

***TransIt™***

Version 2.1

# **User's Guide**

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## Chapter 1 INTRODUCTION

### Overview

TransIt™ is a Microsoft Windows based software application that is used with Nikon surveying instruments and other third party vendors. TransIt supports the following features:

- Upload and download of data (via RS-232) between the PC and the following Nikon Total Stations and data recorders:
  - DTM-700 Series
  - DTM-400 Series
  - DTM-300
  - DTM-310
  - DR-48
- AP700 Direct Database Transfer
- Full inserting and editing capabilities (manual data input)
- Coordinate Calculation
- Complete Support for:
  - Map Projection Correction
  - Curvature and Refraction Correction
  - Distance Units ( Feet, Meters, International Feet)
  - Angle Units (Degrees, Gons, Mils6000, Mils6400)
  - Sea Level Correction
  - Vertical Angle (Zenith, Nadir, Horizon, Compass)
  - Horizontal Angle (Azimuth, Angle Right)
  - Coordinate Order

- File import of the following formats:
  - DR-48 (.D48)
  - DTM-300 (.D30)
  - DTM -310 (.D31)
  - DTM-400 (.D40)
  - DTM-700 (AP700 Database)
  - Nikon Raw (AP700 Raw)
  - ASCII Coordinate(.ASC; 2D or 3D; comma or space delimited)
- Support for the following export formats:
  - ASCII Coordinate (comma delimited; 2D & 3D)
  - ASCII Coordinate (space delimited; 2D & 3D)
  - DXF
  - Nikon Raw
  - SDR 2X
  - AP700 Database

### System Requirements

To use TransIt, you will need:

- Personal computer with a 386DX 33MHz or higher processor
- Microsoft Windows 3.1x operating system
- 4 MB of RAM (8 MB recommended)
- Typical available hard disk space required: 7 MB
- One 3.5" high-density disk drive
- VGA or higher resolution graphics card
- Microsoft Mouse or compatible pointing device

**TransIt Package Contents**

Your TransIt package should contain the following materials:

- TransIt Program Disks 3.5”  
(5.25” available upon request)
- TransIt User’s Guide
- Registration Card

***CUSTOMER SUPPORT***

If any of the above items are missing or if you require technical support, please contact your Nikon Surveying Instrument Dealer or Nikon Surveying:

Nikon Inc.  
Surveying Systems Group  
1300 Walt Whitman Road  
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Telephone: 800-826-8007  
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1170 AE Badhoevedorp  
The Netherlands

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Facsimile: +31-20-4496299



***USER REGISTRATION***

Please take a moment to fill out and mail your registration card. You'll receive important information and notification of updates from Nikon Inc., along with information about other products to help you take advantage of TransIt.

## Chapter 2 INSTALLATION

TransIt allows for two types of installation. The first install process will install all TransIt files. The second install process, installs all TransIt files, except for TransIt's online help. In the event that disk space on the target computer is limited, the user can bypass installing the help file. To install all TransIt files, see step 5a. To install TransIt without the help file, see step 5b.

---

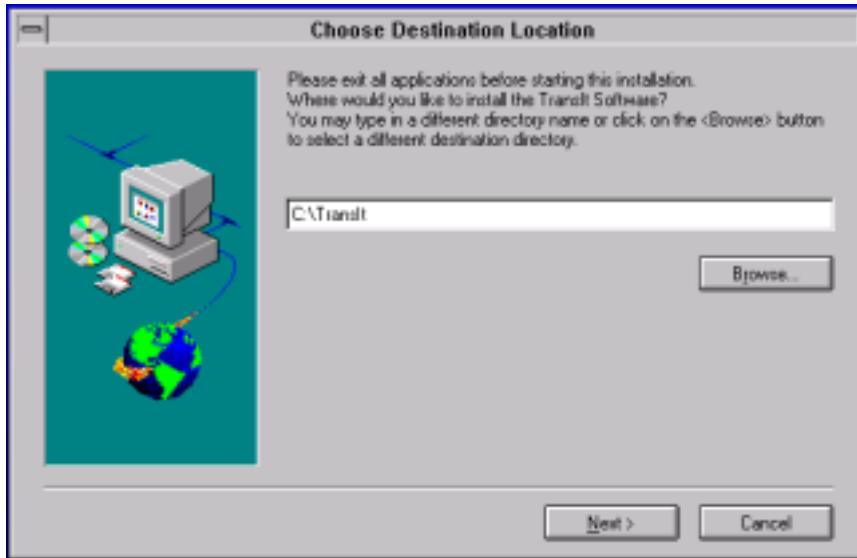
**Warning!!** *Before installing **TransIt**, please make sure that all **Virus Software** has been disabled. Once **TransIt** has been successfully installed the virus software can be enabled.*

---

To install TransIt on a Microsoft Windows platform, follow the instructions listed below:

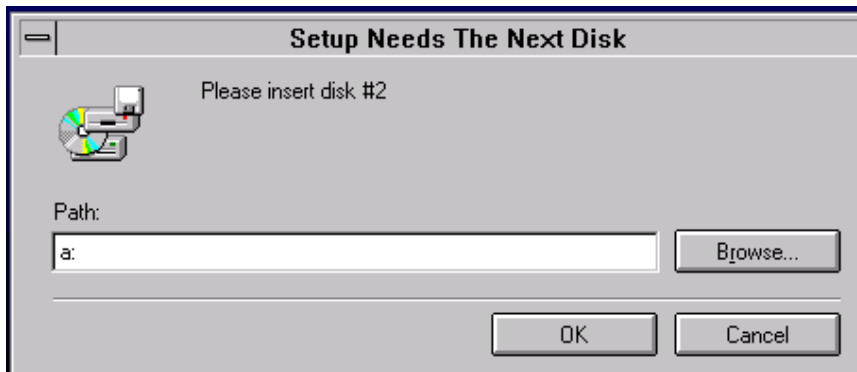
- 1) Make sure Microsoft Windows is running.
- 2) Close any other programs running, (i.e. Virus Software, Microsoft Office).
- 3) Insert Disk 1 in drive a: or b:.
- 4) From the **File** Menu, choose the **Run** option.
- 5) Install TransIt with or without the online help.
- 5a) To install the online help, at the prompt, type A:\Setup ( or B:\Setup if the floppy drive is B:\), and press the **[Enter]** key.

- 5b) To bypass installing the online help, at the prompt, type A:\Setup -fnohelp ( or B:\Setup -fnohelp if the floppy drive is B:\), and press the **[Enter]** key.
- 6) Select the destination directory to install the TransIt software to, then click on the **[Next]** button. See Figure 2-1 for an example.



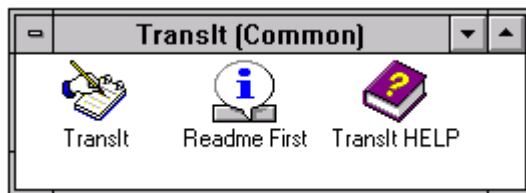
**Figure 2-1 - Choose Destination Directory**

- 7) When prompted, insert disk 2. The screen in Figure 2-2 will be displayed. Click on the **[OK]** button after you have inserted the appropriate diskette.



**Figure 2-2 - Next Disk Prompt Box**

- 8) After the installation is complete, a Windows program group similar to the one shown in Figure 2-3 will be created.



**Figure 2-3 - TransIt Program Group**

- 9) Double click the **Readme First** icon to see a list of features which have been added, modified or corrected since the previous release of TransIt.
- 10) Double click the **TransIt** icon with your mouse to start the TransIt program.

## Chapter 3 GETTING STARTED

### 3.1 Initial Startup

When TransIt is run for the first time, the user is presented with a setup utility to help configure the TransIt interface. The screen in Figure 3-1 will appear.



**Figure 3-1 - TransIt Setup Window**

The **TransIt Setup** window is used to configure communications parameters, Units, Export Options, and Miscellaneous Settings.

To learn more about each Setup option see Section 9.

Clicking the **[Help]** button on any dialog or message box will bring up the help topic associated with that box. To see a list of help topics available in TransIt, use the Help option from the TransIt menu bar.

Help on any TransIt topic can also be viewed by double clicking on the **TransIt Help** icon in the TransIt Program Group.

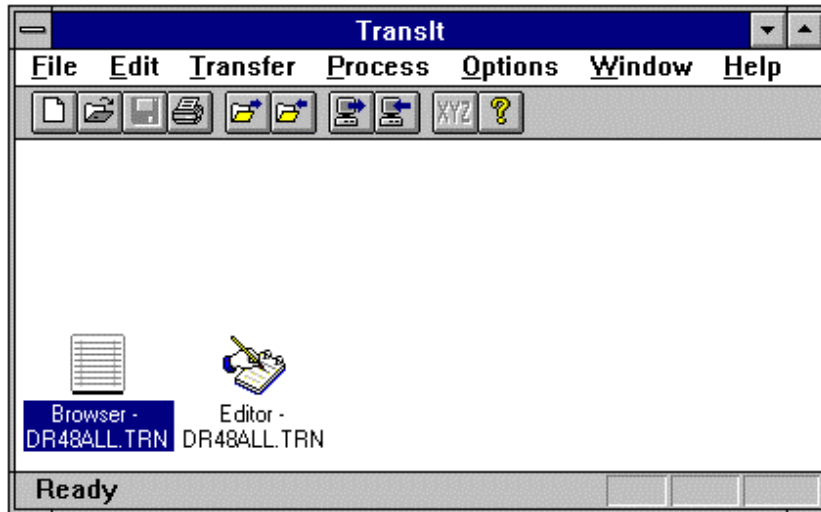
However, online help is available to the user only if it was installed.

