

# TrapManager®



For the **TrapMan®** System

## QUICK START GUIDE

 **TLV**® CO., LTD.

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This Quick Start Guide is for **TrapManager** version 3.4.x

## Welcome to TrapManager

Welcome to **TrapManager**, the Windows-based software component of the **TrapMan** Computerized Steam Trap Management System. This system has been developed to provide the most effective means of steam trap management.

Because of its unique properties, steam is used in many applications throughout the world; such as in refineries, petrochemicals, pharmaceuticals, food processing, dry cleaners, hospitals, etc. The main function of steam traps is to remove the condensate as soon as it is formed when steam gives up its latent heat in the heating process.

Proper steam trap operation is essential for efficient performance of steam-using equipment. Whether a trap has failed closed (blocked, preventing condensate from being discharged) or open (blowing steam), energy is wasted.

Managing the steam trap population can be a monumental task, especially in refineries where they can number in the thousands.

**TLV**, the developer of the world's first diagnostic device to provide quick and accurate assessment of steam trap conditions, **TrapMan**, has developed this improved version both to meet the requests of the thousands of satisfied users of the **TrapMan** System and to meet the needs of first-time users.

## What is TrapManager?

The **TrapManager** software is used together with the **TM5** and **TM5N** (standard type) or **TM5-EX** and **TM5N-EX** (intrinsically safe type) hardware (hereinafter referred to as **TM** hardware for fully integrated steam trap inspection and diagnosis. The data obtained by measuring individual traps with the **TM** hardware is sent to the computer that uses the **TrapManager** software. Once in the computer, the data can be manipulated in various ways: it can be displayed on the screen in both table and graph format, exported in various formats for analysis in other software programs; or printed out in report form.

Trap management with the **TrapMan** system involves dividing the factory up into areas, each of which contains a certain number of traps. The details of each trap are recorded and input into the **TrapManager** Master Log to be downloaded to the **TM** hardware for each survey. The order in which the traps in each area are inspected is called the Route. With **TrapManager**, you can create different routes through a single area or through multiple areas. You can create new routes or modify existing routes as needed, based on criteria such as area, application, trap type, etc.

After the trap survey (in which individual traps are inspected one by one with the **TM** hardware) has been completed, you can connect the **TM** hardware to your personal computer (with the **TrapManager** program running) and transfer the data directly into the computer using the Communicate command on the Utilities menu. You can then:

- Analyze the data using the commands on the Analysis menu
- Print the data in the form of various reports using the commands on the Report menu
- Export the data in other formats using the Export command on the Utilities menu

## TrapManager Previously Added Features

- Compatible with Windows Vista, Windows 7, and their 64 bit versions
- Standard help feature cannot be used with Windows Vista and Windows 7. Use [Help Patch Installation] to make help available.
- Compatible with dual-core PCs with faster processing speed.
- New Trap Model Selection dialog, which allows selection of individual Trap Models in addition to selection by trap manufacturer. Since **TM** memory is limited, this feature allows **TM** to work with Trap Code version 500 or higher.
- Option to update Master log records for NO CHECK traps during data upload from **TM**.
- Increased the number of selectable COM ports from 4 to 20.
- Automatic database conversion. When a database created by an earlier version of **TrapManager** is opened, the database is converted automatically to the newer version.
- Improved data display with features such as drag & drop column, hide columns, show hidden columns, merge adjacent cells with same content, export display columns.
- **TrapRoute**: Traps to be inspected can be easily selected and arranged in routes. Selection criteria include failed traps, traps overdue for inspections, area, application, etc.
- New trap analysis:
  - Simple yet powerful Analysis dialog. Each analysis is designed to be in a single window with three panes: trap selection, summary data, and graphs. Switching between analysis types is easy.
  - Selection criteria for analysis can be saved for future use.
  - More than one analysis can be opened at the same time for quick comparison.
  - Custom graphics: Change graph types and associated attributes, rotate 3-D graphs, copy chart data or graph to other Windows applications such as Microsoft Excel.
- Failed Trap Reminder: Dialog showing the failed traps will appear at startup.

- Flexibility
  - Users can add new and modify existing parameters that describe traps' information. For example, under Application, new applications can be easily added to the existing selection. These new applications will then be synchronized with the **TM** hardware.
- Advanced communication with hardware: Able to communicate with more than one hardware unit and keep track of each in terms of code updates and routes downloaded for inspection.
- History Log
- Increased capacity for trap codes
- No code book, Code Search function
- Additional user codes
- Export data to many formats
- HELP: Electronic manual and Help functions

## Product Components

**TrapManager** Software  
CD-ROM  
Hardlock Key (HASP) – USB  
Quick Start Guide (on CD-ROM in PDF format)

**TMSN/TMSN-EX** Hand-held Diagnostic Unit (Hardware)  
Main Body, Coil Cord, Probe  
Special Electrical Charger  
Belt-loop Holder  
Protective Case  
Strap  
Earphone (**TMSN** only)  
USB Communications Cable  
Flat File  
Carrying Case  
Pocket Guide  
Instruction manual

## PC Requirements

OS: Windows 2000, Windows XP, Windows Vista, Windows 7  
Communication Ports: Requires one COM port (USB)  
CPU: Minimum: Windows 2000: Intel Pentium 133,  
Windows XP: Intel Pentium 300,  
Windows Vista and Windows 7: Intel Pentium 800  
Recommended: Intel Pentium 1GHz or higher capability;  
**TrapManager** has been tested with Intel processors

Hard Disk: Minimum: 60 MB free space

Memory (RAM): Minimum: 512 MB  
More memory generally improves responsiveness

CD-ROM Drive: Minimum: 2x (double speed)

Display: Minimum: SVGA monitor (800 X 600) with 256 colors  
Recommend: XGA (1024 X 768) and 16-bit color

# The Trap Management Process

Normally the following procedure is used for steam trap management:

1. Initial on-site survey.
2. Create trap management log with **TrapManager** software.
3. Download data from **TrapManager** software to **TM** hardware.
4. Inspect traps with **TM** hardware.
5. Upload data from **TM** hardware into **TrapManager** software.
6. Analyze the data with **TrapManager**.
7. Replace defective traps.
8. Update trap management log with **TrapManager** software.

Steps 1 and 2 are necessary only when performing trap management for the first time. These steps should be done as thoroughly as possible in order to minimize future file maintenance and for complete system analysis.

Steps 3 through 8 should be performed for each subsequent inspection.

## Initial On-Site Survey

Before a trap management log can be created, you should first do the following:

- (1) Create a diagram of the plant showing the location of the traps
- (2) Assign area numbers and trap numbers
- (3) Attach permanent metal trap management tags
- (4) Record the trap information

### (1) Create Trap Location Diagram

The trap location diagram should show the location of traps and other pertinent equipment. For example, the diagram for a steam plant would include the location of the steam mains, the steam equipment and the points where traps are installed.

### (2) Assign Area Numbers and Trap Numbers

The factory should be divided into distinct areas to ensure the efficiency of trap management. The factory may be divided by cost center, by plant, by building, by traps for heating or steam mains, or by any other grouping that will make management easier.

Normally a single person is capable of inspecting about 200 traps in a single 8-hour day. You may use this figure as a basis for dividing the area into easily manageable units.

### (3) Attach Trap Management Tags

It is essential that each trap not only be assigned its own area and trap identification number, but that the number be attached to the piping near the trap by means of a permanent metal tag. This method of identification serves three purposes:

1. It allows for easier visual identification of traps in a facility.
2. It helps to prevent errors made in the collection of trap inspection data.
3. Trap data is stored by these area/trap numbers.

Aluminum or stainless steel tags are most often used for numbering traps. The tags are usually attached to the piping by means of a wire or a snap-on clip.

### (4) Record Trap Information

One of the most important aspects of efficient trap management is knowing what information needs to be collected about each particular trap. Too much information can lead to confusion and a considerable waste of time in trying to analyze data that is not really necessary. Lack of information, on the other hand, can also result in considerable effort being expended in an attempt to produce reliable, effective results from insufficient data.

Since most of the information about each steam trap is collected during an initial survey, it is helpful to have a standard form which can be used for all traps in order to make this process as simple as possible. The **TrapMan** system uses a special form which specifies all of the information required for a complete data record of each trap. The form, known as the Steam Trap Data Record includes all the necessary information about each trap to be filled in and subsequently entered into **TrapManager** on the computer.

## Creating a Trap Management Log with **TrapManager**

The data obtained in the initial on-site survey is entered into the computer that uses **TrapManager** to create a trap management log. This process need be performed only once. Once the log has been created, it can be updated by sending data to and receiving data from the **TM** hardware during each inspection process.

# Installing TrapManager

## Notes Before Installation

**TrapManager** will only function on Windows 2000, Windows XP, Windows Vista, and Windows 7 operating systems.

To minimize potential problems when installing **TrapManager**, please make sure that these required components are properly installed before proceeding with the **TrapManager** installation.

When using the included USB communications cable to connect the **TM5N** (**TM5N-EX**), it is not necessary to install the USB driver separately as it will be installed automatically during the **TrapManager** installation.

The following preparation is necessary when using a USB to serial adapter with the D-SUB serial communications cable to connect the **TM5** (**TM5-EX**). See p.39 “Appendix 1: USB to Serial Adapter Installation Instructions” and p.43 “Appendix 2: COM Port Identification” for details.

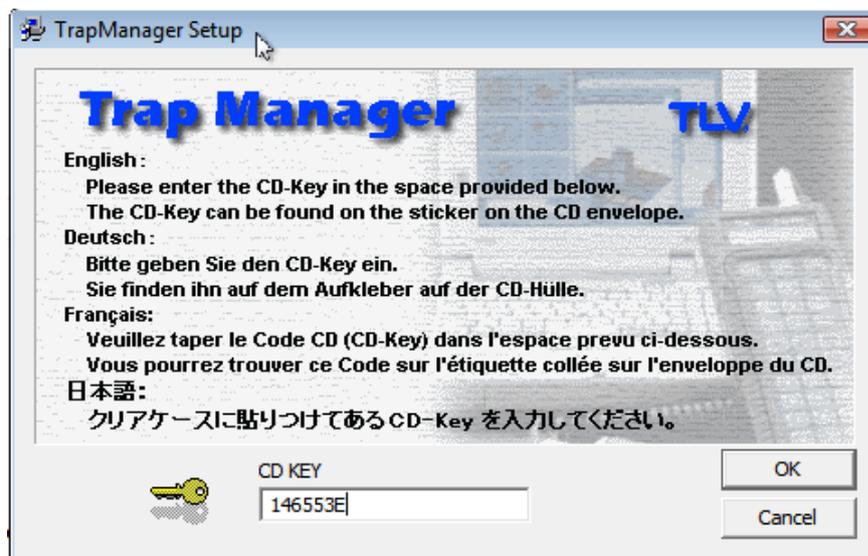
- Connect the USB to serial adapter and install the driver.
- Confirm which COM port the USB to serial adapter has been assigned to.

Connect the USB to serial adapter with the PC and the other end of the D-SUB serial communications cable to the **TM** hardware.

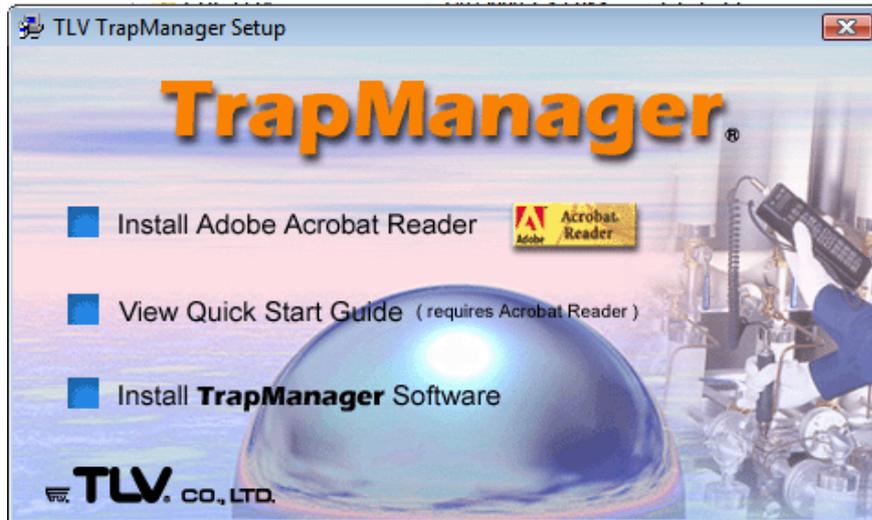
## Installation Procedure

To install\* **TrapManager**, insert the CD-ROM disc into your CD-ROM drive. After inserting the CD-ROM, the setup program will start automatically.

