the ⓐ tool. Move the cursor where the field starts, hold down the left mouse button, and move the cursor to where the field ends. The **Report Expression** form is displayed.

2. Press ⋯ to the right of *Expression*. The **Expression For Field on Report** form is displayed.

3. Press *Advanced* to display the *Advanced* section. Available functions that format data are displayed in *Advanced Functions*.

4. Double-click "Age". The **Age** function is inserted into the main *Expression for Field on Report* field, with the first parameter highlighted.
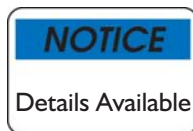
Press **Details...** for more information on each function parameter. For this example, we will only use the first parameter.

5. Press *Fields* to display the *Fields* section.

6. Double-click *DOB*. *DOB* is inserted into the **Age()** function.

7. Remove the optional parameters from the **Age()** function. The finished **Age()** function should look like:
   Age(Staff_birthdays.Dob)

8. Press **OK** to close the **Expression for Field on Report**, then **OK** again to close the **Report Expression** form.

Add Label for Count Field

9. Select the $\boxed{A}$ tool and move the cursor above the *Age* field.

10. Type "Age".

11. Access the **File** menu **Save and Close** option when you are satisfied with the appearance of the report.

Congratulations. You have created a custom report from scratch.

Create Batch/Collated Report

First, complete the steps listed in "Report Creation Overview", pages 98 to 99.

NOTICE Multiple Reports	Using Batch or Collated Reports, you can associate a number of reports together. You can include reports from a variety of areas, so each individual report can be simpler (rather than a single report that includes all this information in a single report).

1. Select *Batch Report* or *Collated Report*:
   - *Batch Report* is a collection of reports that print all records for a report. Each added report includes multiple records.
   - *Collated Report* is a collection of reports that each print a single record, resulting in a collated collection of reports for a single record. The NFIRS Incident Report is an example of a collated report.

2. Add the reports you wish to include in the batch or collated report.

3. Press **Save** then **Close** (or press **Ctrl + W**) and run the report.

The procedure for completing queries is included in "Queries" on page 756.

Report Designer Layout Reference

Each report has a report layout that specifies how information will be displayed when the report is displayed, printed, or saved to one of the supported file formats.

When you first create a new report or modify an existing report, the Report Designer layout is displayed. Below is an example of the Report Designer layout.
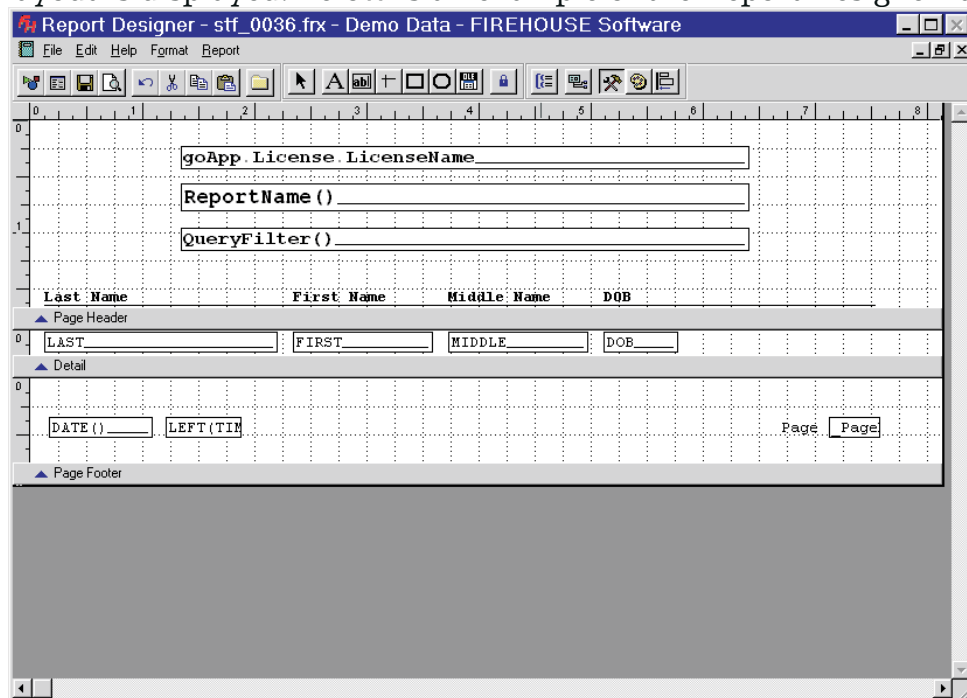
NOTICE
Visible Work Area

Expand the visible Report Designer work area by pressing the maximize button, or move the arrow to the lower right-hand corner of the form and drag to enlarge the visible area.

Access Report Layout

1. Click on the **Reports** menu, and select the desired report heading. The **Reports** form is displayed with the selected reports category open.

2. Select the reports category containing the report. If necessary, press ☐+ next to the report category to display specific report categories.

With the report highlighted, press **Layout**. The Report Designer layout for the selected report is displayed.

Report Bands

FH reports are banded. Each band serves a specific purpose. Each available report band is described below.

The callouts in the figure read:

- **Report Designer Toolbar ↓**
- Optional. Place title or information that will be printed one time at the front of the report.
- Place fixed information like report title. Automatically completed when you use the Quick Reports option, included at the top of each report page.
- Optional. Place group title and label information.
- Place data and descriptive information in the *Detail* band.
- Optional. Place group totals and label information.
- Place fixed information like dates and report pages. Automatically completed when you use the Quick Reports option, included at the bottom of each report page.
- Optional. Place title or information that will be printed one time at the end of the report.
- Scroll Bar. You may need to use the scroll bars to see all objects on the form.

Title Band

The *Title* band is an optional band that contains information that is inserted in front of the main report, when included. The *Title* band prints once for each report.

Tip Use the *Title* band to create a cover page for a report.

Add Title

Complete the following steps to add a *Title* band:

1. Select the **Report** menu, **Title/Summary…** option. The **Title/Summary** dialog is displayed.

2. Check **Title Band**. If you want the *Title* band to be displayed on its own page, check **New Page**.

3. Press **OK**, and a *Title* band is added to your report.

Page Header Band

Information added to the *Page Header* band is displayed at the top of each page of the main report (the *Title* band is displayed above the first *Page Header* when included). A *Page Header* can contain fixed data like a report title or a column header, or variable data like query parameters, and other information.

Column Header Band

When more than one column is selected for the form, data in the *Column Header* band is displayed at the top of each column.

Add Columns

You can specify multiple columns from the **Report Designer** form, *Form* section, or with the Report Designer layout displayed, select the **File** menu, **Page Setup…** option.

You can specify as many columns as you want, but if the resulting columns are too narrow, all the fields in the report will not fit.

Group Header Band

After designing the basic layout, you may decide that grouping the records by certain fields or other criteria would make the report easier to read.

Grouping allows you to separate groups of records visually and display introductory and summary data for each group. The group break is based on a grouping expression. This expression is usually based on

one or more table fields but it can be as complex as you like. When you have groups, your report layout has *Group Header* and *Group Footer* bands, to which you can then add controls. Typically, *Group Header* bands include the field used for the group. You may add lines, rectangles, rounded rectangles, or any label you want to appear before the first record in a group. *Group Footer* bands often contain group totals and other summary information for the group.

You can also specify other options for the groups:

- Printing text in headers and footers to identify specific groups
- Printing each group on a new page
- Resetting page numbers when groups are printed on a new page

The report layout does not actually sort and order your data. The sort order defined in the **Query Designer** form dictates the record order.

Add Group

Complete the following steps to add a group. You can add as many groups as necessary, although multiple groups increase the complexity of the report.

✪ Select the **Report** menu, **Data Grouping...** option. The **Data Grouping** form is displayed.

✪ Press ⊡ to add a new grouping or edit an existing grouping, **Insert** to place a new grouping, or **Delete** to remove an existing data grouping.

Detail Band

Details allow multiple items of specific information to be displayed. Usually, data in the *Detail* band contains field information from one or more than one table. The *Detail* band adopts the size of the column.

Group Footer Band

Display calculated fields that will contain descriptive information about data contained in the related group.

Column Footer Band

When more than one column is selected for the form, data in the *Column Footer* band is displayed at the bottom of each column. *Column Footer* bands typically display summaries and/or subtotals of the information contained in the column.

Page Footer Band
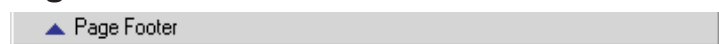
Displayed at the bottom of each page of the main report, when included. The *Page Footer* usually contains a combination of fixed and variable information. *Page Footer* bands are useful for displaying summaries and/or subtotals for data included on the page.

Summary Band

The *Summary* band is optional. Use the *Summary* band to create totals for the report, or text that summarizes the contents of the report. Like the *Title* band, the *Summary* band is printed once per report (the *Summary* is included at the end).

Add Summary

The steps for adding a *Summary* band are listed below.

✚ Choose the **Report** menu, **Title/Summary** option. The **Title/Summary** form is displayed.

✚ Check *Summary Band* to add a *Summary* band to your report. Check **New Page** below the *Summary Band* to put the *Summary* band on its own page.

✚ Press **OK** to add the selected bands.

Changing Band Size

Bands can be resized to fit information contained in the band. The area for each band is defined by the amount of white space above each band. Each band has a blue triangle button to the left of the band, known as the move button. To resize a band, drag the move button up or down to the desired size. If no white space is displayed above the band, the band is not printed.