During the installation, two subdirectories are created: **DATA** and **DOWNLOAD**. **DATA** is the default directory where TransIt looks for TransIt data files. The **DOWNLOAD** directory contains original data files which have been downloaded from an instrument or data collector into TransIt.

TransIt provides the ability to print out any open data files. A default printer must be selected in Windows' Print Manager for the printing feature to work. For more information on setting up printers in Print Manager, see the Microsoft Windows User's Guide.

## 3.2 Getting Around

Figure 3-2 contains an overview of the TransIt interface.



**Figure 3-2 - TransIt Interface**

### 3.2.1 Title Bar

The highlighted bar titled **TransIt** is referred to as the Title Bar. The Title Bar displays the name of the application. When the Title Bar is highlighted, it indicates that this application is the currently active one.

### 3.2.2 Menu Bar

The Menu Bar is located directly underneath the Title Bar and contains seven menu options. The user selects the desired menu option containing the operation to be performed.

### 3.2.3 Tool Bar

The Tool Bar is located directly underneath the Menu Bar and contains “buttons” which are shortcuts to specific menu item options. Using the buttons on the toolbar is a quick way of performing an operation without having to search for an operation hidden in one of the menu options on the Menu Bar.

### 3.2.4 Status Bar

The Status Bar is located at the bottom of the TransIt Window. It displays the name and location of the currently active job.

### 3.2.5 Client Area

The Client Area is the area of the window where icons representing open jobs are found. Once a job is opened, and its associated Browser and Editor Windows are minimized, the icons are displayed in this Client Area directly above the Status Bar. To see the window which is represented by the icon, just double click on the icon, and the window will appear.

### 3.2.6 Browser Window

The Browser Window displays a subset of data for each record in the job file in tabular format. The Browser Window allows the user to quickly locate records and examine data relative to other records in the file. See Section 4.1 for details on the Browser Window.



### 3.2.7 Editor Window

The Editor Window displays the data associated with the record currently highlighted in the Browser Window. It shows the complete record, indicating each data field associated with that particular record type. See Section 4.2 for details on the Editor Window.

### 3.3 Menu Navigation

Moving around the screen is an easy task. By simply “pointing and clicking” with the mouse, the user can select from any of the menu items on the Menu Bar.

As an alternative to using the mouse, the keyboard can be used in two different fashions. The first way is to hold the **[ALT]** key while depressing the underlined letter of the desired menu item. For example, pressing the **[ALT]** key and the letter “**F**” will bring up the File menu. Secondly, some of the operations have “shortcut keys” listed next to the operation in the submenu list. For example, pressing the **[CTRL]** key and the letter “**O**” will bring up the Open Job dialog box. Pressing these shortcut key combinations will activate that particular command.

All of the menu options invoke either Message Boxes, submenus, or other windows referred to as dialog boxes.

The dialog boxes require the user to “fill in” information required by TransIt to carry out the operation. Every dialog box has at least three buttons on it. These buttons and their corresponding actions are described below.

- **OK** button - When pressed, signifies that the user accepts the information placed in the dialog box and has agreed to complete the selected operation.
- **Cancel** button - When pressed, signifies that the user wants to cancel the whole operation.
- **Help** button - When pressed, TransIt’s online help appears for the specific operation currently in progress.

The Message Boxes require that the user either respond to a question or to simply acknowledge a statement.

### 3.4 Feature Overview

TransIt has seven menu items from which to choose. Below is a brief description of the functionality of each menu item.

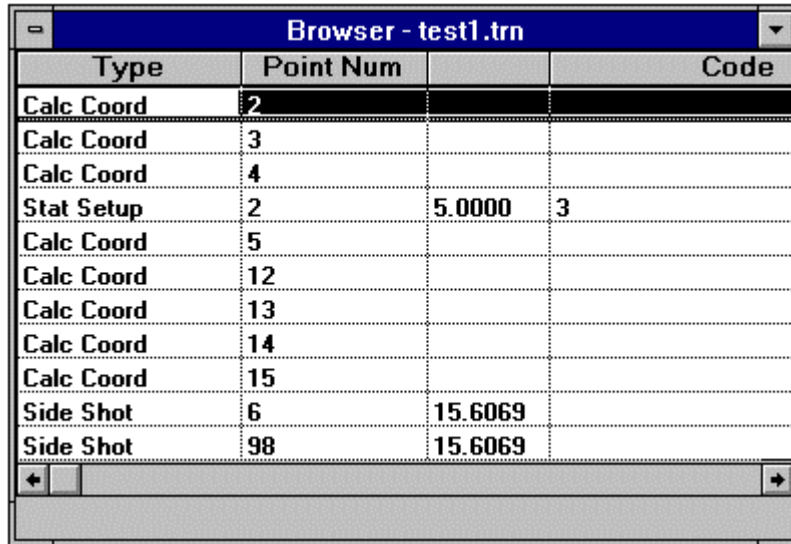
- **File** - The File menu item groups together operations that can be performed on a particular job. A job can be created, opened, saved, imported, exported or printed by choosing one of the operations in its submenu.
- **Edit** - The Edit menu item is for use only when a job is opened or imported. This feature allows the user to delete or undelete records from the active data file. Additionally, records can be inserted or appended to the active data file.
- **Transfer** - The Transfer menu item is used to transfer data between the data recorder and the PC in either direction.
- **Process** - The Process Menu options are used in coordinate calculation. After the calculations are performed, the user can review the results of the coordinate calculation by reviewing the log available under this menu item.
- **Options** - The Options Menu contains many settings which can be modified by the user during a TransIt session. These settings affect the serial communications, export options, and the coordinate calculation algorithms. At any time during the TransIt session, the user can see what settings have been selected for the active job by looking at the job summary found on the Options Menu.

- **Window** - The Window menu gives the user the ability to arrange the icons currently on the screen or to select a window to appear on “top” of the other windows.
- **Help** - The Help menu will bring up the online help available for the TransIt application. It also lists the addresses, phone numbers and fax numbers for Nikon Technical Support.

## Chapter 4 TRANSIT COMPONENTS

### 4.1 Browser Window

The purpose of the Browser Window is to show a subset of data containing the most important information for each record. It is intended to minimize the amount of extraneous information presented on the screen. See Figure 4-1 for an example of the Browser Window.



| Type       | Point Num |         | Code |
|------------|-----------|---------|------|
| Calc Coord | 2         |         |      |
| Calc Coord | 3         |         |      |
| Calc Coord | 4         |         |      |
| Stat Setup | 2         | 5.0000  | 3    |
| Calc Coord | 5         |         |      |
| Calc Coord | 12        |         |      |
| Calc Coord | 13        |         |      |
| Calc Coord | 14        |         |      |
| Calc Coord | 15        |         |      |
| Side Shot  | 6         | 15.6069 |      |
| Side Shot  | 98        | 15.6069 |      |

**Figure 4-1 - Browser Window**

The Browser Window is a separate window within TransIt which displays a subset of each record in a spreadsheet format. Each column may contain different information based on record type. The column headings will appear directly under the Title Bar, and they will dynamically change as different record types are highlighted. To modify the data in any entry on the Browser Window, the Editor Window must be used. If the Editor Window is not currently opened, double click on any record in the Browser Window, and the Editor Window will appear.

As data is modified in the Editor Window, it will be dynamically updated in the Browser Window if that field exists in the Browser Window.

To insert a new record into the active job, the Browser Window must be used. Place the cursor at the location in the Browser Window where the new record will be inserted. The record in the current location will be moved down by one slot to make room for the newly inserted record. See Chapter 6 for more information on inserting records.

Records can be marked for deletion by first selecting records in the Browser Window and then using the **Edit Menu** on the menu bar or the **[DELETE]** key on the keyboard. See Chapter 6 for more information on deleting and undeleting records.

To select a range of records in the Browser, hold the **[SHIFT]** key while selecting the first and last record of the chosen range with the mouse. To select a group of non-contiguous records, hold the **[CTRL]** key while individually selecting each record with the mouse. Any record can be deselected by holding the **[CTRL]** key while clicking on a selected record.

To view the complete data record from the active job, the user can double click on a record in the Browser Window, or single click on the record and press the **[ENTER]** key. Either of these operations will bring up the Editor Window. Once the Editor Window is opened, the user only needs to select a record in the Browser Window by single clicking on it to view the complete record in the Editor Window. See Section 4.2 for further details on the Editor Window.

#### 4.1.1 Record Format Fields

Below is a list of record types and associated data fields which are displayed in the Browser Window of TransIt.

##### **Coordinate Records**

Manual Input

Uploaded Coordinate

Resection Coordinate

Calculated Coordinate

Uploaded Control Point

Manual Control Point

*Record Type, Point Number, Code*

##### **Coordinate and Raw Records**

Sideshot

Control Point

Stakeout

*Record Type, Point Number, Height of Target,  
Code*

##### **Other Records**

Station Setup

*Record Type, Occupied Point Number, Height of  
Instrument, Backsight Point Number.*

Face1/Face2

*Record Type, Point Number*

Comment

*Record Type, Comment Description*

In addition to the above record types, an Invalid Record type can appear if the record contains invalid data. An Invalid Record is one that does not match the record format utilized in the associated data recorder.