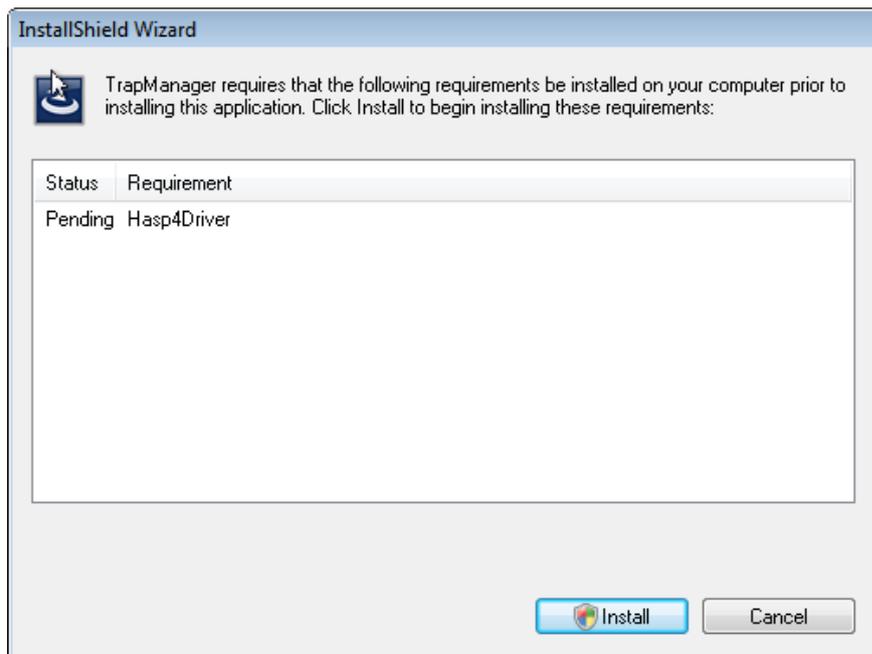
\* Note: To install any software on Windows, one must have administrative privilege.



A dialog box will appear requesting that you enter the CD KEY (located on the sticker on the CD envelope) to setup the software language that matches the **TM** hardware shipped to you. Enter your CD-Key, then click [OK] to continue or [Cancel] to stop the installation.

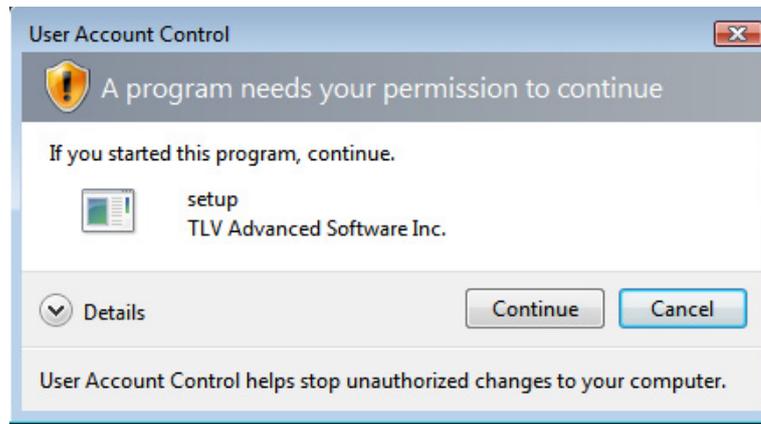


After entering the CD-Key, the setup menu will appear. Select “Install **TrapManager** Software” from the options menu.



If the HASP driver is not installed, the screen shown above will appear. Select [Install].

If the HASP driver has already been installed, the **TrapManager**-InstallShield Wizard Screen (see p.13) will appear.

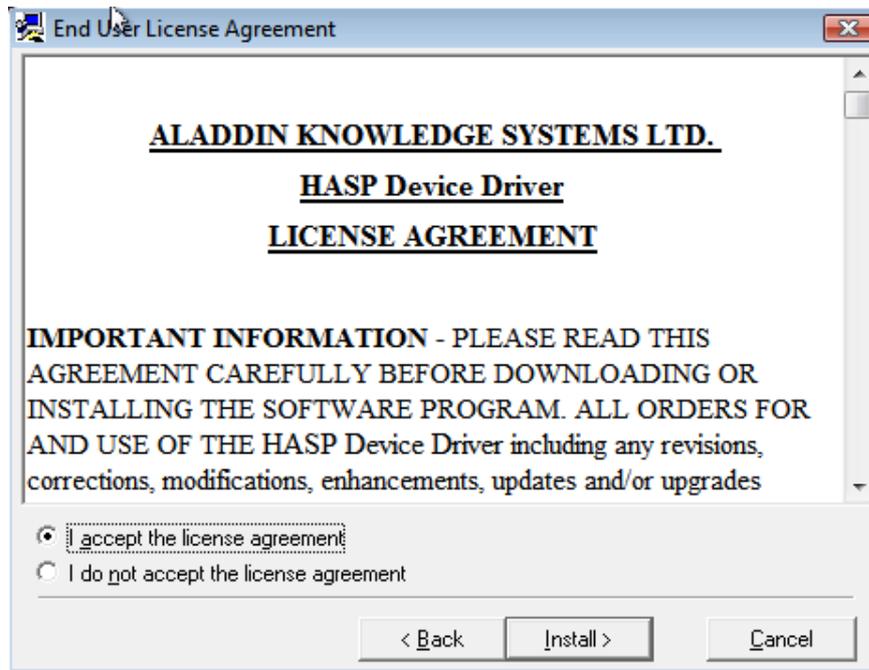


The above screen often appears when you are using Windows Vista or Windows 7. Click [Continue].



Click [Next >] on the Welcome Screen.

NOTE: For Windows 7 users, proceed by clicking [Next >].



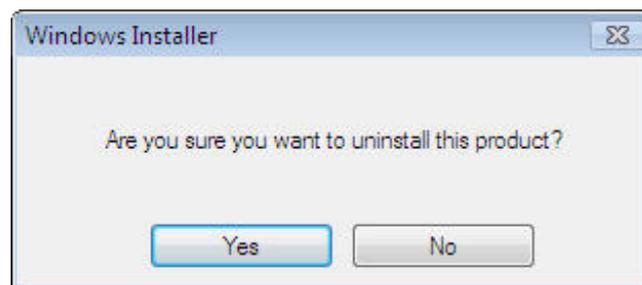
Select [I accept the license agreement] on the End User License Agreement screen and click [Install>].



"Driver installed successfully" will appear indicating that the installation of the HASP driver is complete. Click [Finish].



The above message will appear only if the installation program detects an older version of **TrapManager** on your system. Click [Next >] to proceed with the uninstall.



Please click “Yes” to start the uninstall of the previous version. This is necessary because of Windows Vista and Windows 7’s new security.

Note that any databases existing under the old version of **TrapManager** will be moved to TrapManager\DatabaseOld. This is done in order to protect previously existing data from being overwritten during the new installation.

Windows Vista and Windows 7:

C:\ProgramData\TLV\TrapManager\DatabaseOld\

Windows XP and Windows 2000:

C:\Documents and Settings\All Users\Application Data\TLV\TrapManager\DatabaseOld

This folder information will be provided again at the end of the new installation.

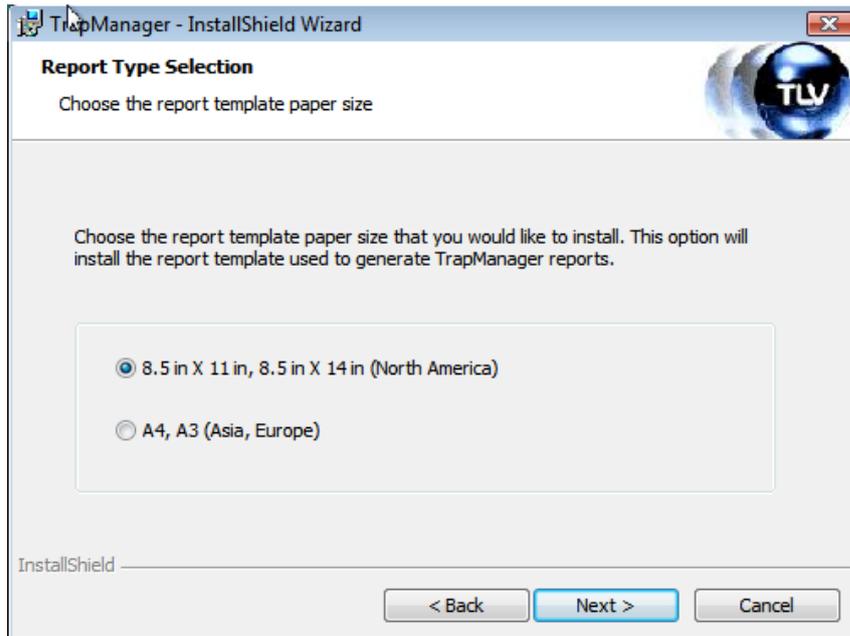
If an older version of **TrapManager** is not currently installed on your computer, the setup program will immediately begin preparing for installation. Clicking [Cancel] on any screen will end the installation procedure.



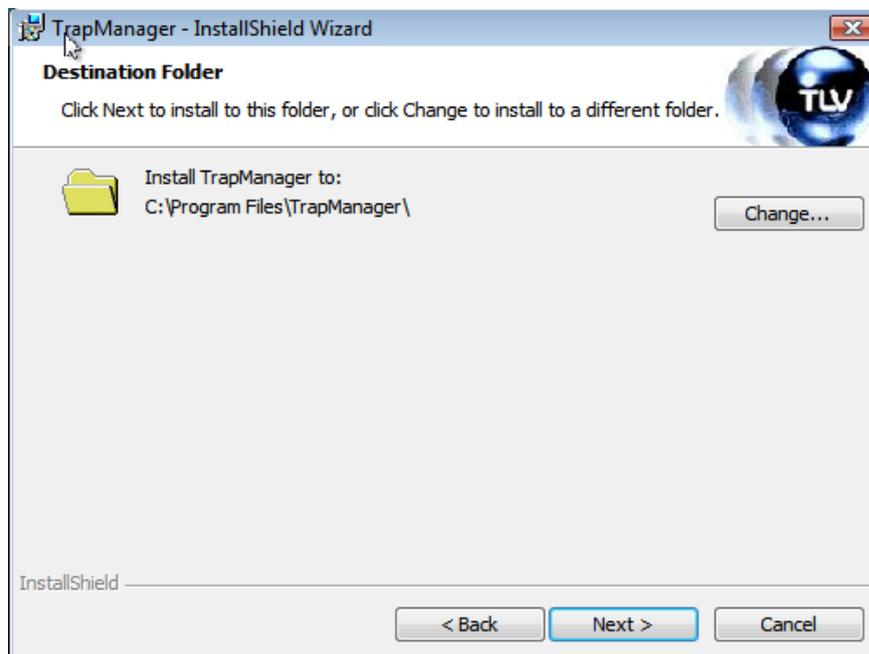
The opening dialog box for the **TrapManager** – InstallShield Wizard will appear. Click [Next >] to continue with the installation procedure.