Double-click the move button to display a dialog for setting the height of the band in inches or centimeters. Check *Constant Band Height* to force the band to maintain a constant height.

NOTICE
Constant Height Bands

The *Page Footer*, *Title*, and *Summary* bands always have *Constant Band Height* checked by default. Pay special attention to the type of information you are adding to these fields. Expandable data can cause overlapping text on a printed report.

Report Form Objects

Custom reports are created by adding and modifying objects to the Report Designer layout.

Control Types

The **Report Controls** toolbar contains buttons for adding objects to the form. The toolbar is displayed to the left of the Report Designer layout or displayed below the main menu.

Selection Tool. Used to select objects on the report form layout form.

Label Objects. Typically used to label specific data or columns. Text objects display fixed information you specify.

Field Objects. Display data from a field in the results table created by the query, or from a user-defined function.

Graphic Objects. Lines, rectangles, round rectangles, and pictures available for reports. Graphic objects are optional and typically will highlight certain information or give the report a more professional appearance.

Picture/ActiveX Bound Control. Add any recognized graphic file, including OLE objects attached to your records.

Button Lock. Press to lock the next selected tool. For example, when adding multiple labels to a form, button lock allows you to add multiple labels without having to select the label tool after adding each label.

Add Field Objects
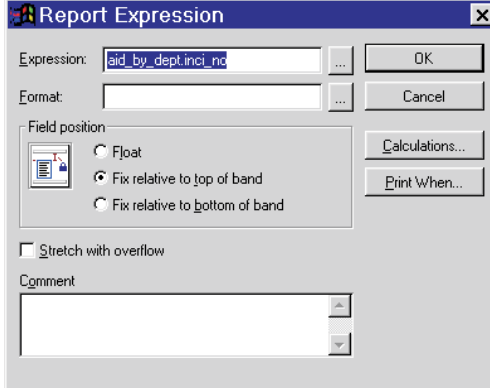
In Report Designer layout:

➕ Add a field by pressing **abl** from the toolbar.

➕ Move the cursor where you want the field to start.

➕ Press and hold down the left mouse button, move the cursor to where you want the field to end and release. The **Report Expression** form is displayed.

To Set Field Expression

➕ Press **...** and the **Expression For Field on Report:** form is displayed.

➕ Enter the expression for the field. Fields from the results table are listed in the *Fields:* box in the lower left portion of the form. To add a field, highlight the field in the *Fields:* box, then double-click the field name. The field name, preceded by the variable name assigned to the query, is added to the *Expression for Field on Report:* box.

NOTICE
Other Options

Use other options from this form if you are familiar with FoxPro and advanced FIREHOUSE Software variables and functions. Advanced functions are included in the *Advanced* section. More information is available in the help file. Press **F1** in FH to display.

➕ After completing the expression, press **OK**. The **Report Expression** form is displayed again.

➕ Set format options, then press **OK**.

Add Label Objects

You will generally add a label for each field. In Report Designer layout:

➕ Press **A** from the toolbar.

➕ Move the cursor to the area you want the text to be included in.

➕ Press the left mouse button, and type the text you want to display.

Add Graphic Objects

There are a variety of different types of graphic objects that can be added to report forms. In Report Designer layout:

See page 118 for the steps to access the Report Designer layout.

- To add lines:
  - Press ⊞ from the toolbar.
  - Move the cursor to the area you want the line to start.
  - Press and hold down the left mouse button, move the cursor to where you want the line to end then release.
- To add rectangles:
  - Add a rectangle by pressing ▢ from the toolbar.
  - Move the cursor to the area you want the rectangle to start.
  - Press and hold down left mouse button, move the cursor to where you want the rectangle to end then release.
- To add rounded rectangles:
  - Add a rounded rectangle by pressing ▢ from the toolbar.
  - Move the cursor to where you want the rounded rectangle to begin.
  - Press and hold down the left mouse button, and drag the cursor to where you want the rounded rectangle to end then release.
- To add pictures:
  - Add a picture by pressing 🖼 from the toolbar.
  - Move the cursor to where you want the picture to start.
  - Press and hold down the left mouse button, move the cursor to where you want the picture to end then release. A dialog for selecting the picture file is displayed.

Moving Fields, Labels and Graphics

There are a number of ways to move and align objects around on the Report Designer layout.

See page 118 for the steps to access the Report Designer layout.

Move Objects Manually

You can have objects automatically snap to a grid, or you can disable this feature. This feature is accessed from the Report Designer layout, **Format** menu, **Snap to Grid...** option.

- Select the ↖ tool from the toolbar.
- Move your cursor to the object on the report form layout form.

Tip Double-click on the band separator bar to highlight all objects in the band.

✪ Press and hold down your left mouse button and drag the object (or objects) to the desired location.

✪ Double click the object to see options for the object.

Aligning Controls

You can align controls with each other using the **Layout** toolbar.

To align controls with each other

✪ Select the controls you want to align. Select multiple objects by holding down the **Shift** key and selecting additional objects.

✪ Select the button to align the objects.

  ✪ Press ▣ to align selected controls on the leftmost edge. Enabled when you select more than one control.

  ✪ Press ▣ to align selected controls on the rightmost edge. Enabled when you select more than one control.

  ✪ Press ▣ to align selected controls on the topmost edge. Enabled when you select more than one control.

  ✪ Press ▣ to align selected controls on the bottommost edge. Enabled when you select more than one control.

  ✪ Press ▣ to align the selected controls' centers on a vertical axis. Enabled when you select more than one control.

  ✪ Press ▣ to align the selected controls' centers on a horizontal axis. Enabled when you select more than one control.
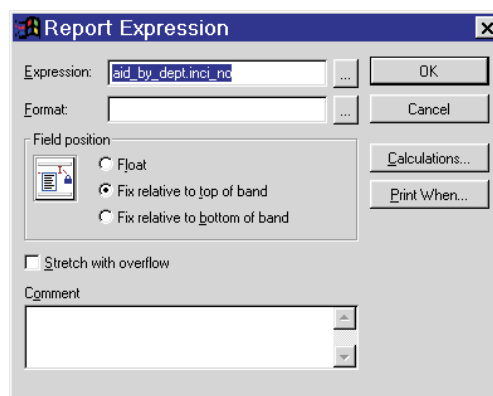
All selected controls will be aligned. If the results are not as expected, access the **Edit** menu, **Undo** option.

Set Field Options

To set field options in Report Designer layout, double-click the field object with the selection tool. The **Report Expression** form is displayed.

✪ Press *Expression* ⋯ to add an expression that will be displayed in the report. See page 128 for information on **Expression for Field** form.

✪ Press *Format* ⋯ to display the **Format** dialog so you can specify formatting options. See page 131 for information on the **Format** form.

- ✪ Press **Calculations...** to display the **Calculate Field** form. When checked, a calculation has been set for the chosen field.
- ✪ Press **Print When...** to display the **Print When** form and enter criteria to determine when the field is displayed in the report. See page 132 for information on the **Print When** form.
- ✪ Set field position:
  - ✪ Select *Float* to maintain the absolute position of the field.
  - ✪ Select *Fix Relative to top of band* to maintain the position of the field relative to the top of the band. This selection allows stretching of the field to accommodate data that extends beyond one line.
  - ✪ Select *Fix Relative to bottom of band* to maintain the position of the field relative to the bottom of the band.
- ✪ Check *Stretch with overflow* to allow the fields to expand when there is more information than fits in the box added to the Report Designer layout.
- ✪ Type reference information in *Comment*. Comments are for report design use only and do not affect the output.

Build an Expression for Field on Report Form

To build an expression, press ⬚ on the **Report Expression** form. The **Expression for Field on Report:** form is displayed.

Additional information on expressions and functions used in expressions is available in the FH Online Help guide. Press **F1** with the form displayed.

Add Fields

You can type in the expression in the *Expression* field (not labeled) if you are familiar with the functions and fields names, or select items to build an expression.

- Select function (if needed in expression):
  - *String* lists available character functions.
  - *Math* lists available functions for performing calculations in an expression.
  - *Logical* lists available functions for adding conditions to an expression.
  - *Date* lists available functions for inserting dates in an expression.
- Select the data source containing the field to add to the expression in *Show Fields From*. When only one query is available for a report, this field cannot be modified. The *Fields* list below *Show fields from* is from the source selected here.
- If you have added functions, you should highlight the part of the expression that will use the field before adding the field.
- Add the field listed in *Fields* to the expression by double-clicking on the field listing, or highlighting the field listing and pressing **Enter**.

Your selections are inserted in the *Expression* field. Generally, expressions are completed from the *Fields* section.

If you are done with the expression, see 'Finish Expression for Field' on page 131.
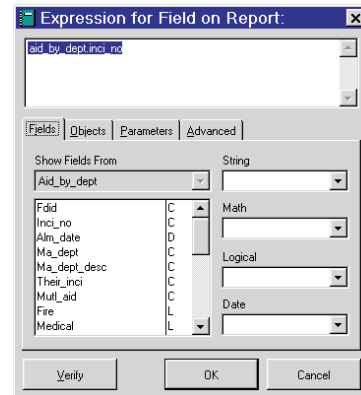
Add Objects

The *Object* section displays FH variables that can be inserted into the report.

✪ Change *Show Property Values From* to display available FH variables. Double-click on the variable to add to the expression.