### 4.1.2 Color Coding

Certain records in the Browser Window will appear in different colors. The color coding scheme shown below is based on the record type.

|                   |                             |
|-------------------|-----------------------------|
| Black Records -   | Valid records               |
| Blue Records -    | Comment records             |
| Red Records -     | Records marked for deletion |
| Magenta Records - | Invalid records             |



## 4.2 Editor Window

The Editor Window displays the data associated with the record currently highlighted in the Browser Window. It shows the complete record, indicating each data field associated with that particular record type. See Figure 4-2 for an example of the Editor Window.

| Editor - CDAVE.TRN |            |
|--------------------|------------|
| Side Shot          |            |
| Point Num          | 401        |
| Northing           | 9812.5392  |
| Easting            | 20605.0924 |
| Elevation          | 500.4102   |
| HT                 | 5.2000     |
| Horiz Angle        | 123.0222   |
| Vert Angle         | 89.3730    |
| Slope Dist         | 202.8840   |
| Timestamp          |            |
| Code               | FC         |

Next Prev First Last

**Figure 4-2 - Editor Window**

This window displays the record type in the upper left corner of the window, and each field of that record type is displayed along the left side with the associated information.

The display of data in the Editor Window reflects the coordinate order selection chosen by the user in **Options|Settings**.

Use the buttons on the bottom of the Editor Window to quickly move through the file without having to go back to the Browser Window.

**Prev** button - Single clicking on this button will move the highlight bar from the current record to the previous record.

**Next** button - Single clicking on this button will move the highlight bar from the current record to the next record.

**First** button - Single clicking on this button will move the highlight bar from the current record to the first record.

**Last** button - Single clicking on this button will move the highlight bar from the current record to the last record.

---

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*Note: When the angle unit is “Degrees”, the angle data displayed in the Editor Window is in the form of DDD.MMSS.*

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The Editor Window allows for any field to be modified. If invalid data is entered in any field, the user will be notified. The Browser Window will dynamically be updated to reflect the change(s) in the Editor Window; that is if the field being updated is a field which appears in the Browser Window.

### 4.2.1 Record Format Fields

Below is a list of record types and associated data fields which are displayed in the Editor Window of TransIt.

#### **Coordinate Records**

Manual Input

Uploaded Coordinate

Resection Coordinate

Calculated Coordinate

*Point Number, Point ID, Northing, Easting, Elevation, Code.*

Uploaded Control Point

Manual Control Point

*Point Number, Northing, Easting, Elevation, Code.*

#### **Coordinate and Raw Records**

Sideshot

*Point Number, Northing, Easting, Elevation, Height of Target, Slope Distance, Horizontal Angle, Vertical Angle, Timestamp, Code.*

Control Point

*Point Number, Point ID, Northing, Easting, Elevation, Height of Target, Slope Distance, Horizontal Angle, Vertical Angle, Timestamp, Code.*

Stakeout

*Point Number, Original Point Number, Northing, Easting, Elevation, Height of Target, Slope Distance, Horizontal Angle, Vertical Angle, Timestamp, Code.*

**Other Records**

## Station Setup

*Station Point Number, Station ID, Height of Instrument, Backsight Point Number, Backsight ID, Reference Azimuth, True Azimuth.*

## Face1/Face2

*Point Number, Slope Distance, Horizontal Angle, Vertical Angle, Timestamp.*

## Comment

*Comment*

### 4.3 Record Format Matrix

Tables 4-1 through 4-4 show the scheme used to map the input data records to TransIt's internal record types. See the keys below for a description of the acronyms used in these tables.

#### Key of TransIt Internal Record Types

|                     |                             |
|---------------------|-----------------------------|
| ST - Station Setup  | MP - Manual Point           |
| CP - Control Point  | UC - Uploaded Control Point |
| SS - Sideshot       | MC - Manual Control Point   |
| SO - Stakeout       | CO - Comment                |
| RE - Resected Point | F1/F2 - Face 1/Face 2 Point |
| UP - Uploaded Point |                             |

**Key of DR48 Internal Record Types**

OP - Occupied Point  
 TP - Traverse Point  
 TR - Topo Point - Raw and Coordinate Data  
 TO - Topo Point - Coordinate Data only  
 MI - Manually Input Coordinate Point  
 SS - Sideshot Point  
 NO - Note Record  
 UP - Uploaded Coordinate Record  
 BS - Backsight Record  
 MU - Multiple Reading  
 RS - Radial Stakeout Record  
 RE - Resected Record

**TransIt Internal Record Types**

|    | ST | CP | SS | SO | RE | CC | UP | MP | UC | MC | CO | F1/F2 |
|----|----|----|----|----|----|----|----|----|----|----|----|-------|
| OP | X  |    |    |    |    |    |    |    |    |    |    |       |
| TP |    | X  |    |    |    |    |    |    |    |    |    |       |
| TR |    |    | X  |    |    |    |    |    |    |    |    |       |
| TO |    |    |    |    |    | X  |    |    |    |    |    |       |
| MI |    |    |    |    |    |    |    | X  |    |    |    |       |
| SS |    |    | X  |    |    |    |    |    |    |    |    |       |
| NO |    |    |    |    |    |    |    |    |    |    | X  |       |
| UP |    |    |    |    |    |    | X  |    |    |    |    |       |
| BS |    |    | X  |    |    |    |    |    |    |    |    |       |
| MU |    |    |    |    |    |    |    |    |    |    |    | X     |
| RS |    |    |    |    |    | X  |    |    |    |    |    |       |
| RE |    |    |    |    | X  |    |    |    |    |    |    |       |

**Table 4-1 - DR-48 and TransIt Record Types**

**Key of DTM300 Internal Record Types**

Angle - Raw Data Record  
 Measure - Coordinate Record (Measurement)  
 Input - Coordinate Record (Input)  
 Upload - Coordinate Record (Upload)

**TransIt Internal Record Types**

|         | ST | CP | SS | SO | RE | CC | UP | MP | UC | MC | CO | F1/F2 |
|---------|----|----|----|----|----|----|----|----|----|----|----|-------|
| Angle   |    |    | X  |    |    |    |    |    |    |    |    |       |
| Measure |    |    |    |    |    | X  |    |    |    |    |    |       |
| Input   |    |    |    |    |    |    |    | X  |    |    |    |       |
| Upload  |    |    |    |    |    |    | X  |    |    |    |    |       |

**Table 4-2 - DTM300 and TransIt Record Types****Key of DTM400/DTM310 Internal Record Types**

Ver - Version Control Record  
 STPT - Station Point Record  
 STCO - Station Coordinate Record  
 CO - Collection Point Record  
 COCO - Collection Point Coordinate Record  
 UP - Upload Coordinate Record

**TransIt Internal Record Types**

|      | ST | CP | SS | SO | RE | CC | UP | MP | UC | MC | CO | F1/F2 |
|------|----|----|----|----|----|----|----|----|----|----|----|-------|
| Ver  |    |    |    |    |    |    |    |    |    |    | X  |       |
| STPT | X  |    |    |    |    |    |    |    |    |    |    |       |
| STCO |    |    |    |    |    |    |    | X  |    |    |    |       |
| CO   |    |    | X  |    |    |    |    |    |    |    |    |       |
| COCO |    |    |    |    |    | X  |    |    |    |    |    |       |
| UP   |    |    |    |    |    |    | X  |    |    |    |    |       |

**Table 4-3 - DTM400/DTM310 and TransIt Record Types**

**Key of Nikon Raw Record Types**

ST - Station Setup  
 CP - Control Point  
 SS - Sideshot  
 SO- Stakeout  
 RE - Resected Point  
 UP - Uploaded Point  
 MP - Manual Point  
 UC - Uploaded Control Point  
 MC - Manual Control Point  
 CO - Comment  
 F1/F2 - Face1 / Face 2 Point

**TransIt Raw Record Types**

|       | ST | CP | SS | SO | RE | CC | UP | MP | UC | MC | CO | F1/F2 |
|-------|----|----|----|----|----|----|----|----|----|----|----|-------|
| ST    | X  |    |    |    |    |    |    |    |    |    |    |       |
| CP    |    | X  |    |    |    |    |    |    |    |    |    |       |
| SS    |    |    | X  |    |    |    |    |    |    |    |    |       |
| SO    |    |    |    | X  |    |    |    |    |    |    |    |       |
| RE    |    |    |    |    | X  |    |    |    |    |    |    |       |
| CC    |    |    |    |    |    | X  |    |    |    |    |    |       |
| UP    |    |    |    |    |    |    | X  |    |    |    |    |       |
| MP    |    |    |    |    |    |    |    | X  |    |    |    |       |
| UC    |    |    |    |    |    |    |    |    | X  |    |    |       |
| MC    |    |    |    |    |    |    |    |    |    | X  |    |       |
| CO    |    |    |    |    |    |    |    |    |    |    | X  |       |
| F1/F2 |    |    |    |    |    |    |    |    |    |    |    | X     |

**Table 4-4 - Nikon Raw and TransIt Record Types**



## Chapter 5 FILE MENU

The **File Menu** contains options related to a job file. The user can create a new job, open an existing job, save a currently active job, or choose to import a job file other than a TransIt job. In addition, the user can export or print a job currently opened in the Browser Window. Any of these options can occur by selecting the desired option from the **File Menu**. See Figure 5-1 for an example of the **File Menu** item.