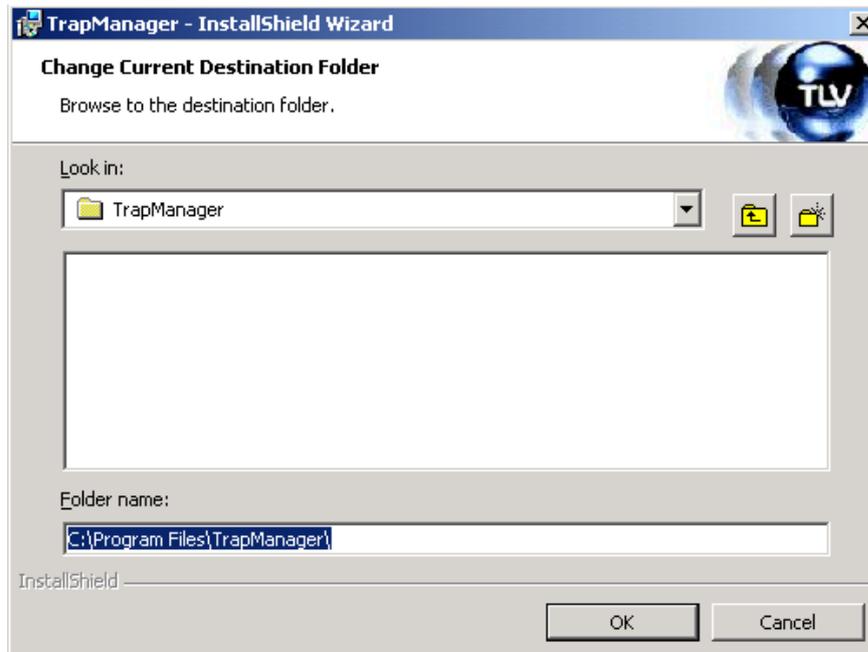
The License Agreement will be displayed the licensing agreement screen. When you have read and accepted the terms of the licensing agreement, check [I accept the terms in the license agreement] and then click [Next >]. Selecting [I do not accept the terms of the license agreement] and then clicking [Next >] or clicking [Cancel] ends the setup process.



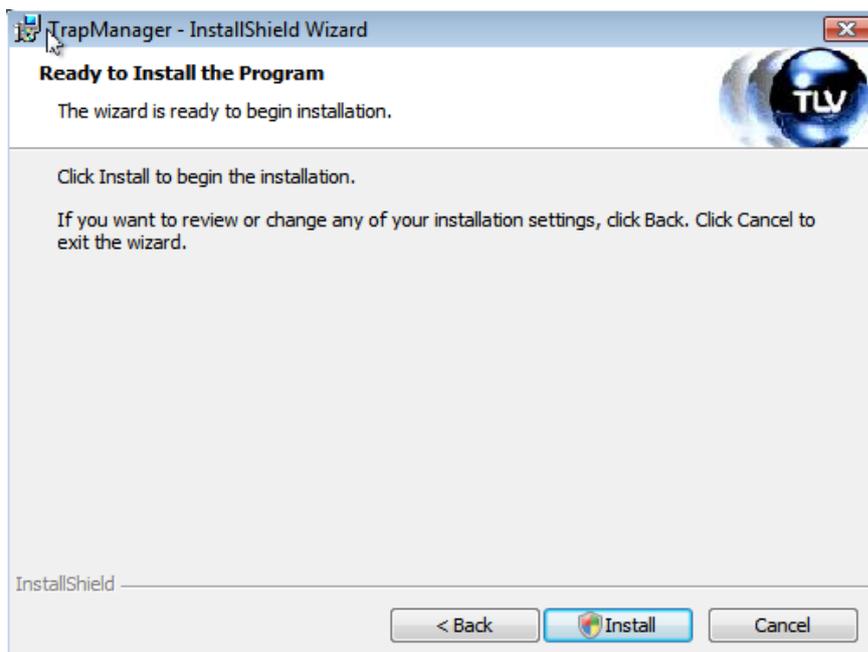
The Paper Size Selection screen will appear. Select the paper size desired for reports printed by **TrapManager**. You may select 8.5 x 11" / 8.5 x 14" (used in North America) or A4/A3 (used in Asia, Europe, etc.).



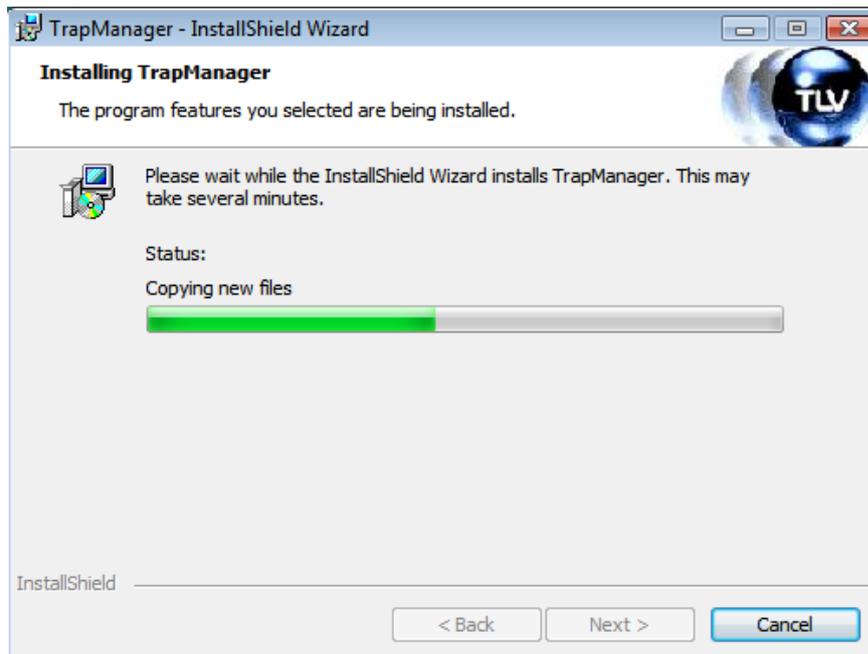
Clicking [Next >] in the Paper Size Selection screen displays the screen used to select the Destination Folder for the installation of the **TrapManager** software. The directory name will be listed beside the folder icon. Click [Next] to install **TrapManager** in this directory. Click [Change...] to select another directory in which to install the software.



If you clicked [Change], you will be able to select the target directory for the installation. Either browse to locate the desired directory, or type the directory path in the box at the bottom of the screen. Click [OK] after selecting the desired directory.

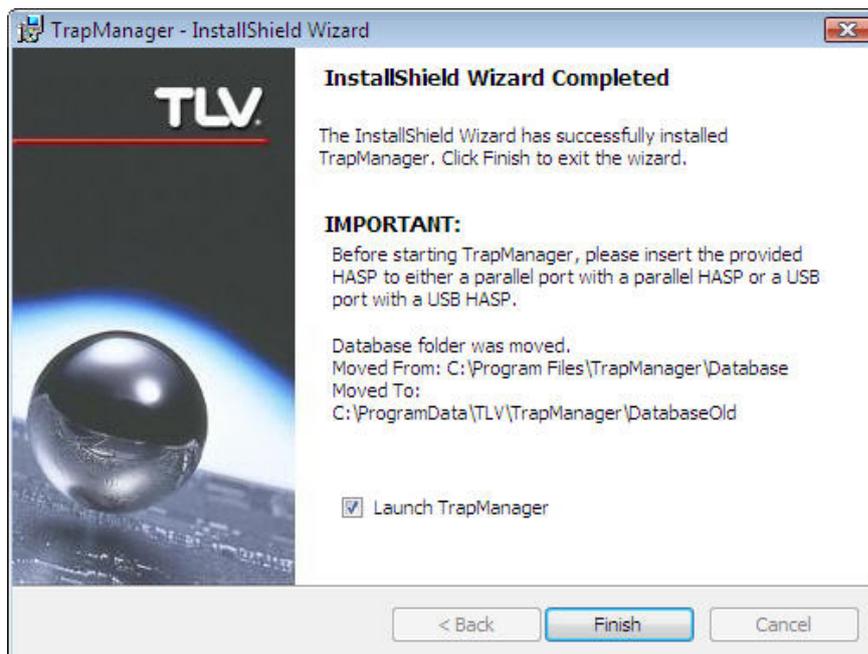


**TrapManager** is now ready to be installed on your computer system. Click [Install] to complete the installation process. Click [Cancel] to exit setup and cancel the installation.



**TrapManager** will now install itself onto your computer. The present status of the installation will be shown by the length of the colored status bar.

Note: Depending on your Windows version, messages may appear suggesting some windows files should be updated. Click [OK] to continue.



The **TrapManager** installation is now complete. Click [Finish] to exit the InstallShield Wizard.

Note:

1. The Hardlock key (HASP) must be connected to a USB port before **TrapManager** can be used.  
The HASP key used for TrapManager ver. 3.4.x and later is different than the one used for ver. 3.3.x and earlier. If you have upgraded from TrapManager ver. 3.3.x or earlier to ver. 3.4.x or later, be careful not to mix up the new and old HASP keys.
2. If previous version was detected, there is an extra message showing the new location for the previous database folder. The new location is:

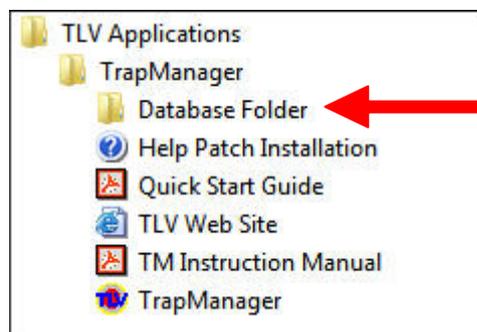
Windows Vista and Windows 7:

C:\ProgramData\TLV\TrapManager\DatabaseOld\

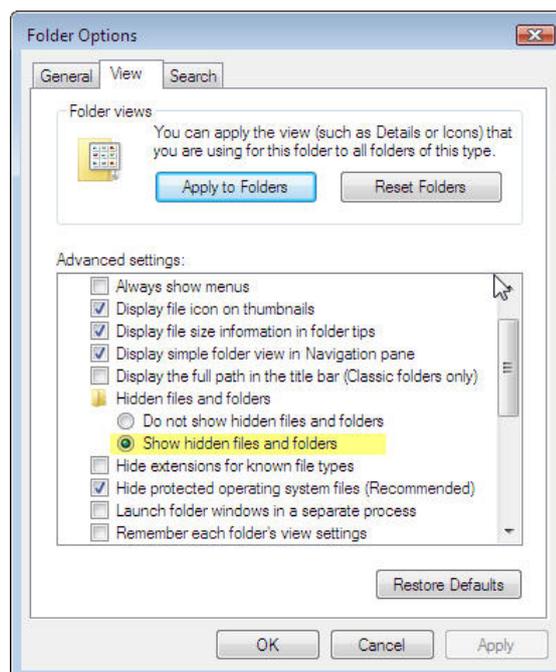
Windows XP and Windows 2000:

C:\Documents and Settings\All Users\Application Data\TLV\TrapManager\DatabaseOld\

The easiest way to access the new Database Folder is to click [Program]>[TLV Applications]>[TrapManager]>[Database Folder] from the Windows [Start] menu.

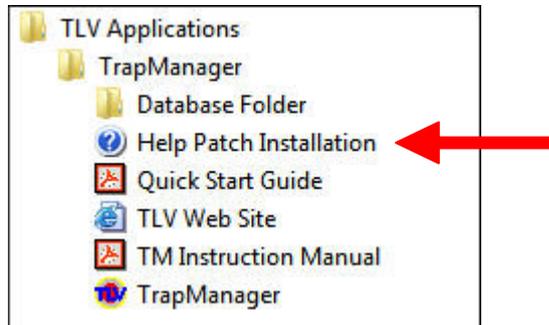


Please be advised that these folder names: “C:\ProgramData\ ...” or “C:\Documents... \Application Data\ ...” are hidden folder by default. Therefore, they will not be visible if manually looking with Windows Explorer. To display hidden folders, please use the folder option as shown in the dialog below.