✪ Add *String, Math, Logical, Date* functions as previously described in the *Fields* section.

Add Parameters

The *Parameters* section displays filter variables that can be inserted into the report. This section is only available when the *Filter* section of the **Query Designer** form for the query includes elements.

✪ Change *Show Query Parameter Values* to display available query parameter values. Double-click on the value to add to the expression.

✪ Add *String, Math, Logical, Date* functions as previously described in the *Fields* section.

If you are done with the expression, see 'Finish Expression for Field' on page 131.
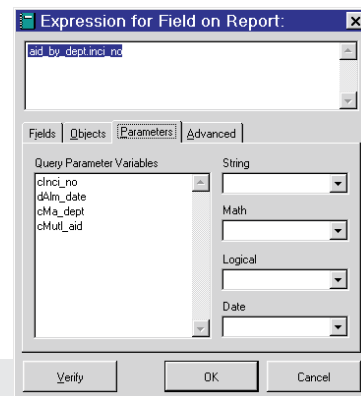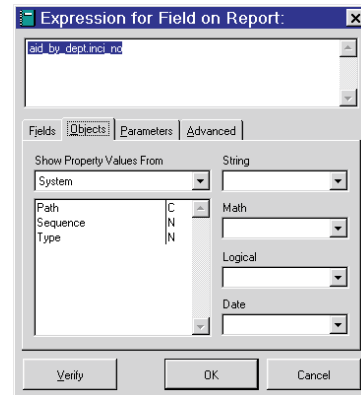
Add Advanced Functions

Lists advanced FH functions. The advanced functions modify FH values.

✪ You can browse the list of advanced functions by highlighting them and reading the description, or view details about the function by pressing **Details...**

If you are done with the expression, see 'Finish Expression for Field' on page 131.
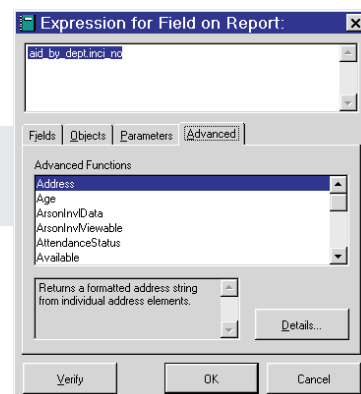
Finish Expression

✪ Press **Verify** to see whether the expression displayed in the *Expression* field (not labeled on form) is valid. The message "Expression appears to be valid" appears in the status bar if the expression is OK; if not, an error message is displayed.

✪ Press **OK** to save created expression and returns to the open **Report Expression** form.

✪ Press **Cancel** to exit dialog without taking action.

Format Form

The **Format** field form allows you to specify how an expression is formatted on the report form. Available format options vary depending on the type of data included in the expression.

See "Set Field Options" on page 127 for the steps to access this form.

The *Format* field displays the format code selected via the check boxes. You can type the format codes manually or modify them using this form. The appropriate data type is automatically selected. Change only if necessary.
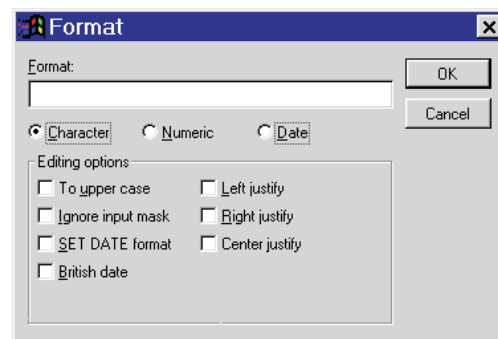
Set Character Data Formatting Options
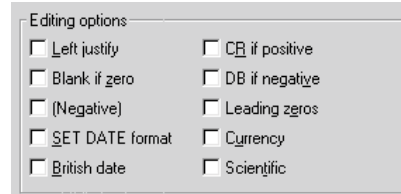
With the **Format** form displayed and *Character* selected:

✪ Check *To upper case* to convert all characters to uppercase.

✪ Check *Ignore input mask* to include non-format characters in the format expression in the form or report.

✪ Check *SET DATE format* to display data as date using current system date format.

✪ Check *British date* to display data as European (BRITISH) date.

✪ Check *Left justify* to print data flush left in the field.

✪ Check *Right justify* to print data flush right in the field.

✪ Check *Center justify* to center data in the field.

✪ Press **OK** to finish.

Set Numeric Data Formatting Options

With the **Format** form displayed and *Numeric* selected:

✪ Check *Left Justify* to start numeric data for field at leftmost position in the field.

✪ Check *Blank if zero* to blank field if output is 0.

✪ Check *(Negative)*to place negative numbers in parentheses.

✪ Check *SET DATE format* to display data as date using current system date format.

✪ Check *British date* to display data as European (BRITISH) date.

✪ Check *CR if positive* to append "CR" (credit) after number if number is positive.

✪ Check *DB if negative* to append "DB" (debit) after number if number is negative.

✪ Check *Leading zeros* to prints all leading zeros.

✪ Check *Currency* to display currency format.

✪ Check *Scientific* to display in scientific notation.

✪ Press **OK** to finish.
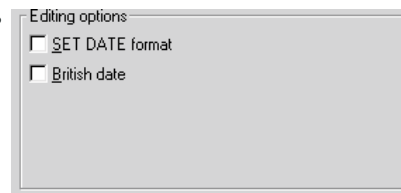
Set Date Data Formatting Options

With the **Format** form displayed and *Date* selected:

✪ Check *SET DATE format to display data as date using current system date format.*

✪ Check *British date* to display data as European (BRITISH) date.

✪ Press **OK** to finish.

Print When Form

The **Print When** form allows you to determine the conditions under which items in your report or label are printed.

See "Set Field Options" on page 127 for the steps to access this form.

- ✪ Select whether to print repeated values or not:
    - ✪ Select **Yes** to have the object print every time it's band is printed in your report or label.
    - ✪ Select **No** to have the object print only in certain situations, which you can establish in other areas of the dialog.
- ✪ Check *In First Whole Band of New Page/Column* to print the object in the first band of a new page or column that isn't an overflow from a previous page or column.
- ✪ Check *When This Group Changes* and choose a group from the form to print the object when the chosen group changes. Only available if groups have been added to the Report Designer layout.
- ✪ Check *When Detail Overflows to New Page/Column* to print the object when the *Detail* band overflows to a new page or a new column.
- ✪ Check *Remove Line If Blank* to not add space to the form for the line if it is empty.
- ✪ Check *Print Only When Expression is True…* and type an expression for determining when the object will be printed.
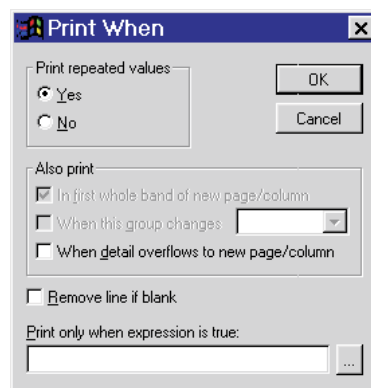
Report Picture Form

Double click on a picture or select [OLE] to display the **Report Picture** form. The **Report Picture** form allows you to include BMP pictures or icon files.

- ✪ Select *File* to include a picture in your report, press [...] to open the **Open** dialog so you can select the desired graphic file, or you can type the name and path of the file in *File…*
- ✪ Select *Field* to select a field from the results table containing the attached OLE object.
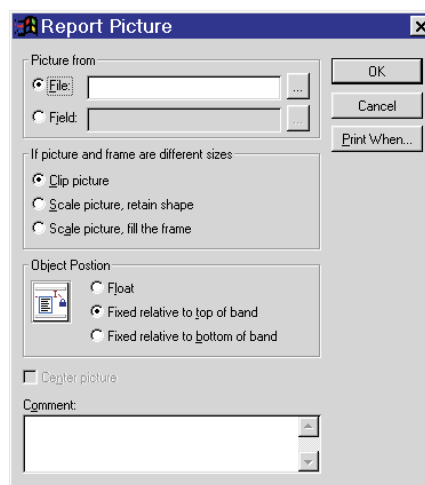
- Select *Clip Picture* to retain the picture's original dimensions. If the picture is bigger than the frame created in the **Report Layout** window, *Clip Picture* shows a section of the original picture in the frame. The picture is anchored at the top and at the left of the frame. The lower right portion of the picture that extends beyond the frame is not visible in the report.

- Select *Scale picture, retain shape* to display the whole picture, filling as much of the frame sized in the window as possible while retaining the relative proportions of the picture.

- Check *Scale picture, fill the frame* to display the whole picture, completely filling the frame that you size in the Report Designer layout. The picture will take on the proportions of the frame. For example, if you make the frame tall and narrow, the picture will be distorted vertically and horizontally to fit the frame (that is, it will take the shape of the frame).

- Select *Float* to position picture in absolute position regardless of movement in the Report Designer layout.

- Select *Fixed relative to top of band* to position the picture relative to the position you give it in the Report Designer layout and maintain that position relative to the top of the band.

- Select *Fixed relative to bottom of band* to position the picture relative to the position you give it in the Report Designer layout and maintain that position relative to the bottom of the band.

- Add **Comment** for your reference and do not appear in the printed report or label.

- Press **Print When...** to open the **Print When** form.

See page 132 for more information on the **Print When...** form.

- Press **OK** to save changes
- Press **Cancel** to exit without saving.