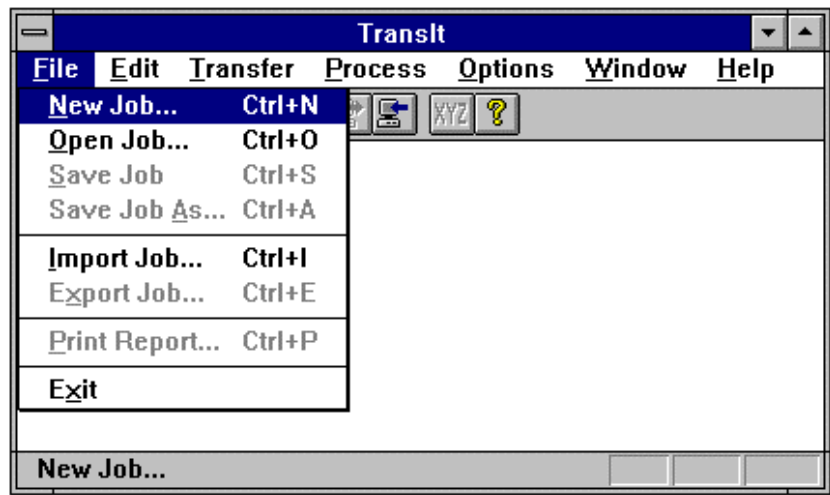


Figure 5-1 - File Menu

### Browser Window Job Names

TransIt has two methods of retrieving data from a file: opening and importing. Once the data is retrieved from the job file, it is viewed in the Browser and Editor Windows. At this point, the name of the job file in the Browser Window now carries an extension of .trn, regardless of whether the file has been opened or imported. See Sections 5.2 and 5.4, respectively, for more information on opening and importing a job.

## 5.1 New Job

To create a new job, use the **New Job** option in the **File Menu**. Once selected, the user is prompted with a **Units** dialog box. The user must select the angle and distance units of choice for the new job. See Figure 5-2 for an example of the **Units** dialog box. The settings currently selected in **Options|Settings** are also applied to the newly created job.

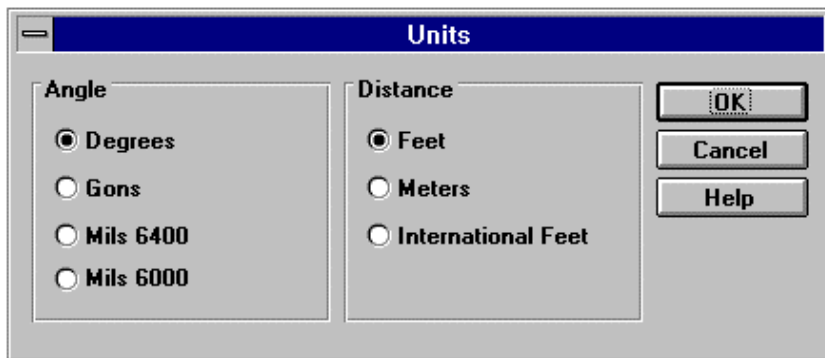


Figure 5-2 - Units Dialog Box

In order to manually input records to this empty job, use the **Insert Record** option found in the **Edit Menu**. See Section 6.3 for more information on inserting records into a job.

Upon creation of this new job, TransIt automatically assigns it a name of jobxx.trn, where xx is the next available number for that session. Upon saving this file, TransIt prompts the user for a valid name with which to save the file. For more information on saving jobs, see Section 5.3.

The **Units Dialog Box** is also used when importing a file into TransIt and when transferring a file from a data recorder to the PC. During both operations, the user is telling TransIt how to interpret the data.

## 5.2 Open Job

To open a TransIt job, select **File|Open Job** from the Menu Bar. The user must provide information in the **Open Job** window so TransIt can locate the specified file. By default, TransIt files are stored in the DATA directory. This operation will load the data into the Browser and Editor Windows.

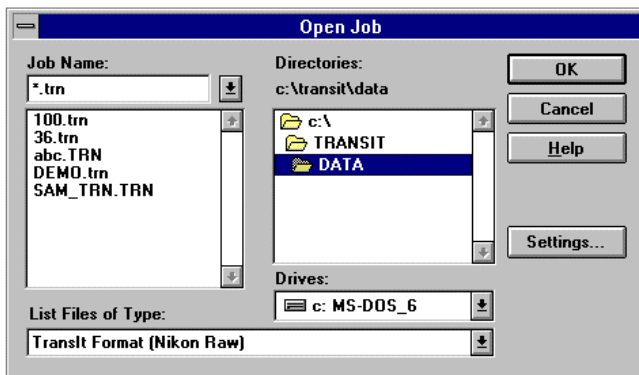
A TransIt job is one that is created automatically after the user either imports or downloads a file from any of the following instruments: DR-48, DTM-300, DTM-310, DTM-400, DTM700. An ASCII file or a Nikon Raw file can also be imported.

---

*Note: The format of a TransIt file is identical to that of a Nikon Raw or AP700 Nikon Raw Data File.*

---

See Figure 5-3 for an example of the Open Job Dialog Box.



**Figure 5-3 - Open Job Dialog Box**

In choosing the **File|Open Job** option, the settings which are currently selected in the **Options|Settings** Dialog Box will be changed to match those of the data file being read in.

See Section 9.3 for more information on settings.

---

*Note:* When opening a data file by using **File/Open Job**, the user does not have the option of changing the angle or distance units. The TransIt file is retrieved in the same units in which it was stored.

To modify the units, the user must import the original file using **File/Import Job**, and at that time, the user can select the units by clicking on the **Units** button on the **Import Job Dialog Box**. See Section 5.4 for more information on importing a file.

---

- **Job Name** - The Job Name selection box is where the name of the TransIt file to be opened is entered. A default extension appears in the Job Name box based on the selection highlighted in the **List Files of Type** box. Note that this is only a default extension, and can be changed by the user to any desired, valid extension.

Once a new wildcard and extension are placed in the Job Name box and the [ENTER] key is pressed, the new entry is added to the box with the underlined down arrow, next to the Job Name box. This list of recently used extensions has a maximum of five extensions; however, it is a scrolling list, so the oldest extension in the list is overwritten each time to make room for the newly added extension.

To use an extension that has already been used during the current TransIt session, just click on the box with the underlined down arrow, located next to the Job Name box. Once selected, this extension will appear in the Job Name box.

A list of files appears directly below the Job Name box. This list of files matches the file extension found in the Job Name box for the files in the current directory.

- **List Files of Type** - contains a list of available file types from which to choose. Changing the file type causes the wildcard Job Name for that type to appear in the **Job Name** dropdown box, and the files matching that extension appear in the list box under the selected job name. Note that for the Open Job operation, only one file type can be opened in this dialog box: TransIt format (Nikon Raw).
- **Directories** - This area displays the current directory and allows the user to select the location of the opened files.
- **Drives** - This box displays the current drive specification and allows the user to select the drive of the opened files.

When opening a file, TransIt automatically tries to perform coordinate calculation on the file. If any duplicate points are found in the file, the user is presented with a series of options for resolving the conflict. For more information on coordinate calculation, see Sections 8.1 and 8.2.

### 5.3 Save Job / Save Job As

After editing, deleting, inserting or appending data in a job, the **Save Job** menu option is enabled. Selecting this option automatically saves data to the same file currently active in the Browser Window.

The **Save Job As** option is enabled even if the file has not been modified. The user can save the changes to the current file or to a file with another name. When saving to a new Job Name, the new file now appears in the **Browser** and **Editor** windows and the old file is closed. When selecting **Save Job As**, the **Save As** window appears, which can be seen in Figure 5-4. This window requires input from the user as defined below.

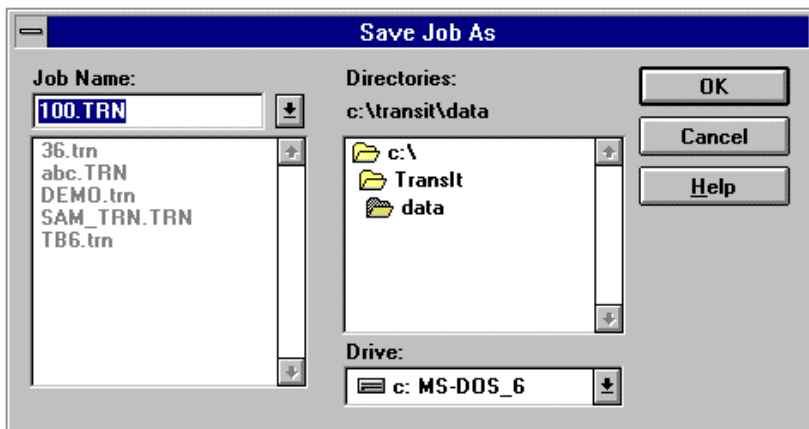


Figure 5-4 - Save Job As Dialog Box

- **Job Name** - The **Job Name** box contains the Job Name selected for the currently active file. The box containing the underlined down arrow contains a list of extensions previously selected by the user. Any wildcard file extensions are added to this box.

When naming a file, if a filename without an extension is entered, the default extension will be appended. However, if no extension is desired, placing a dot after the filename will yield a Job Name with no extension.

The list of files directly below the **Job Name** box contains the files found in the current directory that match the wildcard in the **Job Name** box.