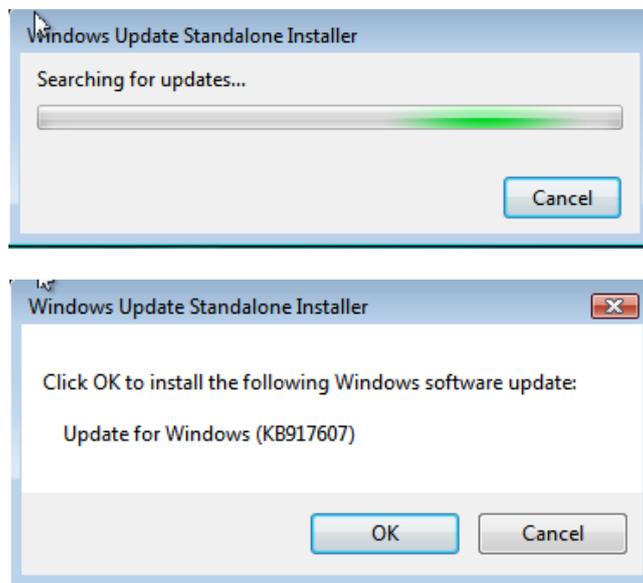


## Additional Installation Procedure for Windows Vista and Windows 7

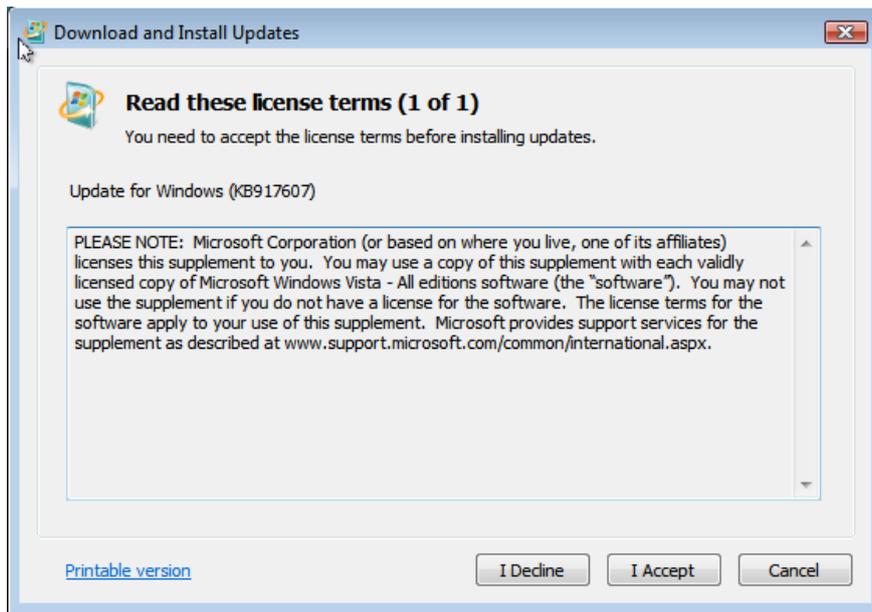
Existing help files cannot be used with Windows Vista or Windows 7. If you wish to use the **TrapManager** help files on Windows Vista or Windows 7, the following additional installation procedure needs to be carried out once.



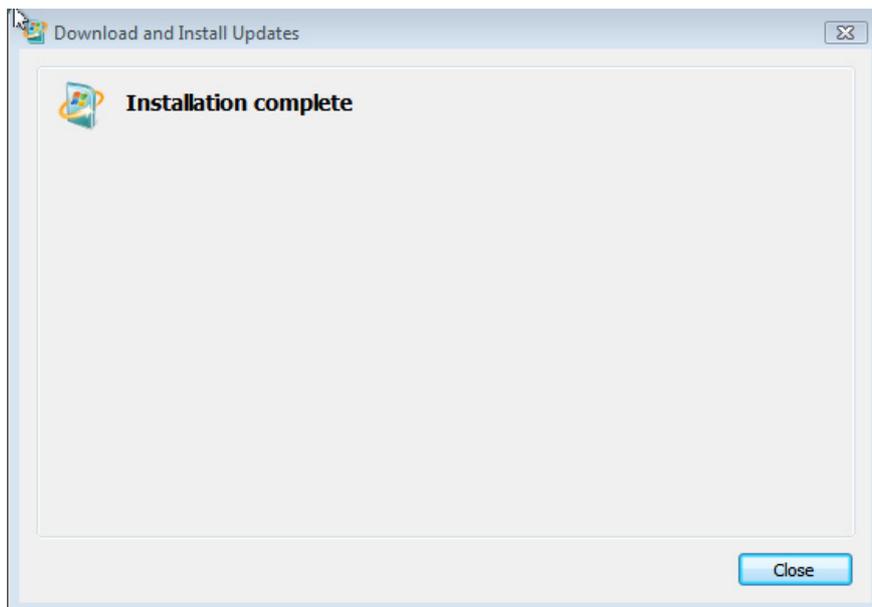
To start, choose [Program] > [TLV Applications] > [TrapManager] > [Help Patch Installation] from Windows [Start] menu, this will start your default browser and take you to the appropriate Microsoft (MS) link where you can download the Windows Help Program. Follow the instructions on the screen. Please be advised that your Operating System must be genuine to download any update/service packs or patches such as the Windows Help Program.



Once the above message appears, click [OK].



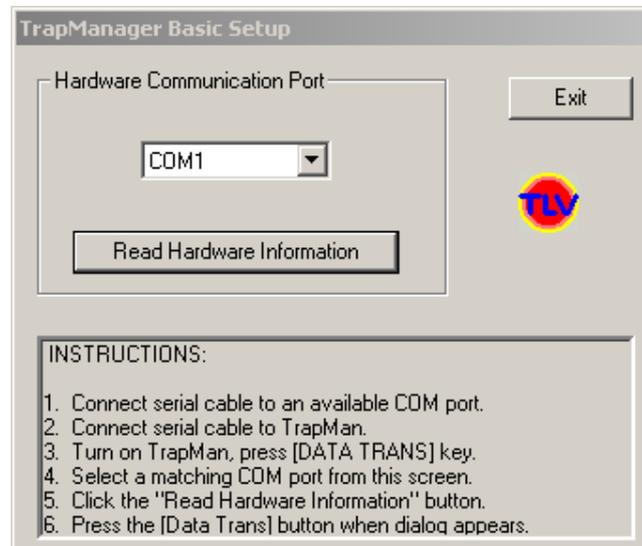
Accept the license terms and continue installation by clicking [I Accept].



Once installation is complete, click [Close].

## Starting **TrapManager** for the First Time

To start **TrapManager**, choose Programs > TLV Applications > TrapManager > TrapManager from Windows' [Start] menu. You can also launch **TrapManager** directly from the last dialog screen at the end of the installation process.



To properly initiate **TrapManager**, it is necessary to establish communications between the software and the hardware to setup the proper engineering units. To accomplish this, follow the instructions in the Basic Setup as shown:

1. Connect the serial cable to an available COM port.\*
2. Connect the other end of the serial cable to **TM** hardware.
3. Turn on **TM** hardware and press the [DATA TRANS] key.
4. Select a matching COM port from the screen by clicking the appropriate radio button.\*\*
5. Click the [Read Hardware Information] button.
6. Press the [Data Trans] button when the dialog appears.

Error messages will be displayed when the COM port selected is not available or the **TM** hardware has either not been turned ON or the cable is not connected.

\* If using the USB to serial adapter, be sure to install the proper device driver first. See appendix 1 for instructions.

\*\* If using the USB communications cable or USB to serial adapter for the D-SUB Serial communications cable, it is important to determine which COM port the adapter has been assigned to. See p.43 "Appendix 2: COM Port Identification" for details.

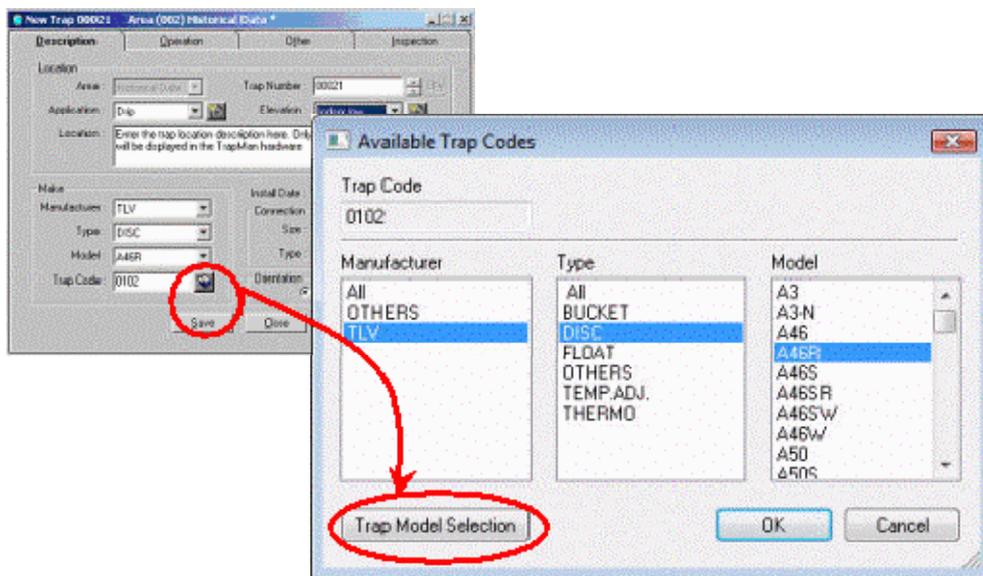
## Trap Model Selection

The Trap Model Selection dialog is used to select which models can be used with **TrapManager** and **TM**.

Models that have not been selected using this dialog are not displayed in the Trap Selection List or in the Description tab of the Master Log. They also cannot be selected on the **TMS**.

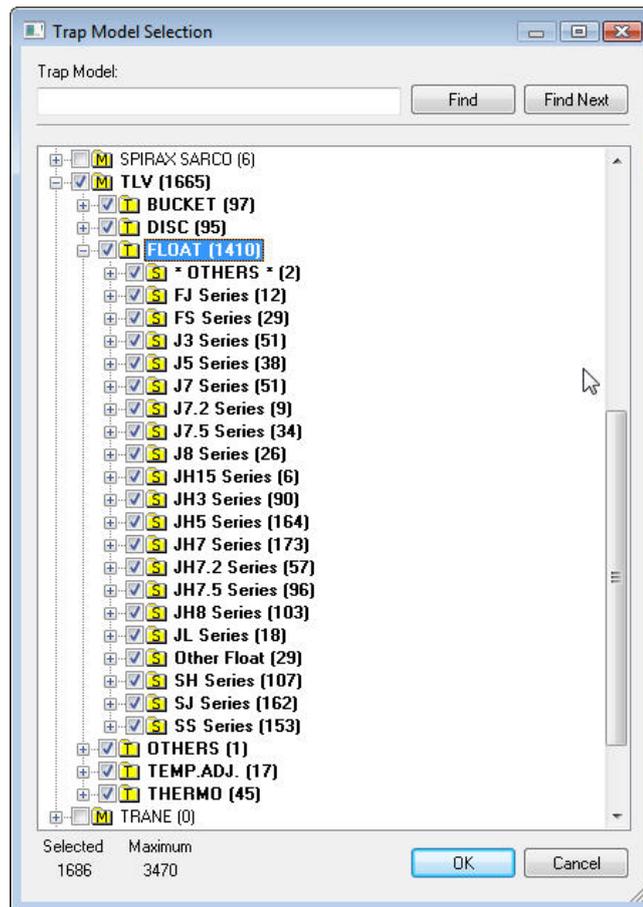
There are two ways to display the Trap Model Selection dialog.

1. In the menu, click [Settings], then [Trap Model Selection].
2. When the icon next to the Trap Code field in the Description tab of the Master Log is clicked, the Available Trap Codes window will appear. In the Available Trap Codes window, click [Trap Model Selection] to access the dialog.