Chapter 10

Auto Generated Narratives

Auto-generated narratives build a comprehensive description of an incident based on user-defined text and selected values from incident-related records. FH includes some auto-generate narrative templates that are ready to use, or you can build your own. Auto-generated narratives are available for NFIRS, EMS, and Dispatch/Remote Station incident reports.

Setting Up Auto-Narratives

Auto-Narratives are not available from the incident records by default. Templates that grab information from the fire or EMS record and insert them into the narrative are included. You can use a provided template or create a new template from scratch.

You can generate an incident narrative that includes information from other parts of the incident record using 'Auto Generate' narratives. Auto Generate narratives are available for NFIRS, EMS, and Dispatch/Remote incident records. The information included in the narrative is based on the narrative generation template used. The templates define the data elements from the record that will be used to generate a narrative. FH supplies a template for each.

Enabling Auto Narratives

Auto-Narratives are not available from the incident records by default.

To Enable Auto-Narratives
- Select the **Administration** menu **Administrative Options** option.
- Select the *Incident* tab.
- Enable for each individual area desired:
    - For NFIRS incident auto-narratives, select the *NFIRS* tab, then check *Provide the option to auto-generate the NFIRS incident narrative*.
    - For EMS incident and EMS patient auto-narratives, select the *EMS/Search & Rescue* tab, then check *Provide the option to auto-generate the EMS scene/patient narrative*.
    - For Dispatch/Remote Station Report auto-narratives, select the *Dispatch/Remote Station Report* tab, then check the *Provide the option to auto-generate the Dispatch/Station narrative*
- Press **OK**.

Creating New Templates

You can modify the auto-narrative templates by creating new template or adding additional elements to the templates. A template can insert information directly from fields, custom expressions, conditional blocks, or from printed report forms.

- Custom expressions insert a block of text or fields into the template using the expression builder.
- Conditional blocks insert a block of text or fields into the template that are displayed only if a given condition is true.
- Reports inserts the results of any printed report form into the template at the position.

To Create a New Template

✛ Select the **Administration** menu **Administrative Options** option.

✛ Select the **Incident** tab *NFIRS* tab.

✛ Press **Auto-Narrative Templates**. The **Auto-Generate Narrative Templates** form is displayed.

✛ Select the auto-narrative area in the *Select Report Type* field.

✛ Press **New**. You are prompted to copy an existing template. Press **Yes** and select a template to copy if available, otherwise press **No**. The **Auto Narrative Properties** form is displayed.

✛ Type a *Template name*.

✛ Add information as needed.

See 'To Add Field Values to Auto-Narrative' on page 137

✛ Press **Save** when finished.

To Add Field Value to Auto-Narrative

✛ Select the **Administration** menu **Administrative Options** option.

✛ Select the **Incident** tab *NFIRS* tab.

✛ Press **Auto-Narrative Templates**. The **Auto-Generate Narrative Templates** form is displayed.

✛ Select the auto-narrative area in the *Select Report Type* field.

✛ Highlight the *Auto-Generate Narrative Template* to modify then press *Properties*.

✛ Highlight the field to add in the *Available Data Elements* field.

✛ Press ⟩ . All character type fields will be automatically 'trimmed' for leading and trailing spaces.

✛ Press **Save**.

To Add Custom Expression to Auto-Narrative

✛ Select the **Administration** menu **Administrative Options** option.

✛ Select the **Incident** tab *NFIRS* tab.

✛ Press **Auto-Narrative Templates**. The **Auto-Generate Narrative Templates** form is displayed.

✛ Select the auto-narrative area in the *Select Report Type* field.

✛ Highlight the *Auto-Generate Narrative Template* to modify and press *Properties*.

✪ Press **Advanced Expression**. The **Auto Narrative Setup** form is displayed to allow you to enter custom expressions into the template.

✪ Add expression, then press **OK**.

See 'To Set Field Expression' on page 125 for more information on using expressions.

✪ Press **Save**.

To Add Conditional Block to Auto-Narrative

✪ Select the **Administration** menu **Administrative Options** option.

✪ Select the **Incident** tab *NFIRS* tab.

✪ Press **Auto-Narrative Templates**. The **Auto-Generate Narrative Templates** form is displayed.

✪ Select the auto-narrative area in the *Select Report Type* field. Leave as "NFIRS Incident Report" for this example.

✪ Highlight the *Auto-Generate Narrative Template* to modify and press *Properties*. The **Auto Narrative Properties** form is displayed.

✪ Press **Insert Conditional Block**. The expression builder form displayed.

✪ Create an expression that will evaluate as true or false. For example, double click 'Station' then position your cursor after `Incidentrecord.Station` and type **="1-0"**. The expression: `Incidentrecord.Station="1-0"` evaluates as true when the incident report *Station* value is equal to "1-0".

✪ Press **OK**. The conditional block with your expression is added to the *Narrative Template* field:
`#IF Incidentrecord.Station="1-0"`
`<place your text here..>`
`#ELSE`
`<place alternative text here..(remove if not used)>`
`#ENDIF`

  ✪ Type the text or expression you wish to display if `Incidentrecord.Station="1-0"` evaluates as true in place of `<place your text here…>`.

   • If you replace `<place your text here..>` with an expression you must precede the expression with two left arrows (<<) and end the expression with two right arrows (>>). This automatically happens if you highlight `<place your text here..>` then press **Advanced Expression** and use the **Auto Narrative Properties** form to build the expression.

   • If you replace `<place your text here..>` with text, type the text without the "<<" or ">>" characters.

  ✪ Type the text or expression you wish to display if `Incidentrecord.Station="1-0"` evaluates as false in place of `<Place alternative text here..(remove if not used)>`.

- If alternative text is not used when **Incidentrecord.Station="1-0"** is false, the **#ELSE** statement and the **<place alternative text here..(remove if not used)>** lines should be deleted from the *Narrative Template* field.
- If you replace **<place alternative text here..(remove if not used)>** with an expression you must precede the expression with two left arrows (<<) and end the expression with two right arrows (>>). This automatically happens if you highlight **<place alternative text here..(remove if not used)>** then press **Advanced Expression** and use the **Auto Narrative Properties** form to build the expression, or select the field from *Available Data Elements*.
- If you replace **<place alternative text here..(remove if not used)>** with text, type the text without the "<<" or ">>" characters.

> **NOTICE**
> No Nesting
>
> Conditional statements may NOT be nested. You can not place one #IF statement inside another (the template builder will allow you to do it, but it will not process as expected).

✚ Press **Save**.

To Insert Report in Auto-Narrative

✚ Select the **Administration** menu **Administrative Options** option.

✚ Select the **Incident** tab *NFIRS* tab.

✚ Press **Auto-Narrative Templates**. The **Auto-Generate Narrative Templates** form is displayed.

✚ Select the auto-narrative area in the *Select Report Type* field.

✚ Highlight the *Auto-Generate Narrative Template* to modify and press *Properties*.

✚ Press **Insert Report**.

✚ The **Select a Report** form is displayed.

✚ Highlight the report to add, then press **Select**. The insert report statement is added to the *Narrative Template* field. This block should not be edited. Reports are left aligned in the template and will show the output left aligned when the narrative is processed. If a change needs to be made, delete the entire #InsertReport block and re-insert the report.

✚ Press **Save**.

Chapter 11

Adding Signature Capture

You can add a form for collecting a signature to any area that an attachment can be added to.

About Signature Capture

Signature capture allows a signature to be digitally captured and attached to any record that supports attachments. To add signature capture to a specific record, you add a signature capture form that can include values from records or expressions added to the form, and graphic elements (lines, rectangles, or ellipses), graphic files (BMP, WMF, or EMF), and captions.

To Add a Signature Capture Form

✛ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.

✛ Highlight the record group that the signature will be added from, then press **New**. The query information is chosen based on the group selected. Signature forms cannot be moved to alternate groups once they are started.

✛ Type a *Form Name* and optionally add a detailed *Description*.

✛ Click the *Data* tab. By default, the values from the main record are listed. Add additional queries to gather additional information if necessary:

  ✛ Press **Add**.

  ✛ Highlight query to add, then press **Select**.

  ✛ Check *Queries share parameter* values to pass parameter from the main query to other queries added for form.

✛ Click the **Page Setup** tab and define the form size.

  ✛ Page Size

  ✛ Orientation

  ✛ Margins

  ✛ Press **Default Font** to define the typeface, style, and size of text added to the signature form.

✛ Optionally click *Rules* tab:

  ✛ Check *Require this form* to require the signature form.

  ✛ Type an expression that, when true, makes the signature form required.

✛ Press **OK**. The signature setup layout form is displayed. You are ready to setup the signature form layout.