- **Directories** - This area displays the current directory and allows the user to select the location of the newly saved file.

---

***Warning!!***    *When selecting the directory path to place the saved file, be sure that the directory path listed under the word “Directories” in the **Save As** window is the desired destination path.*

---

- **Drives** - This box displays the current drive specification and allows the user to select the drive of the newly saved file.

## 5.4 Import Job

To retrieve data from a job that is not in TransIt format, choose the **File|Import Job** option from the menu bar. The user must provide information in the **Import Job** window so TransIt can locate the specified file. As a default, the **Import Job** option looks for files in the DOWNLOAD directory. This is due to the fact that when files are downloaded from an instrument to the PC, they are placed in the DOWNLOAD directory. This operation will load the data into the Browser and Editor Windows in TransIt format. See Figure 5-5 for an example of the **Import Job** Dialog Box.

TransIt can import and process the Data Formats found in Table 5-1. This table also lists the associated file extension.

| Data Format                                     | Extension |
|---|-----------|
| DR-48 All Format                                | *.D48     |
| DTM-300 Format                                  | *.D30     |
| DTM-310 Format                                  | *.D31     |
| DTM-400 Format                                  | *.D40     |
| DTM-700 AP700 Database Format                   | *.dbm     |
| ASCII Coordinate 2D/3D comma or space delimited | *.asc     |
| Nikon Raw                                       | *.raw     |

**Table 5-1 - Data Formats and Extensions**



When importing data files of the above types, any extension can be used. As a default, TransIt uses the extensions found in Table 5-1. TransIt imports data files based on the selected Data Format, not the file extension provided by the user.

When importing an ASCII Coordinate file, TransIt supports both 2D and 3D data files, in addition to comma or space delimited files. The following combinations are valid:

### **Space delimited**

point # X Y  
point # X Y Z  
point # X Y Z Code  
point # X Y Code

### **Comma delimited**

point #, X, Y  
point #, X, Y, Z  
point #, X, Y, Z, Code  
point #, X, Y,  
point #, X, Y, Z,  
point #, X, Y, Code

---

---

**Warning!!** *If the data file being imported is a 2D data file and has codes which are all numeric, then TransIt will interpret these numeric codes as elevations.*

---

---

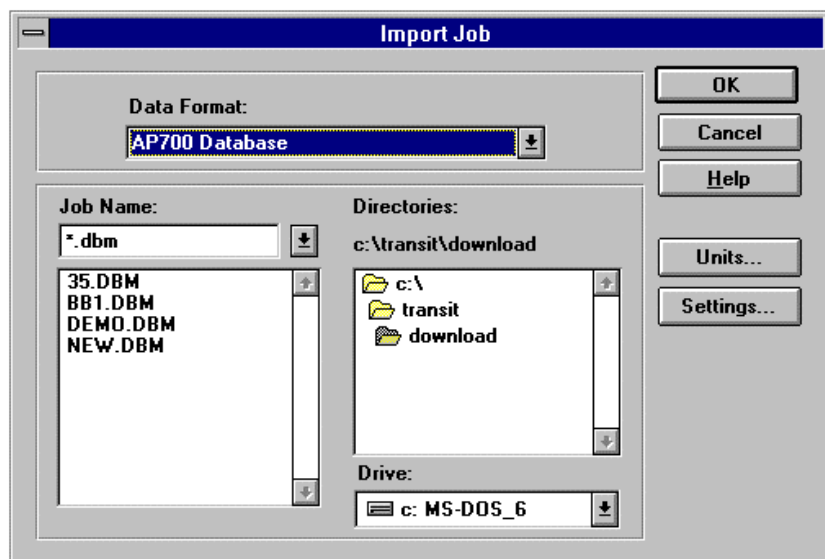


Figure 5-5 - Import Job Dialog Box

In choosing the **File|Import Job** option, the user has the option of selecting the desired units and settings for the data file being retrieved. For example, if the file was recorded in meters, and the user would like the data displayed in feet, just click the **Units** button. The same applies to the settings, which affect the way in which the data is read in. Selecting the **Settings** button from the **Import Job** Dialog Box brings up the same box as if **Options|Settings** were chosen. Be sure to set the proper settings before importing any job files. See Section 9.3 for more information on settings.

---

---

*Note: The Coordinate Order option from the Misc. tab of the Settings Dialog Box refers to the order in which the data is stored in the data file. This setting instructs TransIt how to read in the data.*

---

---

- **Data Format** - The Data Format selection box lists the names of all data formats with which TransIt can interact. See Table 5-1 for listing. Choose the name of the data format to indicate where the imported job file has originated.

---

*Note: If the data file is stored in a format other than the format chosen in the Data Format selection box, each record appearing in the Browser Window will be marked as invalid. The information in the Data Format selection box indicates to TransIt how to open the file.*

---

- **Job Name** - The Job Name selection box is where the name of the file to be imported is entered. A default extension appears in the Job Name box based on the selection highlighted in the **Data Format** selection box. Note that this is only a default extension, and can be changed by the user to any desired, valid extension.

Once a new wildcard and extension are placed in the Job Name box and the [ENTER] key is pressed, the new entry is added to the box with the underlined down arrow, next to the Job Name box. This list of recently used extensions has a maximum of five extensions, however, it is a scrolling list, so the oldest extension in the list is erased to make room for the newly added extension.

To use an extension that has already been used during the current TransIt session, just click on the box with the underlined down arrow. Once selected, this extension will appear in the Job Name box.

A list of files appear directly below the Job Name box. This list of files matches the file extension found in the Job Name box for the files in the current directory.

- **Directories** - This area displays the current directory and allows the user to select the location of the file to be imported.
- **Drives** - This box displays the current drive specification and allows the user to select the drive of the file to be imported.

When importing a file which already has a TransIt file created for it, TransIt will prompt the user to overwrite the file or to automatically generate a name for the new file. If the user chooses to overwrite the original TransIt file, the contents of the original file are lost and are replaced with the new contents. However, if the user chooses to have TransIt generate a name for it, the Job Name will be the next in the sequence of NONAMEXX.TRN, where XX is the next available number during the current TransIt session.

The **Units** and **Settings** buttons bring up dialog boxes allowing the user to dictate the Units and Settings to be used. The current Units and Settings in these dialog boxes will be applied to the imported data. Conversions will be performed as required.

### 5.4.1 Special Cases

When importing a job with the AP700 Database format, a Nikon Raw file is created in addition to a TransIt file. The name given to the Nikon Raw file has the same Job Name as the AP700 file, however a *.raw* extension is appended. This file is placed in the DOWNLOAD directory.

While importing this file, if TransIt detects that a Nikon Raw file already exists for this file, it will prompt the user to overwrite it or to automatically generate a name for the new file. If the user chooses to overwrite the original Nikon Raw file, the contents of the original file are lost and are replaced with the new contents. However, if the user chooses to have TransIt generate a name for it, the Job Name will be the next in the sequence of NONAMEXX.RAW, where XX is the next available number during the current TransIt session. It is then up to the user to rename the file NONAMEXX.RAW, which is located in the DOWNLOAD subdirectory.

## 5.5 Export Job

To export a data file in a different file format, choose the **File|Export Job** option from the menu bar of TransIt. However, in order to export a job, one must first be opened in TransIt. See Figure 5-6 for an example of the **Export Job** dialog box.

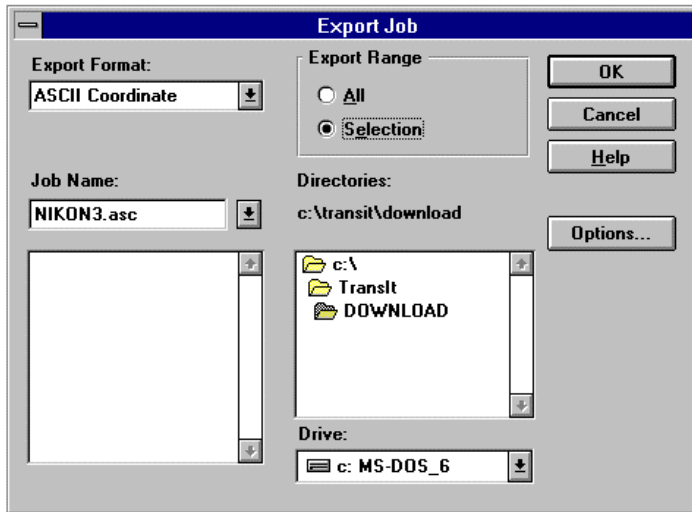


Figure 5-6 - Export Job

Once the **Export Job** dialog box appears, the user is requested to provide the following necessary information:

- **Export Format** - This field displays a list of file formats to which the TransIt data file can be exported. The following export file formats are available:
  - ASCII Coordinate
  - DXF Format
  - Nikon Raw
  - SDR 2x Format
  - AP700 Database

For the DXF export format, the user has a few options concerning the data exported to the DXF file. These options can be set by choosing **Options|Export Options** from the menu bar of TransIt. For more information on the DXF options, see Section 9.2.

For the ASCII export format, the precision of the data can be set by selecting the number of decimal places on export. The user can also select to export a 2D or 3D file, comma or space delimited. These options can be set by choosing the **Options|Export Options** from the TransIt menu bar. For more information on the ASCII export options, see Section 9.3.

- **Export Range** - With this feature, the user can export all records by selecting the “All” button or a selection of records by selecting the “Selection” button.