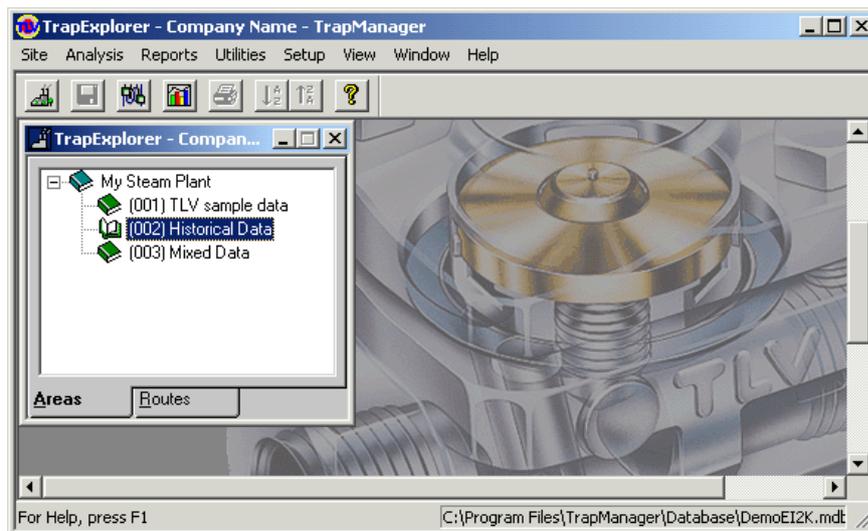
The Trap Model Selection screen consists of 3 parts:

1. Find: Enables searching by trap model name to simplify selection of specific models.
2. Selection Checkboxes: Traps are classified by manufacturer, trap type, series (TLV Free Float only) and model name in a tree structure. Clicking a check box will select all items under that branch.
3. Selection Status: The number of currently selected traps and the maximum number selectable are displayed at the bottom of the dialog.



## Create the Master Log, Prepare for the Survey and Analyze the Results

1. Create new areas and input all pertinent information about the traps in the New Trap dialog box. (One time)
2. Create the **TrapRoute**: either individual areas or a combination of traps from several areas.
3. Download the **TrapRoute** to the **TM** hardware.
4. Complete the survey.
5. Upload the completed survey to the PC for analysis.
6. Print the reports.



When **TrapManager** first starts up, it displays eight menus:

1. Site  
Includes: Open Site, Load Database, New Database, Show All Traps, Show Failed Traps, Area (Modify Area, New Area, Delete Area), Route (Modify Route, New Route, Delete Route, Print Route), Print Setup, Print Preview, Print, Exit (To display the Site box, if it is not visible on the screen, select Open Site on the menu or click the Open Site icon on the toolbar.)
2. Analysis  
Includes: New, Open
3. Reports  
Includes: Master Log, Inspection History, Fail Traps, Routes, Survey, Trap Code, Master Codes, Ranges, Units, Hardware, User Codes
4. Utilities  
Includes: Communications, Export, Import PS1 Data, Update Trap Codes
5. Setup  
Includes: Master Codes, Ranges, Fail Rate, Units, Trap Model Selection, Trap Defaults
6. View  
Includes: System Info, Customer Info, Trap Codes, Toolbar, Status Bar; If an area is open, also includes: Show Columns, Hide Column, Merge

7. Window  
Includes: Cascade, Tile, Arrange Icons

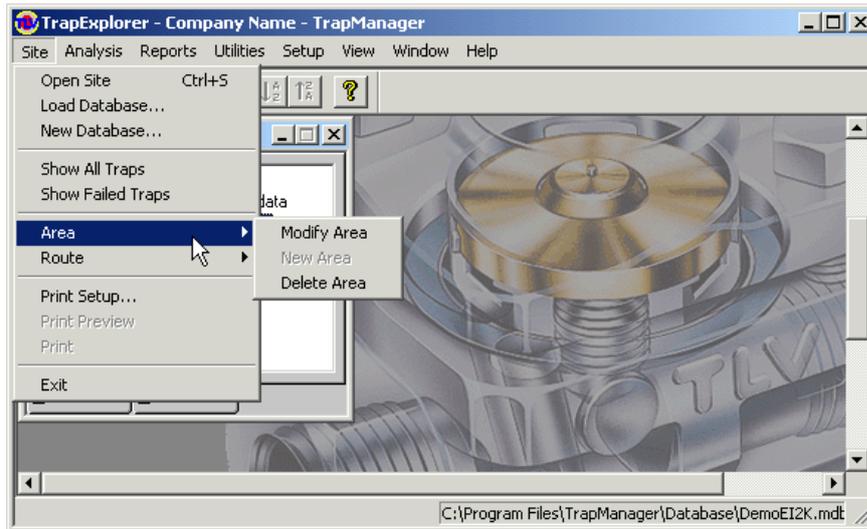
8. Help  
Includes: Help Topics, About **TrapManager**

Some of the commands in each menu may be dimmed at times, indicating that they are unavailable.

In addition, three other menus will appear on the menu bar between Site and Analysis in the following three cases:

- Area – when you open an area  
Includes: New Trap, Modify Trap, Replace Trap, Rename, Delete Trap
- Route – when you open a route  
Includes: Check All, Check None, Save Selection, Rename
- Trap – when you open a trap information box  
Includes: Save, Save Defaults

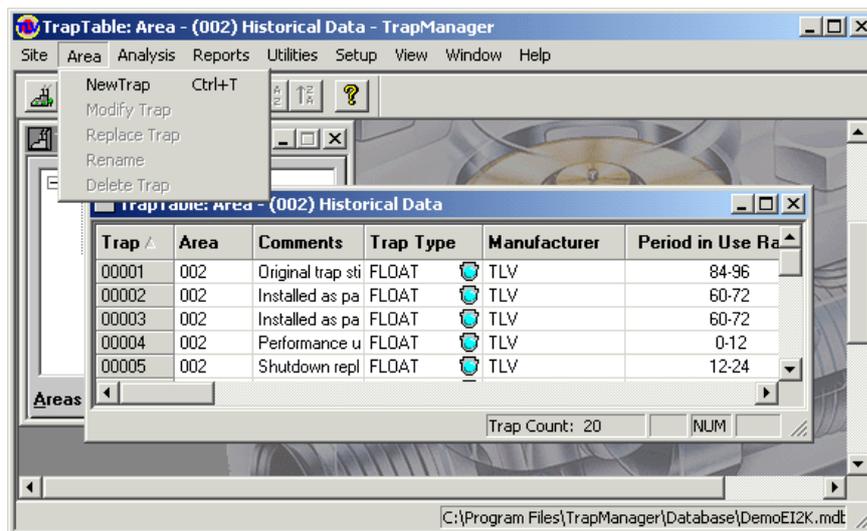
# Area and Trap Numbers



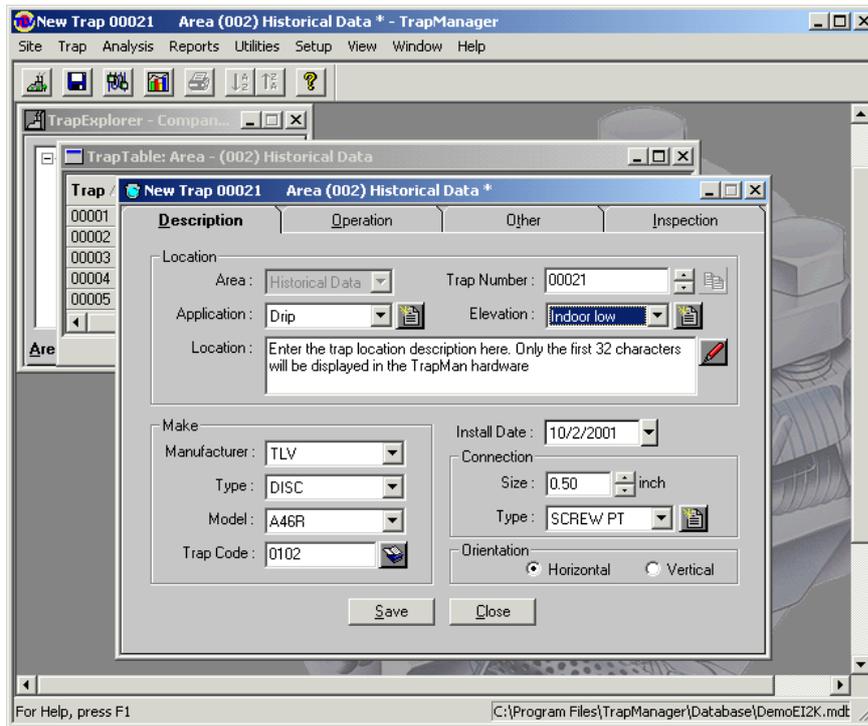
As you will begin by creating areas, make sure the Areas tab in the Site window is displayed in front. If it is not, click on the tab. The word “Areas” will appear in bold type and the tab will be displayed in front of the other tab. Choose Site > New Area and change or confirm the area number displayed in the Name and Alias fields. Click [OK] to accept the area name.

Once the new area has been created and appears in the Site menu tree, you can double-click it and start filling the empty trap table with new traps.

\* After your first survey in which failed traps are identified, a Failed Traps Reminder Table will be displayed on Start-up (unless you de-select “Show on Start-up”). This window should be closed before you add new areas.

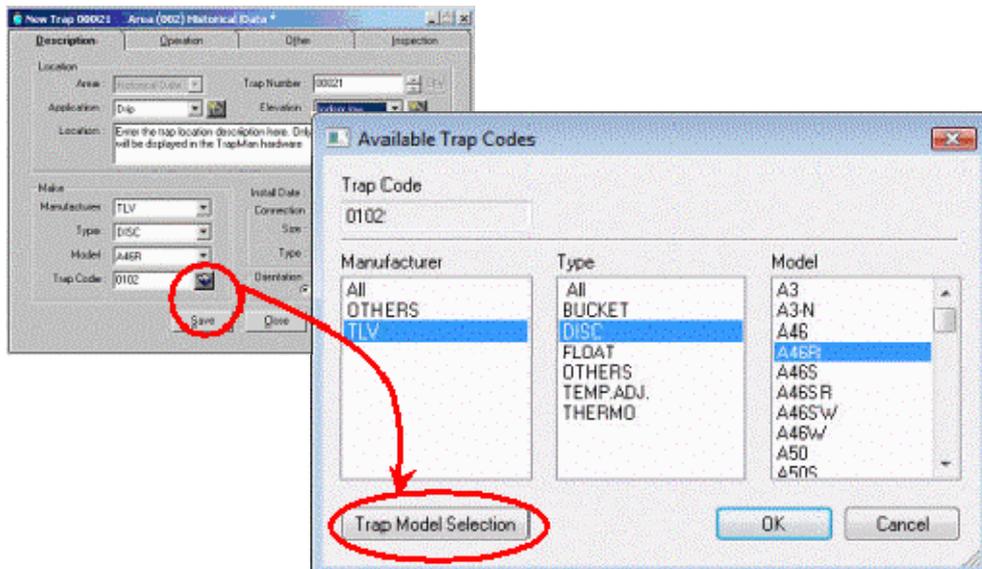


Access the trap information box by selecting Area > New Trap or by clicking the right mouse in either the Site window or in any of the trap table column headers and selecting New Trap from the pop-up menu.



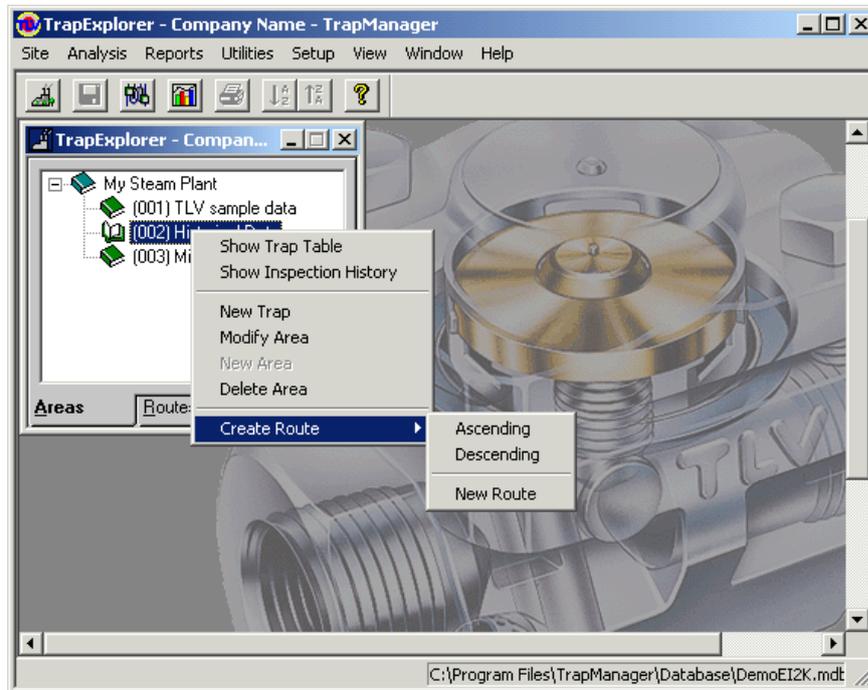
Fill in information requested on all four tabs in the trap information box completely. The Installation Date, Hours/Day and Days/Year will default to today's date, 24 and 365 respectively if no information is entered.