About Signature Form Setup Layout

The signature form setup layout specifies how information is displayed when the signature form is displayed. If you are familiar with the

report designer layout form, you will be familiar with many of the options included in the signature form setup layout, but there are
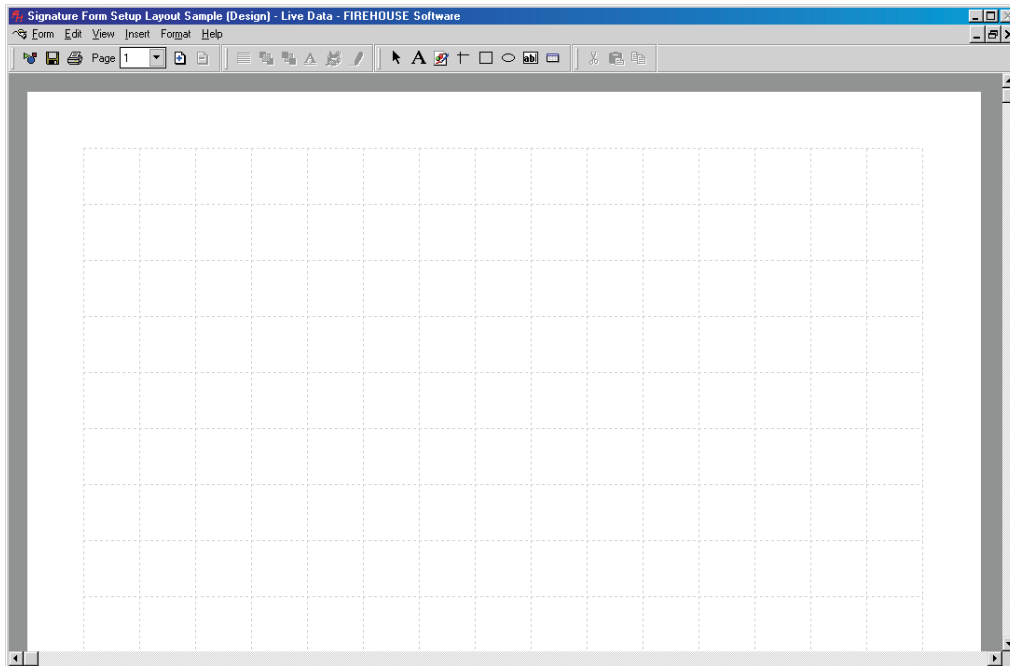
important differences.

All actions for the layout are performed using the menu or toolbars.

About Signature Form Design
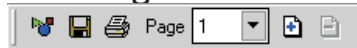
 The Design toolbar includes signature form design options for setting form properties, saving and printing the form, and adding or removing pages to the signature form.

To Edit Form Properties
✪ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.
✪ Highlight signature form, then press **Properties**.
✪ Select the **Form** menu **Properties** option. The **Signature Form Setup** form is displayed.
✪ Modify form properties as needed, then save and close.

To Add/Remove Page to Signature Form
✪ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.
✪ Highlight the signature form, then press **Layout.**
✪ Add or remove a page:

- ✪ To add a page, select the **Form** menu **Add Page** option. A page is added.
- ✪ To remove a page (only available when multiple pages are available) select the page number to delete in the **Design** toolbar, then select the **Form** menu **Remove Page** option.
- ✪ Save and close signature form layout when finished.

To Change Layout Zoom Level

- ✪ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.
- ✪ Highlight the signature form, then press **Layout.**
- ✪ Select the **View** menu **Zoom** option, then select the size of the layout:
  - • "200%" displays the layout two times as large as actual size.
  - • "150%" displays the layout one and a half times as large as actual size.
  - • "100%" displays the layout at actual size.
  - • "75%" displays the layout at three quarters actual size.
  - • "50%" displays the layout at half actual size.
- ✪ Save and close signature layout.

To Show/Hide Grid Lines

- ✪ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.
- ✪ Highlight the signature form, then press **Layout.**
- ✪ Select the **View** menu **Grid Lines** option:
  - ✪ If the **Grid Line** option is checkmarked, grid lines are currently displayed and selecting the option hides the grid lines.
  - ✪ If the **Grid Line** option is not checkmarked, grid lines are currently not displayed and selecting the option shows the grid lines.
- ✪ Save and close signature layout.

To Show/Hide Toolbars

- ✪ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.
- ✪ Highlight the signature form, then press **Layout.**
- ✪ Select the **View** menu **Toolbars** option, then select the toolbar to show or hide:
  - ✪ If the toolbar checkmarked, the toolbar is currently displayed and selecting the toolbar will hide the toolbar.
  - ✪ If the toolbar is not checkmarked, it is not displayed and selecting the toolbar will display the toolbar.
- ✪ Save and close signature layout.

Adding Objects to the Signature Layout

You can add graphic objects and dynamic values to the signature form. For example, you can add a system date or a value from an FH record.

▶ Pointer is for selecting objects already added to the layout.

A Text is for adding captions to the signature form. What you see is what is included on the signature form.

🖼 Picture is for adding graphic files (BMP, WMF, or EMF) to the signature form. Graphic files are displayed proportionately. What you see is what is included on the signature form.

⊤ Line is for adding graphic lines to the signature form. What you see is what is included on the signature form.

▢ Rectangle is for adding graphic rectangles to the signature form. What you see is what is included on the signature form.

◯ Ellipse is for adding graphic ellipsis to the signature form. What you see is what is included on the signature form.

abl Field is for adding values determined when the signature form is accessed. The expression is displayed in the layout, but a specific value is displayed when the signature form is accessed.

▤ Table is for adding a specified number of columns and rows of values determined when the signature form is accessed, especially for a list of values. The expression is displayed in the layout, but a specific value is displayed when the signature form is accessed.

To Add Text to Signature Form

✪ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.

✪ Highlight the signature form, then press **Properties.**

✪ Select the **Insert** menu **Text** option.

✪ Position cursor at top left corner of the area it will occupy, press and hold the left mouse button, then drag the cursor to the lower right corner of the area and release the left mouse button. The **Text** form is displayed.

✪ Type the text to add to signature form.

✪ Optionally specify text attributes:

　✪ Press **Font** and select a *Font*, *Font Style*, and *Size*, then press **OK**.

　✪ Press **Color**, select a color, then press **OK**.

　✪ Press **OK**.

✪ Press **OK**.

To Add a Picture to Signature Form

✛ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.

✛ Highlight the signature form, then press **Layout.**

✛ Select the **Insert** menu **Picture** option.

✛ Position cursor at top left corner of the area it will occupy, press and hold the left mouse button, then drag the cursor to the lower right corner of the area and release the left mouse button. The **Open Picture** form is displayed.

✛ Select a BMP, WMF, or EMF file to add to the signature form, then press **OK**. The selected graphic is added to the signature form.

✛ Save and close signature layout.

To Add a Line to Signature Form

✛ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.

✛ Highlight the signature form, then press **Layout.**

✛ Select the **Insert** menu **Line** option.

✛ Position cursor at top left corner of the area it will occupy, press and hold the left mouse button, then drag the cursor to the lower right corner of the area and release the left mouse button.

- If the area is wider than it is tall, a horizontal line is added.
- If the area is taller than it is wide, a vertical line is added.

✛ Save and close signature layout.

To Add a Rectangle to Signature Form

✛ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.

✛ Highlight the signature form, then press **Layout.**

✛ Select the **Insert** menu **Rectangle** option.

✛ Position cursor at top left corner of the area it will occupy, press and hold the left mouse button, then drag the cursor to the lower right corner of the area and release the left mouse button. A rectangle is added.

✛ Save and close signature layout.

To Add an Ellipse to Signature Form

✛ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.

✛ Highlight the signature form, then press **Layout.**

✛ Select the **Insert** menu **Ellipse** option.

✪ Position cursor at top left corner of the area it will occupy, press and hold the left mouse button, then drag the cursor to the lower right corner of the area and release the left mouse button. An ellipse is added to the signature layout form.

✪ Save and close signature layout.

To Add a Single Value to Signature Form

✪ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.

✪ Highlight the signature form, then press **Layout**.

✪ Select the **Insert** menu **Field** option.

✪ Position cursor at top left corner of the area it will occupy, press and hold the left mouse button, then drag the cursor to the lower right corner of the area and release the left mouse button. The **Field** form is displayed.

✪ Specify the *Expression* that will return a value.

✪ Optionally specify a *Format* to apply to the value returned by the expression.

✪ Specify field attributes:

　　✪ Check *Draw border around field* to outline the field.

　　✪ Press **Font** and select a *Font*, *Font Style*, and *Size*, then press **OK**.

　　✪ Press **Color**, select a color, then press **OK**.

✪ Press **OK**.

To Add and Auto-Configure a Table of Values to a Signature Form

✪ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.

✪ Highlight the signature form, then press **Layout.**

✪ Select the **Insert** menu **Table** option.

✪ Position cursor at top left corner of the area it will occupy, press and hold the left mouse button, then drag the cursor to the lower right corner of the area and release the left mouse button. The **Table** form is displayed.

✪ Select *Row Data Source*. All data sources added for the signature form properties are available.

✪ Press 🖎. The **Table Auto-Config** form is displayed listing all available data elements in the data source.

✪ Check each data element to add to the table. The data element name is used in the column heading in bold-face, and the value(s) are placed in the row(s). Uncheck *Bold Column Headings* to make column heading text in non-boldfaced text.

✪ Press **OK**.

✪ Select **Yes** to prompt.

✪ Specify table format:

- If *Draw Border* is checked, rows and columns are outlined by a border.
- Press **Font** and select a *Font*, *Font Style*, and *Size*, then press **OK**.
- Press **Border Color**, select a color, then press **OK**.
- Press **OK**.
- Save and close signature layout.