To select a range of records, hold the **[SHIFT]** key while selecting the first and last record of the chosen range with the mouse. To select a group of non-contiguous records, hold the **[CTRL]** key while individually selecting each record with the mouse.

---

|              |  |
|--------------|--|
| <i>Note:</i> | <i>If the user has highlighted a selection of records in the Browser, but selects the “All” button in the Export Range box, all of the records will be exported.</i> |
|--------------|--|

---



- **Job Name** - This field will display the default Job Name suggested by the TransIt application for the newly converted data file. The default Job Name is created by concatenating the Job Name of the input file with the extension representative of the Export File Format. The current extensions that exist for the Export Filter Formats are as follows:
  - .DXF - for AutoCAD DXF files.
  - .ASC - for ASCII Coordinate files.
  - .RAW - for Nikon Raw files.
  - .SDR - for SDR 2x files.
  - .DBM - AP700 database files.

The new filename is merely a default and can be modified by the user. If a Job Name without an extension is entered, the default extension will be appended. However, if no extension is desired, placing a dot after the filename will yield a filename with no extension. Below the Export Job Name box is a listing of existing files of the selected file type which are in the current directory.

- **Directories** - This area displays the current directory and allows the user to select the location for the converted file.

---

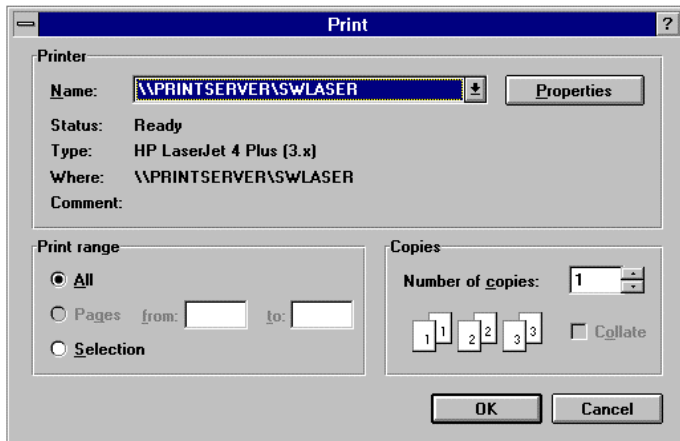
**Warning!!**    *When selecting the directory path to place the saved file, be sure that the directory path listed under the word “Directories” in the **Export Jobs** window is the desired destination path.*

---

- **Drives** - This box displays the current drive specification and allows the user to select the drive for the converted file.

## 5.6 Print Report

To print a report of the currently active job in the Browser Window, select **File|Print Report** from the Menu Bar. See Figure 5-7 for an example of the Print Report Dialog Box. TransIt uses the Courier New font, 12 pt., to print out a report.



**Figure 5-7 - Print Report Dialog Box**

The printing functionality is very basic in TransIt. Note that a default printer must be selected in Windows' Print Manager in order to print a report. The columns displaying decimal numbers are right aligned, and the contents of the **Browser Window** fit cleanly on the printout.

To select a range of records to print, hold the **[SHIFT]** key while selecting the first and last record of the chosen range with the mouse. To select a group of non-contiguous records, hold the **[CTRL]** key while individually selecting each record with the mouse. To deselect a record hold the **[CTRL]** key while clicking on the selected record.

**Report Format**

The report format is a very compact, yet organized method of displaying data. Since the raw and coordinate data for a record can exceed the width of an 8 ½ x 11 sheet of paper, the raw data is printed on one line, and the coordinate data is printed on the following line. The format for each record type is described below:

**Station Setup**

PN HI BS PN Ref Az True Az

**Side Shot**

PN HT HA SD VA  
PN N E Z Code

**Control Point**

PN HT HA SD VA  
PN N E Z Code

**Resected Coordinates**

PN N E Z Code

**Uploaded Coordinates**

PN N E Z Code

**Manual Input**

PN N E Z Code

**Calculated Coordinates**

PN N E Z Code

**Stakeout Point**

PN HT HA SD VA  
PN N E Z Code

**Face1/Face2**

PN HA SD VA

**Manual Control Point**

PN ID N E Z Code

**Uploaded Control Point**

PN ID N E Z Code

**Comment**

Comment

**Invalid Record**

Invalid Data

## 5.7 Exit

To exit TransIt, simply select **File|Exit**. If there are any jobs which have been modified and have not yet been saved, the user is prompted to save them. All changes to the file will be lost if the user chooses not to save the file.

## Chapter 6 EDIT MENU

The **Edit** menu item provides four editing utilities:

- Deleting a record
- Undeleting a record
- Inserting a record
- Appending a record

See Figure 6-1 for an example of the Edit menu item.

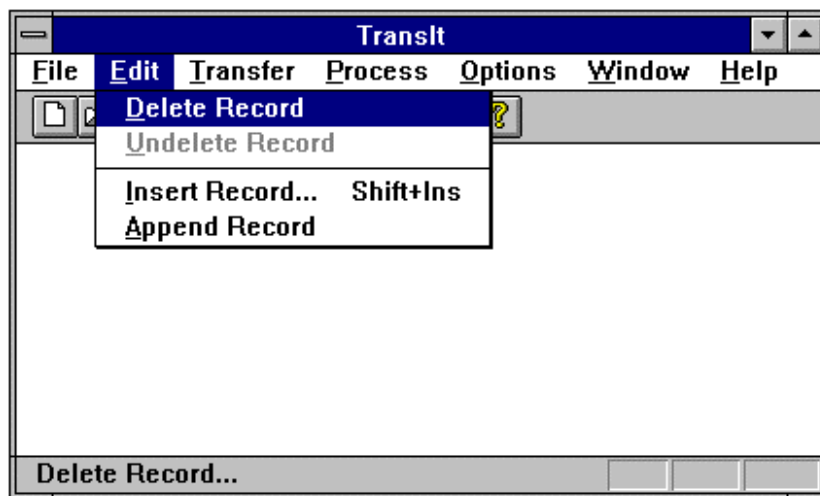


Figure 6-1 - Edit Menu

## 6.1 Delete Record

Data files may contain records which the user simply does not want. The user can select one or more records to be marked as deleted. To select a range of records, hold the **[SHIFT]** key while selecting the first and last record of the chosen range with the mouse. To select a group of non-contiguous records, hold the **[CTRL]** key while individually selecting each record with the mouse. Once a selection is highlighted, choosing the **Edit|Delete Record** operation will mark that selection for deletion by turning it red. Also, pressing the **[DELETE]** key on the keyboard will accomplish the same task. The selection is NOT deleted from the file or the screen. It is just marked in red to indicate that the record is not used in any TransIt operations.

When a data file is opened up in TransIt, any records which have been marked as deleted will appear in red.

## 6.2 Undelete Record

**Undelete Record** is a feature which undeletes selected records that have been marked for deletion. To undelete a range of records, hold the **[SHIFT]** key while selecting the first and last record of that range with the mouse. To undelete a group of non-contiguous records all at once, hold the **[CTRL]** key while individually selecting each record with the mouse.



### 6.3 Insert Record

To insert a new record into the active job, use the **Edit|Insert Record** option on the menu bar. Before choosing the **Edit|Insert Record** option, place the cursor at the location in the Browser Window where the new record will be inserted. The record in the current location will be moved down by one slot to make room for the newly inserted record.

Once the **Edit|Insert Record** option is selected, the **Insert Record** dialog box will appear, prompting the user for the type of record to insert. See Figure 6-2 for an example of the **Insert Record** dialog box.

The screenshot shows a dialog box titled "Insert Record". It is divided into three main sections. The first section, "Coordinate", contains six radio button options arranged in two columns: "Manual Input", "Calculated Coordinates", "Uploaded Coordinates", "Uploaded Control Pt", "Resection Coordinates", and "Manual Control Pt". The second section, "Coordinate And Raw", contains three radio button options: "Side Shot", "Stakeout", and "Control Point". The third section, "Misc", contains four radio button options: "Station Setup" (which is selected), "Face 1", "Comment", and "Face 2". To the right of these sections are three buttons: "OK", "Cancel", and "Help".

Figure 6-2 - Insert Record Window

Once the record to be inserted is chosen, a form will appear with blank entries for each field of the chosen record type. See Figure 6-3 for an example of a **Side Shot** entry form. The fields designated in blue are optional. If any of the black fields are left blank, TransIt will notify the user which fields must be filled in

before exiting the form. At this point, the user has the option of canceling the operation if so desired, or filling in the remaining fields. Once all of the fields are filled in, the record is inserted into the Browser Window. After the user completes the necessary data entry on the form, pressing the **[ENTER]** key on the last field or pressing the OK button on the dialog box will bring up a new, blank form of the same type. This allows the user to enter many records of the same type without having to go back to the TransIt menu bar. There is one exception however. This feature does not exist for a station setup record.

To insert data of a different record type while on the blank entry form, press the **[CANCEL]** button and the current entry form will close. If anything is entered on the entry form and the **[CANCEL]** button is pressed, the entry form will close without saving what was on the entry form. In both cases, the **Insert Record** dialog box will appear.

The newly inserted record can be modified at any time by selecting it in the Browser Window and editing it in the associated Editor Window.