If the trap code you wish to select is not located in the trap selection list, you may need to use the Trap Model Selection dialog. When the icon next to the Trap Code field is clicked, the Available Trap Codes window will appear. In the Available Trap Codes window, click [Trap Model Selection] to access the dialog.



## Routes

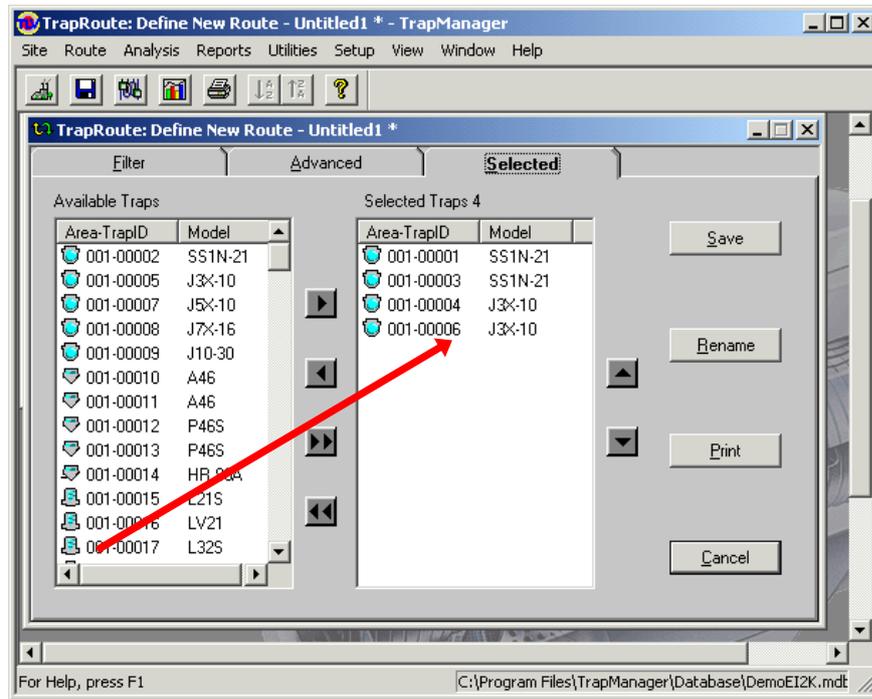
One of the major changes in **TrapManager** (as compared to its previous incarnation, PS1) is the ability to select the sequence of trap inspection by the creation of arbitrary routes for trap surveys. These routes may be confined to a single area, in numerical ascending or descending order or may go through multiple areas in whatever logical order you choose. They can be based on various criteria including application, trap type, type of failure, manufacturer, etc.



These routes, which can be as varied as each user's requirements, are created in one of two ways.

Routes through a single area listing traps in either increasing or decreasing numeric order can be created quickly and easily using Create Route (choose Create Route > Ascending or Create Route > Descending from the pop-up menu formed when right-clicking in the Site window).

Alternatively, New Route (choose Site > Route > New Route or Create Route > New Route in the pop-up menu formed when right-clicking in the Site window) allows you to create a custom route through several areas.

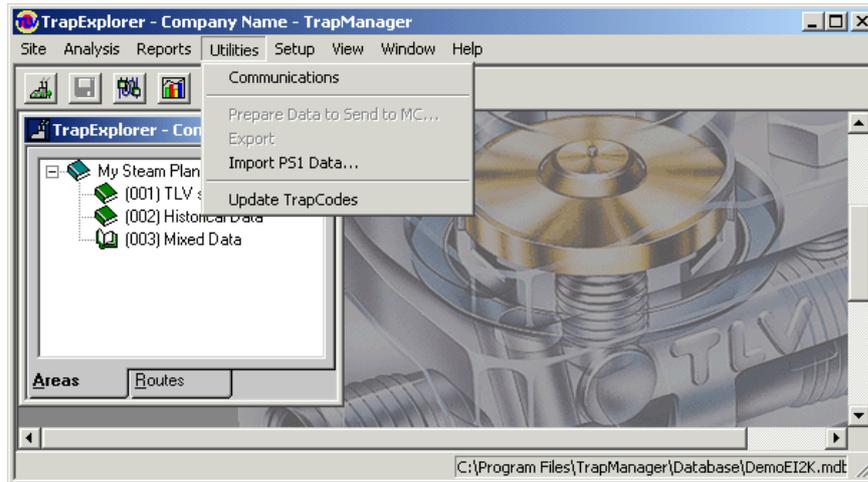


Select traps listed in the site for the new route. Use the arrow keys or drag and drop to move one, several or all traps into the new route in the desired route order.

Name, save and print the new route.

## Doing a Survey

Once the route has been created, it can be downloaded to the **TM** hardware.

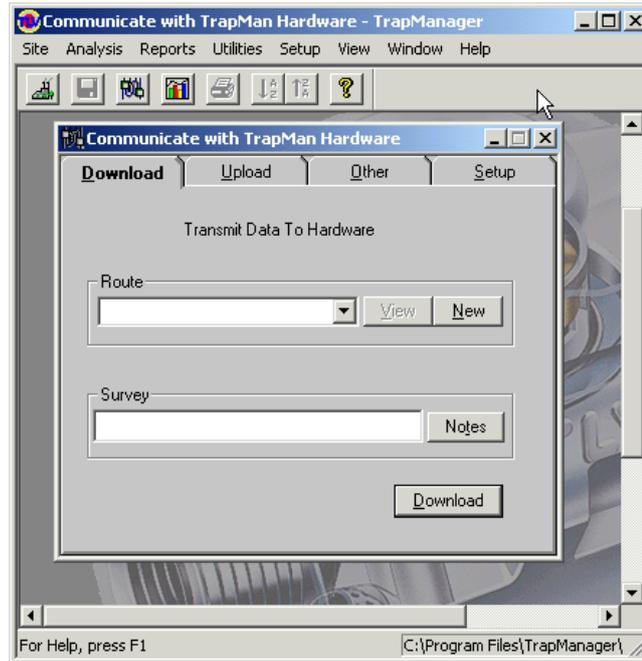


To prepare the **TM** unit for communication with the PC, follow the instructions below:

1. Connect the communications cable to an available COM port. (When using the included USB communications cable to connect the **TM5N (TM5N-EX)**, it is not necessary to install the USB driver separately as it will be installed automatically during the TrapManager installation. When using a USB to serial adapter with the D-SUB Serial communications cable to connect the **TM5 (TM5-EX)**, the driver must be installed separately. For details, refer to the page 39 "Appendix 1: USB to Serial Adapter Installation Instructions".)
2. Connect the other end of the communications cable to the **TM** hardware.
3. Turn on the **TM** hardware and press the [DATA TRANS] key.

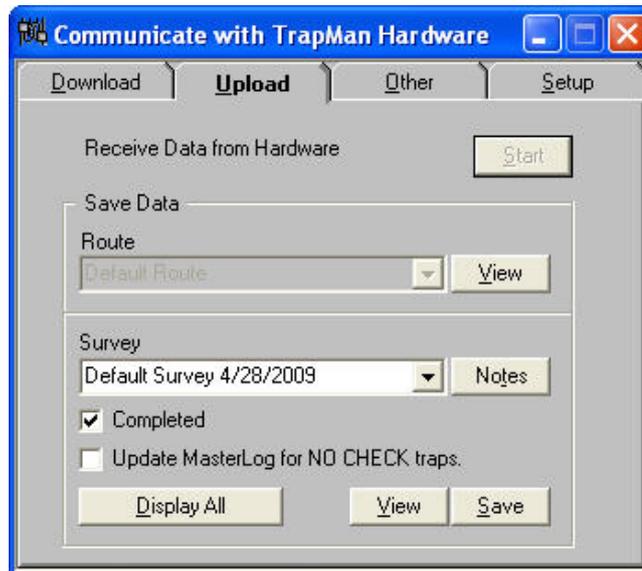
The **TM** hardware will now wait for the PC to initiate data transfer. Choose Utilities > Communications (or select the Communicate icon on the toolbar) to send and receive data to and from the **TM** hardware.

## Download



Enter the route and survey names, then click [Download] to send the data to the **TM** hardware.

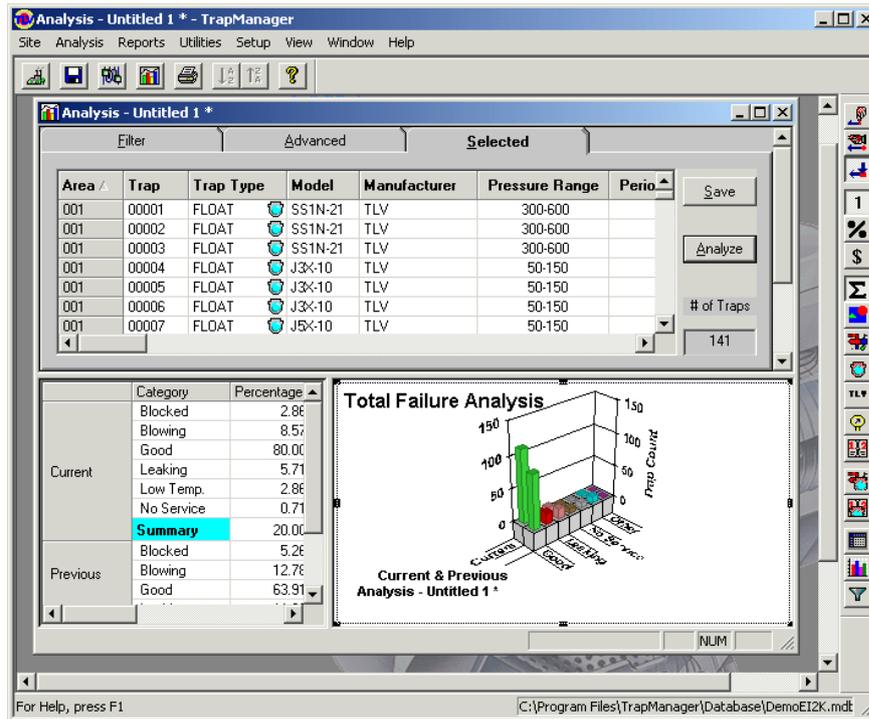
## Upload



When the survey has been completed, upload the data to the PC for analysis. Click [Start] to upload the data. The data will be updated or added to the Master Log and Inspection History records automatically.

At the time of upload, there is an option to update Masterlog for NO CHECK traps. If selected, trap records in PC are updated from the data in **TM TrapMan**. The default is not selected.