To Add a Table of Values to Signature Form using Manual Method
- Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.
- Highlight the signature form, then press **Layout.**
- Select the **Insert** menu **Table** option.
- Position cursor at top left corner of the area it will occupy, press and hold the left mouse button, then drag the cursor to the lower right corner of the area and release the left mouse button. The **Table** form is displayed.
- Select *Row Data Source*. All data sources added for the signature form properties are available.
- Define column:
  - Click the column header (the first column is labeled "Header1" by default) then press ▧. The **Column Properties** form is displayed.
  - Type in the text to display at the top of the column in *Header Text*.
  - Define *Header Text* attributes (if different than standard):
    - Press **B** to bold-face column header text.
    - Press *I* to italicize column header text.
    - Press ▧, select a color for column header text, then press **OK**.
  - Type or lookup an expression that will return values to the rows in the column in *Column Data Expression*.
  - Optionally specify a *Format* to apply to the value returned by the expression.
  - Define *Column Data Expression* attributes (if different than standard):
    - Press **B** to bold-face column header text.
    - Press *I* to italicize column header text.
    - Press ▧, select a color for column header text, then press **OK**.
  - Select column *Alignment*.
  - Specify the width, in pixels, allocated for the column. If the value exceeds the specified width, the value will wrap to the next line.
  - Press **OK**. The **Table** form is displayed.
- Optionally add or remove additional columns:

- Press ⊞ below *Columns* and define the column (as described above).
- Highlight a column and press ⊟ to delete the selected column.
- Optionally add rows:
  - Press ⊞ below *Rows*.
- Specify table format:
  - If *Draw Border* is checked, rows and columns are outlined by a border.
  - Press **Font** and select a *Font*, *Font Style*, and *Size*, then press **OK**.
  - Press **Border Color**, select a color, then press **OK**.
- Press **OK**.
- Save and close signature layout.

About Signature Layout Format

After all objects have been added to the signature layout form, you can modify the format of each of the objects individually. Format options are accessed from the **Format** menu or the **Format** toolbar.

▤ Align is for centering a selected object on the form vertically or horizontally, or aligning multiple selected objects with one another.

⊡ Bring to Front is for bringing a selected object to the front. When other objects overlap, the front object is on top and visible.

⊡ Send to Back is for sending a selected object to the back. When other objects overlap, the back object in on the bottom and the overlapping portion is not visible.

A Font is for setting a font for a selected object.

Color is for setting a color for a selected object.

Pen is for setting a pen style for a selected object.

To Align Object(s) in the Signature Layout
- Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.
- Highlight the signature form, then press **Layout.**
- Select object(s) to align:
  - To select a single object, position mouse pointer over object, then click left mouse button.

- ✪ To select multiple objects in an area, position the mouse pointer in the upper left corner of the area where the objects are displayed, click and hold the left mouse button, then drag the cursor to the lower right corner of the area and release the left mouse button. All area objects are selected.
- ✪ To select multiple objects that are in different areas, press and hold the **Shift** key, position mouse pointer over next object and click the left mouse button, then position mouse pointer over next object and click left mouse button, until all desired objects are selected. You can release the **Shift** key after all objects are selected.
- ✪ Select the **Format** menu **Align** option, then select to center horizontally or center vertically.
  - *Center Horizontally* places the selected object(s) in the horizontal center of the form. The object(s) will not be moved up or down.
  - *Center Vertically* places the selected object(s) in the vertical center of the form. The object(s) will not be moved left or right.
- ✪ Save and close layout.

To Align Objects to One Another
- ✪ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.
- ✪ Highlight the signature form, then press **Layout.**
- ✪ Select object(s) to align:
  - ✪ To select multiple objects in an area, position the mouse pointer in the upper left corner of the area where the objects are displayed, click and hold the left mouse button, then drag the cursor to the lower right corner of the area and release the left mouse button. All area objects are selected.
  - ✪ To select multiple objects that are in different areas, press and hold the **Shift** key, position mouse pointer over next object and click the left mouse button, then position mouse pointer over next object and click left mouse button, until all desired objects are selected. You can release the **Shift** key after all objects are selected.
- ✪ Select the **Format** menu **Align** option, then select to center horizontally or center vertically.
  - *Align Left Edges* places the left edges of selected objects in the same horizontal position. The objects will not be moved up or down.
  - *Align Right Edges* places the right edges of selected objects in the same vertical position. The objects will not be moved up or down.
  - *Align Top Edges* places the top edges of selected objects in the same horizontal position. The objects will not be moved left or right.

- *Align Bottom Edges* places the bottom edges of selected objects in the same vertical position. The objects will not be moved left or right.

✪ Save and close layout.

To Bring an Object(s) to the Front

✪ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.

✪ Highlight the signature form, then press **Layout.**

✪ Select object(s) to align:
  - ✪ To select a single object, position mouse pointer over object, then click left mouse button.
  - ✪ To select multiple objects in an area, position the mouse pointer in the upper left corner of the area where the objects are displayed, click and hold the left mouse button, then drag the cursor to the lower right corner of the area and release the left mouse button. All area objects are selected.
  - ✪ To select multiple objects that are in different areas, press and hold the **Shift** key, position mouse pointer over next object and click the left mouse button, then position mouse pointer over next object and click left mouse button, until all desired objects are selected. You can release the **Shift** key after all objects are selected.

✪ Select the **Format** menu **Bring to Front** option.

✪ Save and close layout.

To Send an Object(s) to the Back

✪ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.

✪ Highlight the signature form, then press **Layout.**

✪ Select object(s) to align:
  - ✪ To select a single object, position mouse pointer over object, then click left mouse button.
  - ✪ To select multiple objects in an area, position the mouse pointer in the upper left corner of the area where the objects are displayed, click and hold the left mouse button, then drag the cursor to the lower right corner of the area and release the left mouse button. All area objects are selected.
  - ✪ To select multiple objects that are in different areas, press and hold the **Shift** key, position mouse pointer over next object and click the left mouse button, then position mouse pointer over next object and click left mouse button, until all desired objects are selected. You can release the **Shift** key after all objects are selected.

✪ Select the **Format** menu **Send to Back** option.

✪ Save and close layout.

To Change Object(s) Font

⊕ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.

⊕ Highlight the signature form, then press **Layout.**

⊕ Select object(s) to align:

  ⊕ To select a single object, position mouse pointer over object, then click left mouse button.

  ⊕ To select multiple objects in an area, position the mouse pointer in the upper left corner of the area where the objects are displayed, click and hold the left mouse button, then drag the cursor to the lower right corner of the area and release the left mouse button. All area objects are selected.

  ⊕ To select multiple objects that are in different areas, press and hold the **Shift** key, position mouse pointer over next object and click the left mouse button, then position mouse pointer over next object and click left mouse button, until all desired objects are selected. You can release the **Shift** key after all objects are selected.

⊕ Select the **Format** menu **Font** option.

⊕ Select *Font*, *Font Style*, and *Font Size*, then press **OK**.

⊕ Save and close layout.

To Change Object(s) Color

⊕ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.

⊕ Highlight the signature form, then press **Layout.**

⊕ Select object(s) to align:

  ⊕ To select a single object, position mouse pointer over object, then click left mouse button.

  ⊕ To select multiple objects in an area, position the mouse pointer in the upper left corner of the area where the objects are displayed, click and hold the left mouse button, then drag the cursor to the lower right corner of the area and release the left mouse button. All area objects are selected.

  ⊕ To select multiple objects that are in different areas, press and hold the **Shift** key, position mouse pointer over next object and click the left mouse button, then position mouse pointer over next object and click left mouse button, until all desired objects are selected. You can release the **Shift** key after all objects are selected.

⊕ Select the **Format** menu **Color** option.

⊕ Select a color then press **OK**.

⊕ Save and close layout.

To Change Object(s) Pen
- ✛ Select the **Administration** menu, **Signature Form Setup** option. The **Signature Form Setup** form is displayed.
- ✛ Highlight the signature form, then press **Layout.**
- ✛ Select object(s) to align:
  - ✛ To select a single object, position mouse pointer over object, then click left mouse button.
  - ✛ To select multiple objects in an area, position the mouse pointer in the upper left corner of the area where the objects are displayed, click and hold the left mouse button, then drag the cursor to the lower right corner of the area and release the left mouse button. All area objects are selected.
  - ✛ To select multiple objects that are in different areas, press and hold the **Shift** key, position mouse pointer over next object and click the left mouse button, then position mouse pointer over next object and click left mouse button, until all desired objects are selected. You can release the **Shift** key after all objects are selected.
- ✛ Select the **Format** menu **Pen** option.
- ✛ Select pen size or style.
- ✛ Save and close layout.

Using Signature Capture

Once signature forms have been set up, they are ready to be used to capture signatures. Typically departments will use signature capture on a tablet PC.

To Capture a Signature
- ✛ Access the data entry form *Other* section.
- ✛ Press **Attachments & Signatures**.
- ✛ Click the *Signatures* tab.

> **NOTICE**
> FH Onsite Inspections
>
> Signatures added from FH Onsite Inspections from a PPC device are attached to inspection records as attached files.

- ✛ Press **Add**. The **Select Signature Form** is displayed.
- ✛ Highlight the Form Name, then press **OK**.
- ✛ Capture signature.
- ✛ Select the **Form** menu, **Save and Close** option when finished.
- ✛ Press **OK** to prompt.
- ✛ Press **Close**.

Signature Forms and Printed Reports

Signature forms can be included on printed reports.

To Include Signature on Report

1) The signature form is captured as an ole object that is kept in a memo field. Depending on the location where the signature is saved, it may be linked to the parent table in different ways. It is up to the user to create a query that gathers the signature memo (sign_form) from it's attachment file (att_sign). The reality is that in order to make the process flexible enough, the user would have to know the parent table, keys, and which signature is desired - so making them include it in the query was deemed feasible at this point.