The image shows a software dialog box titled "Enter Data For New Record". It contains a section labeled "Side Shot" with several input fields: "Point Num", "HT", "Horiz Angle", "Vert Angle", "Slope Dist", "Timestamp" (pre-filled with "11:24:43"), and "Code". The "Timestamp" and "Code" labels and their corresponding fields are highlighted in blue. To the right of the input fields are three buttons: "Insert", "Cancel", and "Help". At the bottom of the dialog, a note states: "Note: Fields in blue are optional".

| Side Shot   |                      |
|-------------|----------------------|
| Point Num   | <input type="text"/> |
| HT          | <input type="text"/> |
| Horiz Angle | <input type="text"/> |
| Vert Angle  | <input type="text"/> |
| Slope Dist  | <input type="text"/> |
| Timestamp   | 11:24:43             |
| Code        | <input type="text"/> |

Note: Fields in blue are optional

Figure 6-3 - Side Shot Entry Form

## 6.4 Append Record

To append a record to the end of a job file, choose the **Edit|Append Record** option from the menu bar. Once selected from the menu bar, the **Insert Record** dialog box will appear, and the user can select the record of choice to append. See Section 6.3 for more information on inserting a record into a job file.

## Chapter 7 TRANSFER MENU

TransIt allows the user to transfer data between a PC and a data recorder by using the **Transfer** menu item on the Menu Bar. See Figure 7-1 for an example of the **Transfer** menu.

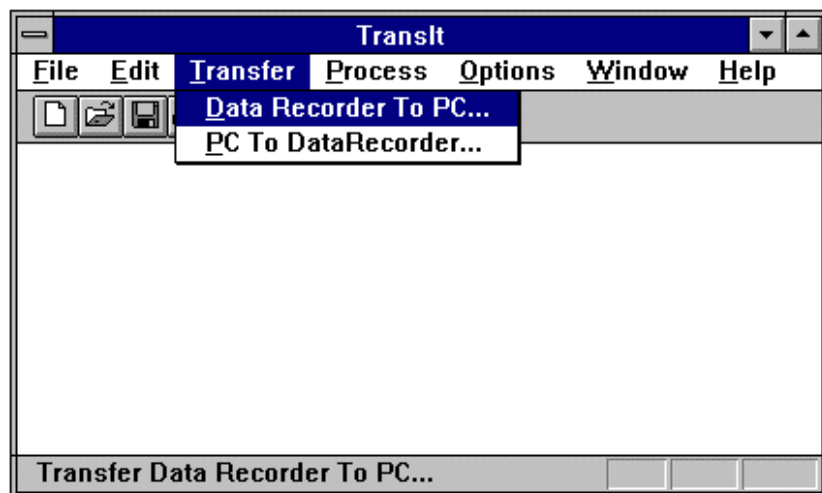
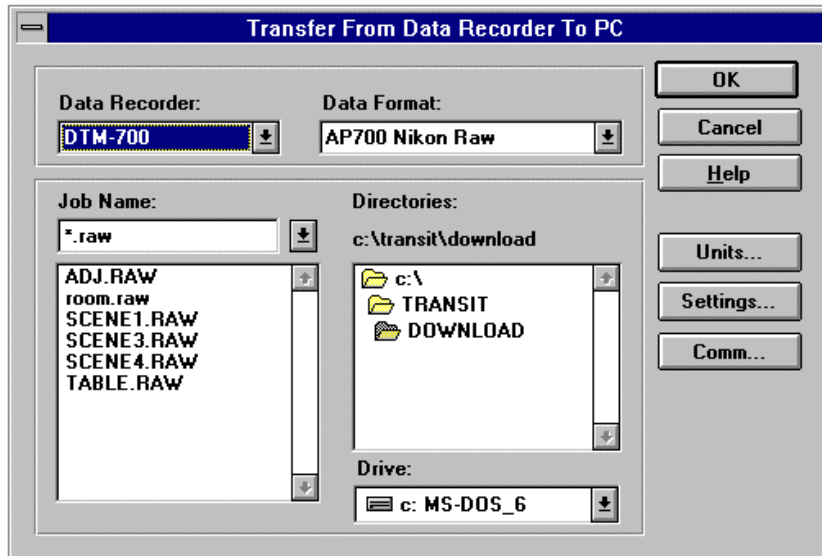


Figure 7-1 - Transfer Menu

### 7.1 Data Recorder to PC

To transfer data from the data recorder to the PC, select the **Transfer** menu item on the Menu Bar and then select **Data Recorder to PC**. The box in Figure 7-2 will appear, requesting the user to fill in necessary information to complete the transfer.



**Figure 7-2 - Transfer From Data Recorder To PC**

- **Data Recorder** - This selection box lists the names of all data recorders that can be used to achieve the transfer to the PC. The data recorders supported by TransIt are:
  - DR-48
  - DTM-300
  - DTM-310
  - DTM-400
  - DTM-700

- **Data Format** - This selection box lists the names of all data formats supported for each data recorder that is selected. The data formats supported by TransIt are:
  - DR-48 All Format
  - DTM-300 Format
  - DTM-310 Format
  - DTM-400 Format
  - DTM-700 Nikon Raw Format
  - DTM-700 Nikon Coordinate Format

Once the data format is selected, the default extension representing the selected data format appears in the box titled **Job Name**. This extension can become part of the new job name if the user so chooses.

- **Job Name** - The Job Name selection box is where the new job name will be entered. Once the data format has been selected, the default extension for the specified data format is placed in this box. Note that this is only a default extension, and can be changed by the user to any desired, valid extension. A name must be applied to the left side of the extension. To aid in naming the file, a list of existing filenames in the selected directory appears in the box below the default extension.
- **Directories** - This area displays the current directory and allows the user to select the location for the transferred file.
- **Drives** - This box displays the current drive specification and allows the user to select the drive for the transferred file.

---

**Warning!!** *When selecting the directory path to place the saved file, be sure that the directory path listed under the word “Directories” in the **Transfer From Data Recorder To PC** window is the desired destination path.*

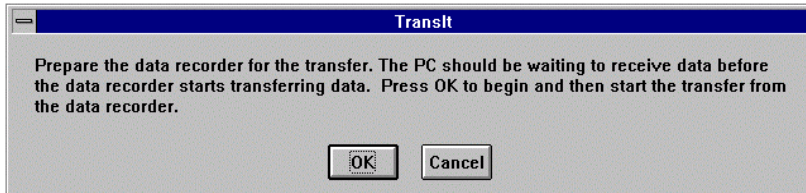
---

- **Units Button** - The user has the option of selecting the desired units for the data file being downloaded to the PC. For example, if the file was recorded in meters, and the user would like the data displayed in feet, just click the **Units button** and make the appropriate modifications.
- **Settings Button** - The user has the option of selecting the desired settings for the data file being downloaded to the PC. The settings affect the way in which the data is read in. Be sure to set the proper settings before downloading any files. See Section 9.3 for further information on settings.



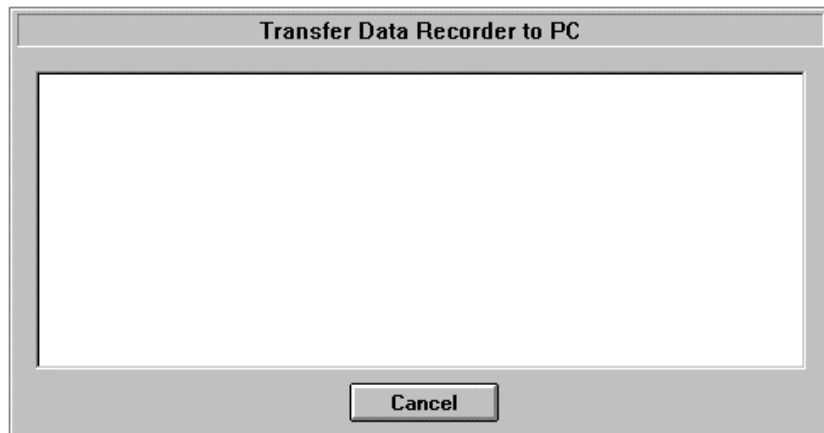
### 7.1.1 Performing the Transfer

After the user enters the necessary information and clicks the [OK] key, TransIt checks to see if a file by this name already exists in the current directory. If it finds that the selected filename already exists in that directory, it will prompt the user to overwrite the file. Once these questions are answered, the following box in Figure 7-3 will appear, alerting the user to prepare the data recorder for the transfer.



**Figure 7-3 - Transfer Alert Box for Download**

Once the user reads the data recorder and clicks the [OK] button on the TransIt screen, the **Transfer Data Recorder to PC** window appears displaying the results of the transfer in progress. See Figure 7-4 for an example of the **Transfer Data Recorder to PC** window.



**Figure 7-4 - Transfer Data Recorder to PC**

After the window appears, the user must begin the transfer on the data recorder side. TransIt will time out after approximately 60 seconds if the transfer on the other end hasn't been initiated, or if there is a 60 second delay in the data stream as data is being transferred.

Once the data transfer has begun, the data records will appear in the **Transfer Data Recorder to PC** window. The file will be written to the DOWNLOAD directory once the transfer is complete.

If TransIt times out after data has been received, the user will be notified of the time-out.

### 7.1.2 Special Cases

- When downloading data from the DR-48 to the PC, the user has a choice to download using the following options:
  - All Data
  - Raw Data
  - Coordinates Only

For TransIt to properly interpret the data, the **All Data** option should be selected on the DR-48. However, if **Raw Data** or **Coordinates Only** is chosen, TransIt will decipher every record as an invalid record.