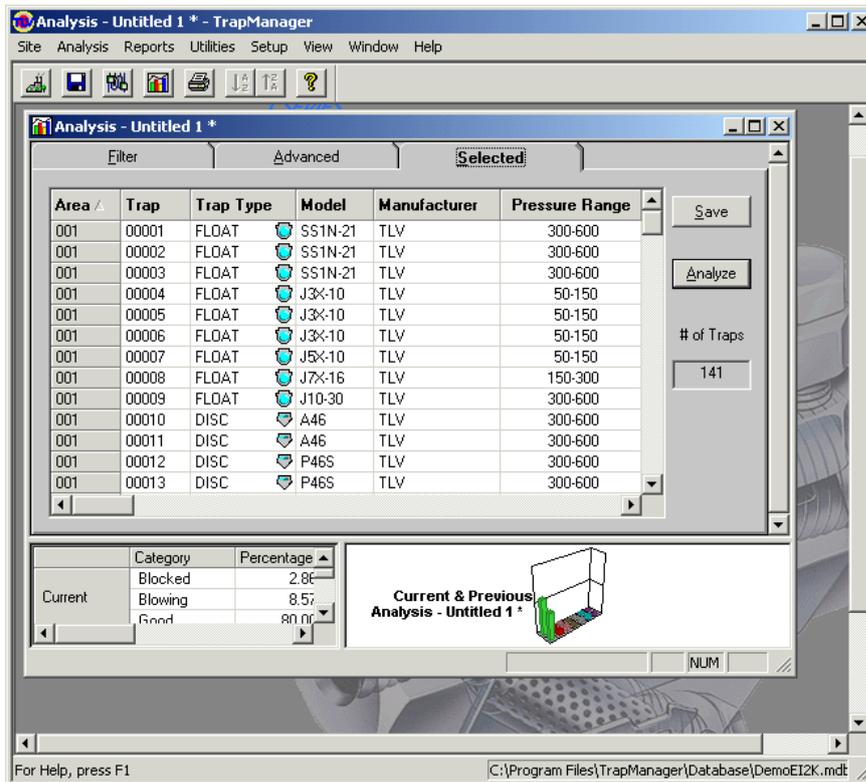
# Analyzing the Data



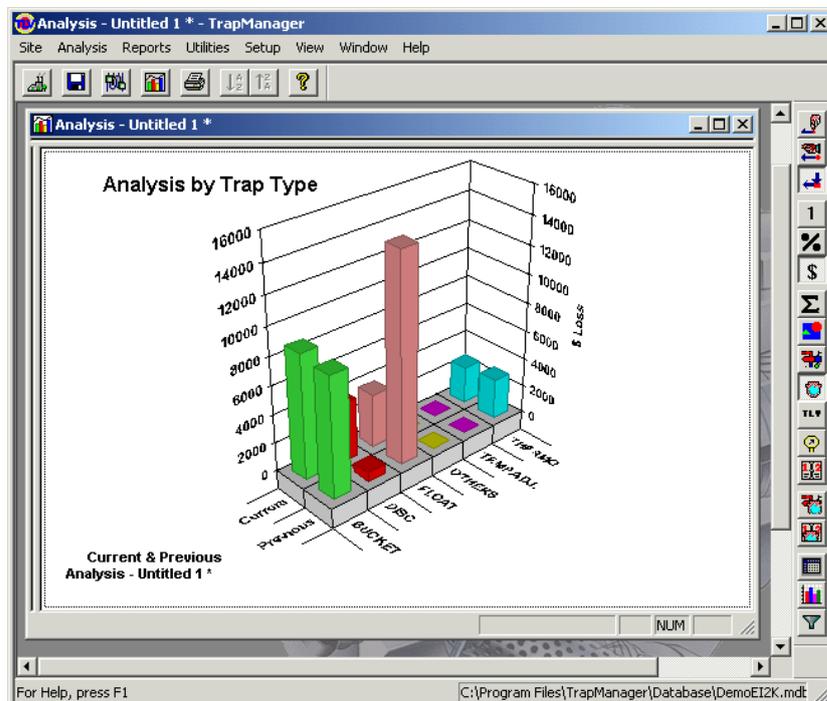
After the first survey has been completed and the data uploaded to the computer, you can analyze the data using **TrapManager's** powerful analysis functions.

To create a new analysis, choose Analysis > New. An untitled analysis dialog box will appear with the title "Analysis – Untitled 1" (you will give it a name when you save the data).

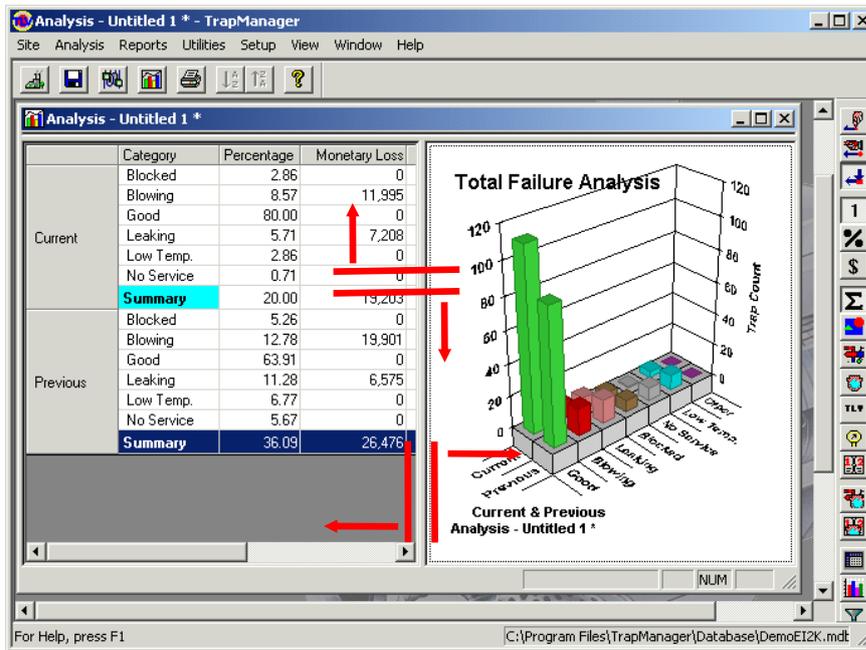
The Analysis dialog box is used to set parameters that will determine the scope of the analysis.



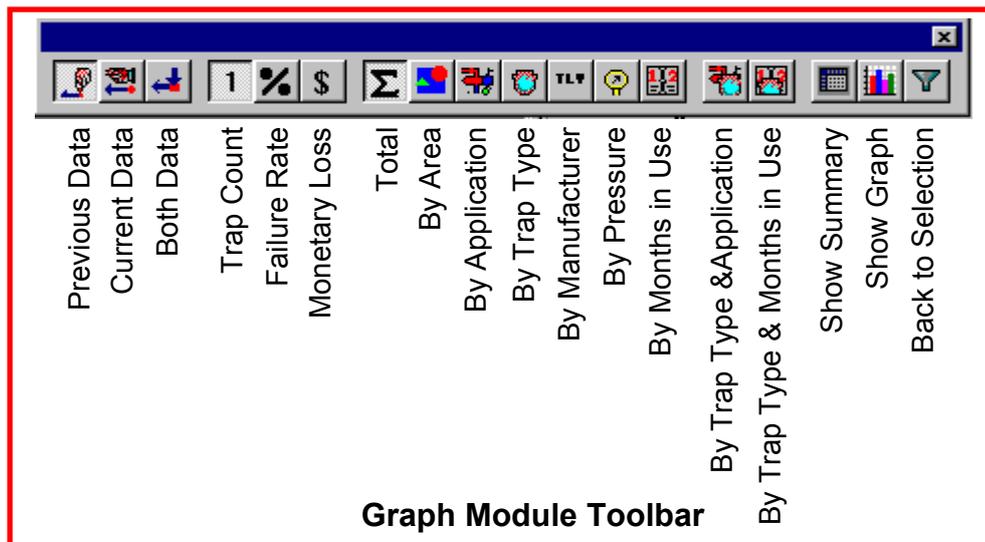
After you have set the parameters for the analysis in the Filter and Advanced tabs, click the Selected tab. This automatically causes the traps matching the criteria selected to be listed in table form.



Clicking the [Analyze] button displays a color graph based on the analysis data that you have selected. The data can be displayed in table or graph form and then printed or exported in various formats.



The graph is actually one part of a split window with three elements: the Graph module, the Summary Data module (with a table containing the data shown in the graph) and the module containing the Analysis dialog box.

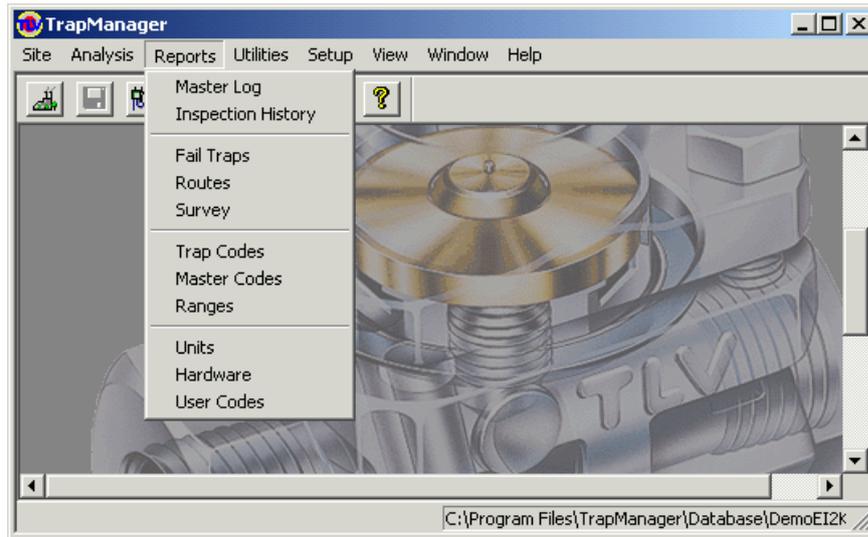


A vertical toolbar containing the above icons is located on the right-hand side of the window.

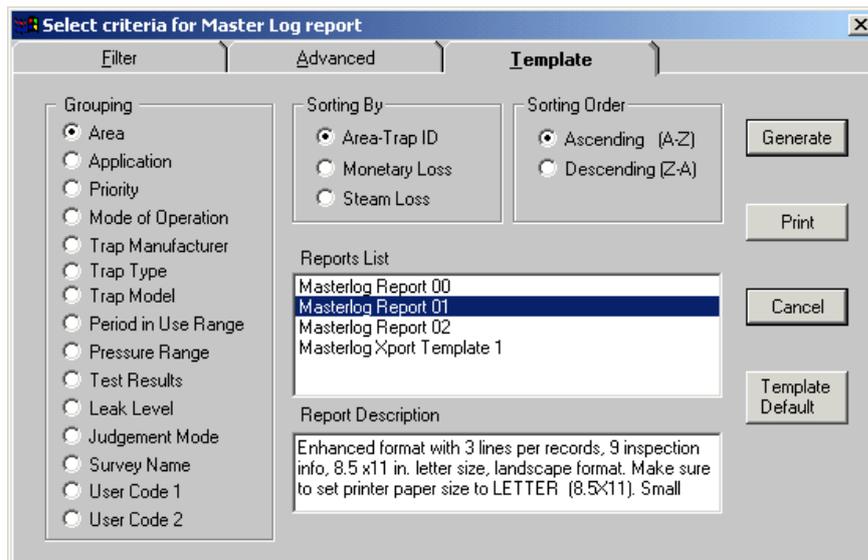
**TrapManager's** Graph module provides a great deal of flexibility in arranging and viewing data in graph form.



## Displaying and Printing Reports



Reports incorporating the data from trap surveys can be displayed or printed out in various ways using the commands in the Reports menu.



For Inspection History and Master Log reports, you can fine-tune your report by making selections from the Filter and Advanced tabs in the dialog box displayed. You can further organize the report by specifying the printing priority and order in the Templates tab.