2) The signature is stored in a proprietary format that cannot simply be placed on a printed form. Thus we need to convert the signature to a bitmap image in order for it to be printed. The process of creating a bitmap image is a bit complicated, and thus converting it into a General field would not be feasible without requiring some external knowledge - Thus we create the bitmap and return a temporary path to the bitmap so that the user can include the bitmap in their report. We could create a general field, but it would have to be done similar to another bitmap to general function that requires that another table be created, and adds another level of unneeded complexity.

3) By using SigtoBitmap in a query, the user is given the temporary link to the bitmap. This link is to be included as the source (file) to an ole control on the form, it will print the form as a bitmap.

4) the temporary bitmap will be deleted after the report session is closed.

Process -

1) Create query with the signature attachment memo field included

2) Use the predefined function in the query definition form to convert the memo to a temporary bitmap (use the "Custom Field Expression" to build the results using the SigToBmp function against the sign_form memo value)

3) Add an ole object to your report (generally this will be the only item on the report since the actual signature form would be the entire size of the report form)

4) set the FILE property for the ole object to be the field name containing the results from step 2. Be certain to use the cursor alias with the field name if there is more than one cursor used for the report.

Chapter 12

Creating and Modifying Graphs

Graphs can be modified or created from scratch. All graphs include graph design properties and gathered data to display in the graph. Graphs included with FH can be directly modified, but we recommend that you modify a copy of the graph so future software updates can update graphs without overwriting your changes.

Graph Creation Overview

To start a new graph:

1. Click on the **Graphs** menu, and select the area you wish to add a new graph to. The **Graphs** form is displayed with the selected graph category open.

2. Select the graph category to add a graph to. If necessary, press next to the graph category to display specific graph categories.

3. Press **New**. You are prompted to copy an existing graph or create a new graph.
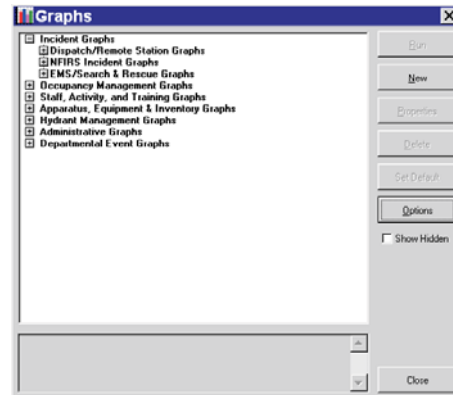
If you want to copy an existing graph, see "Copy An Existing Graph", below. If you want to create a new graph, skip to "Create A New Graph", page 156.

Copy an Existing Graph

Make a copy of an existing graph and make changes to the copy. With the prompt displayed:

✪ Select **Yes** to the prompt. The **Graphs** form is displayed.

✪ Locate the graph you wish to make a copy of, then press **Select**. The **Graph Designer** form is displayed with the copied graph information.

✪ Position cursor over **Save** button, and right-mouse click.

✪ Select **Save & Close**.

✪ Modify the Graph options as needed.

Create a New Graph

Create a new graph from scratch. With the prompt displayed, complete the following steps.

The steps leading up to this start in "Graph Creation Overview", page 156.

✪ Select **No** to the prompt. The **Graph Designer** form is displayed.

✪ Type a name for the graph in *Graph Name*.

✪ *Graph Category* contains the graph category highlighted when the new graph was initiated. You can modify the selected graph category if necessary.

✪ Type a descriptive phrase about the graph in *Comments*. The message will display in the **Graphs** form status bar, and could help users identify the purpose of the graph without having to run it.

✪ Check *Include this graph on the Graphs Shortcuts menu* to add the graph to the **Graphs** menu **Graph Shortcuts** submenu. include the most frequently accessed graphs for your department in this area.

✪ Check *Hide this graph* to prevent the graph from being included in the **Graphs** form listing (unless *Show Hidden Graphs* is checked).

Add Query to Graph

You're ready to add a query. The query gathers the data for display on the graph form.

✪ Press **Add**. The **Queries** form is displayed.

    ✪ Select whether to copy an existing query or to create a new one:

        ✪ To copy an existing query select **Yes** and find a query to copy or press **Ctrl+F** to search for the query using a keyword.

        ✪ To create a blank query select **No**. The **Query Designer** form is displayed.

    ✪ Define or edit (if a copy was created) the query.

Creating and defining queries is described in Chapter 7.

    Be sure to include all of the information that you will include in the graph. When you're finished, save and close the new query. The **Queries** form is displayed with your query highlighted.

✪ Press **Select**. The **Graph Query** prompt is displayed.

    ✪ Change *Query Alias Name* only if you have a specific reason for doing so.

    ✪ Check *Don't requery if alias name is already in use* to not run query if the alias name assigned to the query is already in use.

✪ Press **OK**. The query is added to the query area of the **Graph Designer** form.

Set Graph Options

You have defined the graph design properties, added a query to gather

the data for the graph, and the **Graph Designer** form is still displayed. Press the *Graph Options* tab to display the *Graph Options* section.

NOTICE
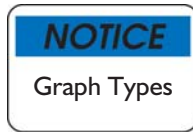
Graph Types

You want to make your graph easy to understand. If you are looking for a directional trend, consider one of the line graph types or if you want to display percentages choose the pie graph type.
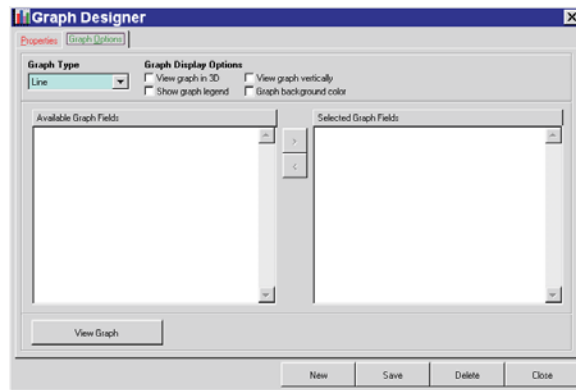
- ✚ Select a *Graph Type*:
  - ✚ Select *Bar* to display the graph in side by side columns of information. Information is color coded for each type of information displayed.
  - ✚ Select *Stacked* to display the information in columns placed on top of each other. Information is color coded for each type of information displayed.
  - ✚ Select *Line* to display information in points and the line connects them. This shows upward and downward trends.
  - ✚ Select *Curved Line* for a display like *Line* except the line is curved instead of straight.
  - ✚ Select *Area* to display a line of the plotted points then shading in the area below the line.
  - ✚ Select *Points* to display the information at plotted points without connections between the points.
  - ✚ Select *Pie* to display information in percentages.
- ✚ Check *View 3D* to display the graph in three dimensions.
- ✚ Check *Show legend* to display the description of the color-coded information. This is recommended if the graph is comparing values to help the reader distinguish each value.
- ✚ Check *View vertically* to reverse the X and Y axis.
- ✚ Check *Graph background color* to choose the background color for your graph.

To make a valid graph you need to choose at least one numeric field and one character field. The character field is displayed on the Y axis (or as the different slices on a Pie graph). The numeric field values are plotted on the X axis.

- ✪ Add fields from *Available Graph Fields* by highlighting a field and pushing ⟩ , or by double clicking on the field. The field is added to *Selected Graph Fields*.
- ✪ Save all changes made to the *Graph Options* section. Press the **View Graph** button to preview your graph.

Sample Graph

The steps to create a graph that displays the number of incidents of each alarm type are listed below.

1. From the **Graphs** menu, select the **Incident Graphs** option. The **Graphs** form is displayed.

2. Press **New**. Select **No** to prompt "Would you like to start by making a copy?" The **Graph Designer** form is displayed.

3. Type "Incidents by Alarm Type" in *Graph Name*.

4. Type "This graph lists the number of incidents of each alarm type." in *Comments*.

5. Check *Include this report on the Graph Shortcuts*.

6. Press **Add**. The **Queries** form is displayed.

7. Press **New**. Select "No" to prompt "Would you like to start by making a copy?" The **Query Designer** form is displayed.

8. Type "Incidents by Alarm Type" in *Query Name*. Select the *Tables* tab.

9. Select *Incident*, *Inc_main* table. Select the *Fields* tab.

10. Highlight *Inc_id*, then press **Count**, then select "Count Distinct Values" when prompted. A count field is added.
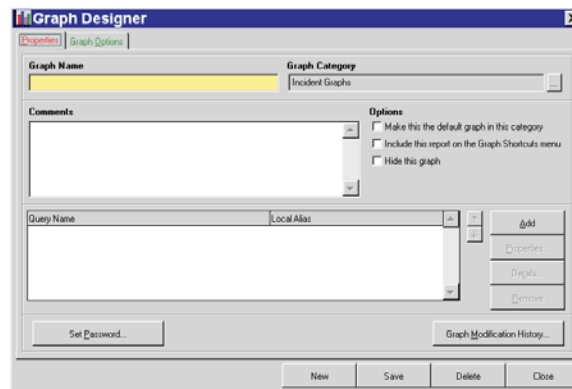
11. Highlight *Alm_type*, then press ▷ . Select the *Order By* tab.