Master Log Report

Company Name: [Redacted]  
 Address 1: [Redacted]  
 Address 2: [Redacted]  
 City Name, State Name: 072-01

Printed Date: 11/26/97  
 Page: 1 / 10

Group By: Area No.: Bezen

Area-Trap ID	Model Name Trap Type	Manufacturer Installed	Elevation Application	Priority Operation	Insp. Freq. Sun Cost	Orientation Set Temp	Pressure B. Press.	H/Day D/Vr	Condensate Rate Recovery	Connection Type Size	Trap Location
002-00001	LEK1	TLV	Indoor low	General	0	vertical	30	24	0	SCREEN	64 BLDG
	TEMP ADJ	9/1/97	Process	Continuous	841	0	0	210	No (To drain)	0.50	
002-00002	LEK1	TLV	Indoor low	General	0	horizontal	30	24	0	SCREEN	64 BLDG
	TEMP ADJ	9/1/97	Heating	Continuous	841	0	0	210	No (To drain)	0.50	
002-00003	DC10N-3	TLV	Indoor low	General	0	vertical	30	24	0	SCREEN	64 BLDG
	PLGAT	9/1/97	Disc	Continuous	841	0	0	210	No (To drain)	0.50	
002-00004	LEK1	TLV	Indoor low	General	0	vertical	30	24	0	SCREEN	64 BLDG
	TEMP ADJ	9/1/97	Heating	Continuous	841	0	0	210	No (To drain)	0.50	
002-00005	LEK1	TLV	Indoor low	General	0	vertical	30	24	0	SCREEN	64 BLDG
	TEMP ADJ	9/1/97	Heating	Continuous	841	0	0	210	No (To drain)	0.50	
002-00006	LEK1	TLV	Indoor low	General	0	vertical	30	24	0	SW	64 BLDG
	TEMP ADJ	9/1/97	Heating	Continuous	841	0	0	210	No (To drain)	0.50	
002-00007	LEK1	TLV	Indoor low	General	0	vertical	30	24	0	SCREEN	64 BLDG
	TEMP ADJ	9/1/97	Heating	Continuous	841	0	0	210	No (To drain)	0.50	
002-00008	LEK1	TLV	Indoor low	General	0	vertical	30	24	0	SCREEN	64 BLDG
	TEMP ADJ	9/1/97	Heating	Continuous	841	0	0	210	No (To drain)	0.50	this is a half shaft
002-00009	LEK1	TLV	Indoor low	General	0	vertical	30	24	0	SCREEN	64 BLDG
	TEMP ADJ	9/1/97	Heating	Continuous	841	0	0	210	No (To drain)	0.50	
002-00010	LEK1	TLV	Indoor low	General	0	vertical	30	24	0	SCREEN	64 BLDG
	TEMP ADJ	9/1/97	Heating	Continuous	841	0	0	210	No (To drain)	0.50	
002-00011	LEK1	TLV	Indoor low	General	0	vertical	30	24	0	SCREEN	64 BLDG
	TEMP ADJ	9/1/97	Heating	Continuous	841	0	0	210	No (To drain)	0.50	

Pressure: Kgf/cm<sup>2</sup>      Currency: \$      Condensate Rate: kg/hr  
 Temperature: C      Steam Cost: \$/Mwh      Steam Leakage: 1.00kg/h/Year  
 Pipe Size: mm      Inspection Frequency: Months      Monetary Loss: \$/Year

### Master Log Report A4, Landscape, 2 lines per record

Various templates for printing Inspection History, Routes and Master Log reports are available from TLV. Contact TLV for more information.

### Printing Trap Codes

Although no printed code book is provided with your **TrapMan** System, you can print out a Trap Code Report for all traps\* or for specific trap types and manufacturers. See **TrapManager** menu item Reports > Trap Code.

\* Over 100 pages when all trap codes are printed

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Fax: [60]-3-5632-7988

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Fax: [82]-(0)31-726-2195

#### **TLV INTERNATIONAL, INC.**

Japan Tel: [81]-(0)79-427-1818

Fax: [81]-(0)79-425-1167

### Manufacturer/Publisher:

#### **TLV<sup>®</sup> CO., LTD.**

881 Nagasuna, Noguchi-cho, Kakogawa, Hyogo 675-8511, **Japan**

Tel: [81]-(0)79-422-1122 Fax: [81]-(0)79-422-0112

# Appendix 1: USB to Serial Adapter Installation Instructions

(This is needed only when using the USB to serial adapter for the D-SUB serial communications cable to connect the **TM5 (TM5-EX)**).

## Installation Procedure for Windows 2000

1. The device drivers for the included USB to serial adapter are located on the **TrapManager** CD-ROM. Insert the **TrapManager** CD-ROM into your PC's CD-ROM drive before proceeding. The **TrapManager** Setup screen will automatically appear. Click [Cancel] to close this window before proceeding.

2. With the computer on, connect the USB to serial adapter to your computer.



3. When the hardware wizard comes up, click [Next >]. In the next dialog box, select "Search for a suitable driver for my device (recommended)" and click [Next >].

Be sure to have the **TrapManager** CD inserted in your CD-ROM drive.



4. Select "Specify a location" and click [Next >].

5. Click [Browse...] and select folder ?:\GUC232A and click [OK].

Note: The "?" refers to the letter of your CD-ROM drive. In most cases this is D.

6. The wizard will search the indicated location for the proper driver. Once the wizard indicates that it has found the proper driver, click [Next >].
7. The wizard will install the device driver. After the hardware wizard indicates that the installation is complete, click [Finish].

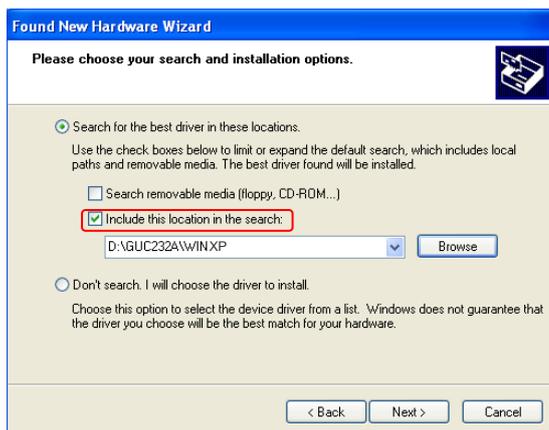
## Installation Procedure for Windows XP

1. The device drivers for the included USB to serial adapter are located on the **TrapManager** CD-ROM. Insert the **TrapManager** CD-ROM into your PC's CD-ROM drive before proceeding. The **TrapManager** Setup screen will automatically appear. Click [Cancel] to close this window before proceeding.
2. With the computer on, connect the USB to serial adapter to your computer.



3. When the hardware wizard comes up, select "Install from a list or specific location (Advanced)" and click [Next >].

Be sure to have the **TrapManager** CD inserted in your CD-ROM drive.



4. Select "Include this location in the search:". Click [Browse...] and select folder **?:\GUC232A\WINXP** and click [Next >].

Note: The "?" refers to the letter of your CD-ROM drive. In most cases this is D.

5. The wizard will locate and begin to install the proper driver. A warning dialog may appear informing that the driver "has not passed Windows Logo testing to verify its compatibility with Windows XP." Click [Continue Anyway].
6. The wizard will install the device driver. After the hardware wizard indicates that the installation is complete, click [Finish].

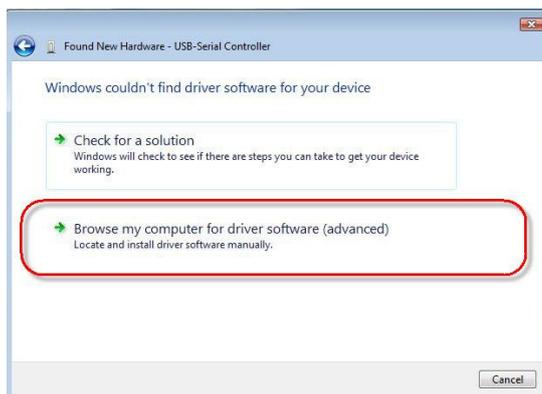
## Installation Procedure for Windows Vista (32 bit) and Windows 7 (32 bit)

1. The device drivers for the included USB to serial adapter are located on the **TrapManager** CD-ROM. Insert the **TrapManager** CD-ROM into your PC's CD-ROM drive before proceeding. The **TrapManager** Setup screen will automatically appear. Click [Cancel] to close this window before proceeding.
2. With the computer on, connect the USB to serial adapter to your computer.

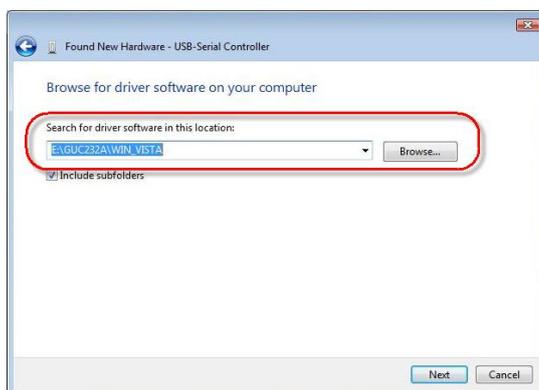


3. When [Windows needs to install driver software for your USB-Serial Controller] comes up, select [Locate and install driver software (recommended)].

Be sure to have the **TrapManager** CD inserted in your CD-ROM drive.



4. Once [Windows couldn't find driver software for your device] appears, click [Browse my computer for driver software (advanced)].



5. Once [Browse for driver software on your computer] appears, click [Browse...] and select folder

**?:\GUC232A\VISTA**

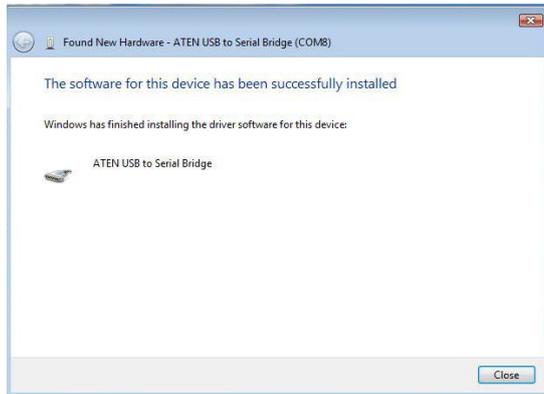
and click [Next >].

Windows 7 users should select the same folder.

Note: The "?" refers to the letter of your CD-ROM drive. In most cases this is D.



6. When [Windows can't verify the publisher of this driver software] appears, click [Install this driver software anyway].



7. The wizard will install the device driver. After the hardware wizard indicates that the installation is complete, click [Finish].

## Installation Procedure for Windows Vista (64 bit) and Windows 7 (64 bit)

The procedure to install drivers for 64 bit version of both Windows Vista and Window 7 is different. Please install the driver FIRST, then NEXT insert the USB to Serial adapter.

1. Locate and execute the 64 bit driver from ?:\GUC232A\Vista64\Setup.exe
2. Before installation, the exe checks that OS is Windows Vista 64 bit or Window 7 64 bit.
3. After installation is successful, insert the adapter to any USB connector.

## Appendix 2: COM Port Identification

(This is needed only when using the USB communications cable or the USB to serial adapter for the D-SUB serial communications cable to connect. It is not necessary to check the COM port when using the D-SUB Serial communications cable alone.)

When the hardware wizard installs the drivers for the USB cable or the USB to serial adapter, a specific COM port is assigned to the device. This information must be passed on to **TrapManager** for proper communication with the **TM** unit to take place.

To determine the COM port assigned to the USB cable or the USB to serial adapter, connect the **TM** and the PC, then double-click on the System icon in the Control Panel for Windows. From System Properties, click [Device Manager] on the Hardware tab.

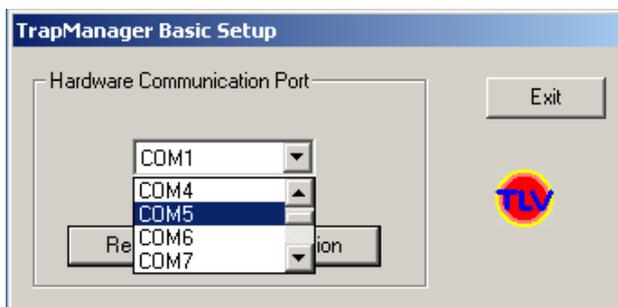
For Windows 7 (both 32 and 64 bit), [Control Panel] ->[Hardware and Sound]->[Device Manager] -> [Ports (COM & LPT)]

If using the USB communications cable the assigned COM port number will be shown next to:

Ports (COM & LPT) >  
USB Serial Port

If using the USB to serial adapter for the D-SUB Serial communications cable the assigned COM port number will be shown next to:

Ports (COM & LPT) >  
ATEN USB to Serial Cable



Select the same COM port in **TrapManager**. See p.21 “Starting **TrapManager** for the First Time” for details.