12. Highlight *Inc_main.Alm_type* then press ▷ . Select the *Group By* tab.

13. Highlight *Alm_type* then press ▷ .
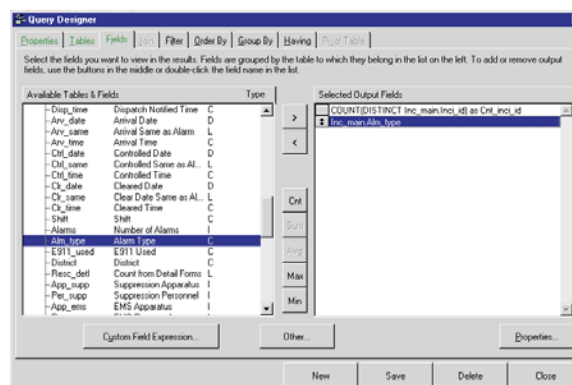
14. Press **Save**, then **Close**. The **Queries** form is displayed. Press **Select**. The **Graph Designer**

form with your new query is displayed. Select the *Graph Options* tab.

15. Highlight each field and press $\boxed{>}$.

16. Press **Save**.

17. Press **View Graph**. The **Graph** form containing the graph is displayed. If you wish to experiment with different graph types, close the **Graph** form, change the *Graph Type* in the **Graph Designer** form then press **View Graph** to see results. Save and close when ready.
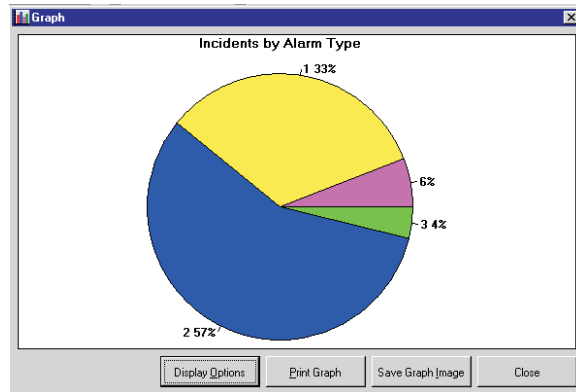
Appendix A

User-Defined Fields To State

User-defined fields can be added and included in incident transaction files.

DANGER
Do not Use
Unless Necessary

Do not do this unless you have to. Your state will typically provide this information as an installable option. It is only included here for your reference. The method below is not recommended for sharing data between departments. NFIRS and EMS transaction files are standard text files that include required information that the state uses for analyzing incidents. Each required element of an incident is included in the transaction file in a standard format. It is beyond the scope of this manual to detail the structure of the NFIRS or EMS transaction file. More is available from the NFIRS design document. User defined fields can be included in NFIRS or EMS transaction files.

Adding user-defined fields is described in Chapter 6 of this manual.

Available User-Defined Field Areas

Listed below are the areas where user-defined fields can be added for inclusion in the transaction file, and the corresponding form from which user-defined fields will be accessed

Available Area	Form Name
NFIRS Incident Reporting	
NFIRS Incident Report User fields	**NFIRS Incident Report** form
Incident Involvement User fields	**Involvement** form
Civilian Casualty User fields	**Civilian Fire Casualty Report** form
Fire Service Casualty User fields	**Fire Service Casualty Report** form
Investigation Report User fields	**Investigation Report** form
Investigation- Suspect/Involvement User fields	**Investigative Leads/Involvement Report** form
EMS/Search & Rescue Incident Reporting	
EMS/Search & Rescue Incident User fields	**EMS/Search & Rescue Report** form
EMS/Search & Rescue Patient/Victim User fields	**Patient/Victim Information** form

User-defined fields can be initially setup directly from the form where they will be entered. To set up user-defined fields for the first time, access the *Other* section of the form where the user-defined field will be added, press **User Fields...** then answer **Yes** to the prompt.

The standard method for setting up user-defined fields is detailed on page 62.

Add User Fields to NFIRS Export

If your state requires specific fields in addition to the basic NFIRS 5.0 specification, you will need to add these fields. Some states use FH for data collection and will provide these user-defined fields as an FH component, so be sure to contact your state reporting agency before adding user-defined fields for inclusion in incident transaction files.

See the help file "Copy and Install Components" topic for information on installing components like user-fields and codes that have been set up.

When you add user-defined fields for incident transaction files, each field is associated with a specific user-defined record type and each field associated with the record type is assigned a sequence number.

Available record types:

- NFIRS 5.0:
  7000 - 7999 types are reserved for local use
  8000 - 8999 types are reserved for state use
- EMS:
  17000 - 17999 types are reserved for local use
  18000 - 18999 types are reserved for state use
- EMS Patient:
  19000 - 19499 types are reserved for local use
  19500 - 19999 types are reserved for state use

Below is a fictitious example. Your state requires incident transaction files to include information about water source and total water volume used to extinguish fires. They provide the following specification for this information:

Record Type 8000:
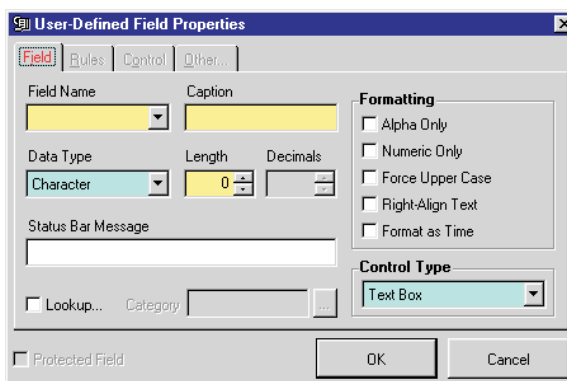
Field Name	Width	Format
Water Source 1	15	Character
Water Source 2	15	Character
Water Source 3	15	Character
Total Water Volume	9	Numeric, 2 decimals

The "8000" records are submitted as two fields, one field that includes as many as three water sources, and the second field that includes the total volume of water in gallons.

✪ From the **Administration** menu select the **User-Defined Fields…** option.

✪ Highlight **NFIRS Incident Reporting**, *NFIRS Incident Report User Fields* then press **Setup**. The **Incident User Fields** form is displayed.

Add Water Source Fields

✪ Press ⌨ then position your cursor in the area you wish to add the field to.

✪ Press your left mouse button. The **User-Defined Field Properties** form is displayed.

✪ Type "Water Source 1" in *Field Name*. *Caption* is automatically filled with the value entered in *Field Name*. Edit this value if you want the label displayed next to the field to be different than the field name (the field caption will not affect the transaction file).

✪ Select "Character" for *Data Type*, then type "8" for *Length*.

To ensure that consistent values are entered for water source, make the water source fields lookup driven.

✪ Check *Lookup…* The *Category* field becomes required.

Add a New Lookup Category

✚ Type "Wtr Src" in *Category*.

✚ Access the **User-Defined Field Properties** *Other...* section.

✚ Check *Export as NFIRS 5.0 user field transaction*.

✚ Select record type "8000".

✚ Check *Field is part of a multiple pick*.

✚ Type "1" in *Export Sequence*.
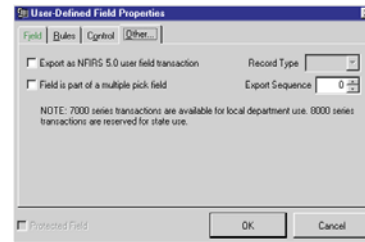
The value in *Export Sequence* for all fields that are grouped together must be the same.

✚ Press **OK**, then **Yes** to the prompt to create new lookup category. The **Code Set** form is displayed.

✚ Press **OK**. You can add valid codes to your new lookup category now by pressing next to the new lookup-driven user-defined field.
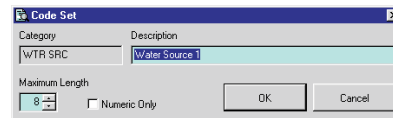
Repeat the steps listed under "Add Field" for Water Source 2 and Water Source 3. The only difference will be the *Field Name*. The water source fields will share the "Wtr Src" lookup category, so you will not be prompted to create a new lookup category. Be sure to assign the correct value for *Record Type*, check *Field is part of a multiple pick* and use "1" for *Export Sequence*.

Add Total Water Volume Field

✚ Press [abl] then position your cursor in the area you wish to add the field to.

✚ Press your left mouse button. The **User-Defined Field Properties** form is displayed.

✚ Type "Total Water Volume" in *Field Name*. *Caption* is automatically filled with the value entered in *Field Name*. Edit this value if you want the label displayed next to the field to be different than the field name (the field caption will not affect the transaction file).

✚ Change *Data Type* to "Numeric".

✚ Type "9" in *Length*.

✚ Type "2" in *Decimals*.
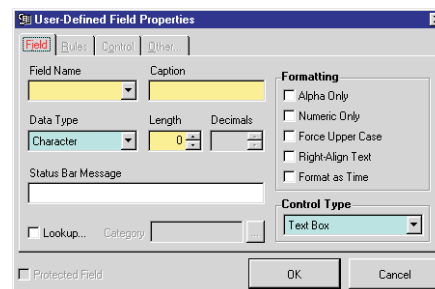
✪ Access the **User-Defined Field Properties** *Other…* section.

✪ Select record type "8000".

✪ Type "2" in *Export Sequence*.

✪ Press **OK**.

✪ Press **Save**. All field additions and modifications are listed in the **Confirm Update** form.

✪ Press **OK**. The **User-Defined Fields Setup** form is displayed.

✪ Press **Close**.

You are ready to start using your user-defined fields. When incidents are entered, the user-defined fields can be completed and included in the export transaction file (be sure that *Export state user field transactions* is checked in the export wizard).

Index

Index

V

View/Run Reports