## 7.2 PC to Data Recorder

To transfer data from the PC to the data recorder, a job file must first be opened. If more than one job is opened, then multiple Browser Windows will be shown. The Browser Window which is highlighted is considered the active job. This job will be the one which will be transferred. To initiate the transfer, select the **Transfer** menu item on the Menu Bar and then select **PC to Data Recorder**. The box in Figure 7-5 will appear, requesting the user to select which data recorder will receive the data.

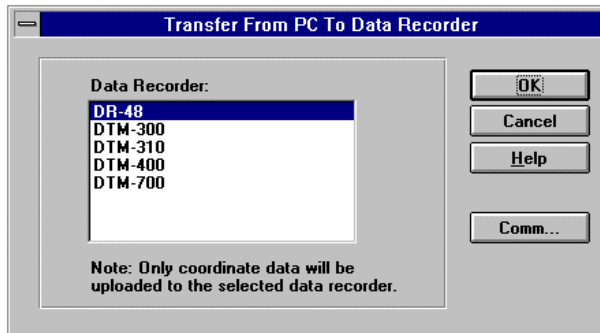
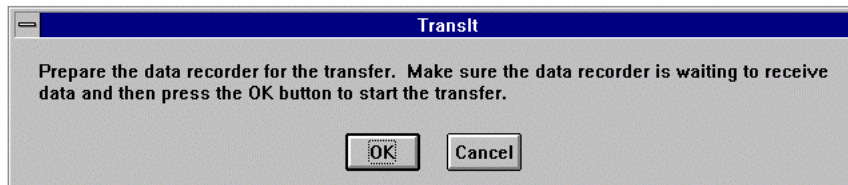


Figure 7-5 - Transfer From PC To Data Recorder

- **Data Format** - This selection box lists all data recorder upload formats available. TransIt supports the following data formats:
  - DR-48
  - DTM-300
  - DTM-310
  - DTM-400
  - DTM-700
- **Comm Button** - To change the communication parameters, click on the **Comm button**.

### 7.2.1 Performing the Transfer

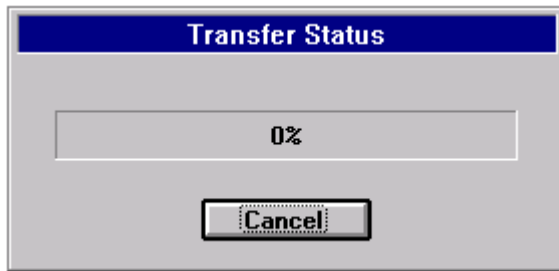
Once the necessary information is completed, click on the [OK] button, and the box in Figure 7-6 appears:



**Figure 7-6 - Transfer Alert Box for Upload**

To cancel the transfer, click the [Cancel] button. To continue with the transfer, the data recorder/instrument side must be started first, because it is waiting for data, then click the [OK] button in the **Transfer Alert** Box.

Once the [OK] button is selected, the **Transfer Status** Window appears. This window can be seen in Figure 7-7.

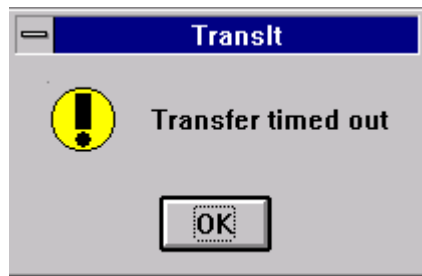


**Figure 7-7 - Data Recorder Transfer Status Window**

TransIt will time out after approximately 60 seconds if the transfer on the other end hasn't been initiated, or if there is a 60 second delay in the data stream as data is being transferred.

Once the data transfer has begun, the percent bar will move from left to right, indicating how much of the transfer has completed so far.

If TransIt times out at any point, the box in Figure 7-8 will appear:



**Figure 7-8 - Data Recorder Transfer Time Out Box**

### 7.2.2 Special Cases

- When transferring data to the DTM-300, DTM-310 and DTM-700 instruments, only coordinate records are uploaded. Each instrument has fixed sized fields for its northing, easting and elevation entries, which TransIt must adhere to when formatting data for the upload. Any number produced by TransIt that exceeds the specification put forth by that particular instrument will be truncated on the left and rounded on the right. For example, a northing value of:

11,482,939.6306 will be displayed as 482,939.631

on the DTM-300, DTM-310 or DTM-400.

For the DTM-700, a northing value of:

11,482,939.6306 will be displayed as 1,482,939.631

on the instrument. It can be seen that in all cases, the number is truncated on the left and rounded on the right.

---

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*Note: Please see the instruction manual for each instrument for further details on the functionality and specifications of the instruments.*

---

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## Chapter 8 PROCESS MENU

The Process Menu options are used in coordinate calculation. After the calculations are performed, the user can review the results of the coordinate calculation by reviewing the log available under this menu item. An example of the **Process Menu** can be seen in Figure 8-1:

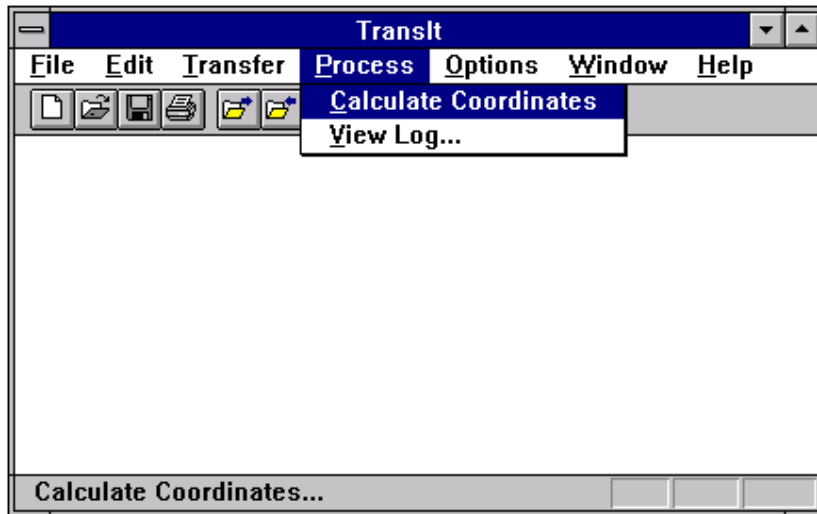


Figure 8-1 - Process Menu



## 8.1 Coordinate Calculation

The coordinate calculation option becomes enabled when the user does one or more of the following:

- Inserts a record
- Deletes a record
- Undeletes a record
- Edits an existing record
- Modifies a value in **Options|Settings**

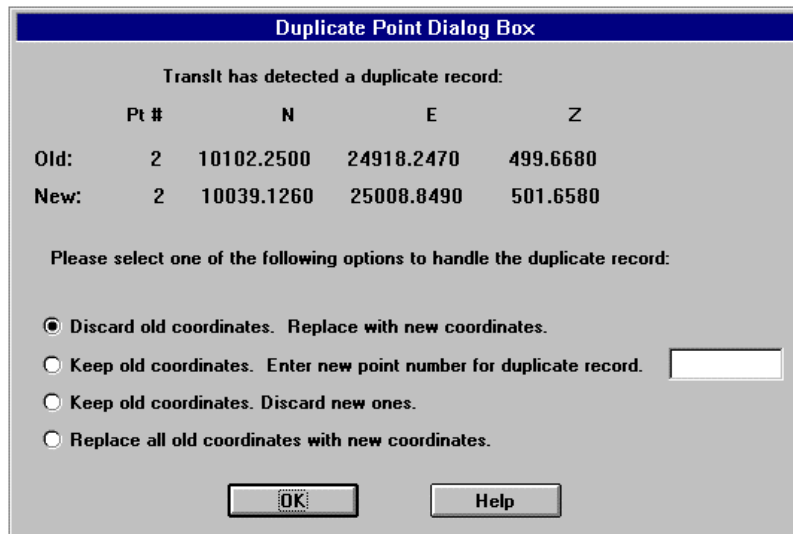
In order to calculate coordinates, select the **Process|Calculate Coordinates** option on the menu bar, or press the icon on the tool bar labeled “XYZ”.

Coordinate calculation is also done automatically at various times while TransIt is running. This automatic regeneration of coordinates is done:

- After opening a file
- After importing a file
- Before exporting a file if any of the above changes to the file have been made

### 8.1.1 Duplicate Points

While TransIt calculates coordinates, it checks for duplicate point numbers. If a duplicate point number is encountered, the user is prompted with the dialog box found in Figure 8-2.



The dialog box is titled "Duplicate Point Dialog Box". It contains a message: "TransIt has detected a duplicate record:". Below this is a table with four columns: "Pt #", "N", "E", and "Z". The table has two rows: "Old:" and "New:". The "Old:" row shows Pt # 2, N 10102.2500, E 24918.2470, and Z 499.6680. The "New:" row shows Pt # 2, N 10039.1260, E 25008.8490, and Z 501.6580. Below the table is a prompt: "Please select one of the following options to handle the duplicate record:". There are four radio button options: "Discard old coordinates. Replace with new coordinates." (selected), "Keep old coordinates. Enter new point number for duplicate record." (with an adjacent text input field), "Keep old coordinates. Discard new ones.", and "Replace all old coordinates with new coordinates.". At the bottom are "OK" and "Help" buttons.

|      | Pt # | N          | E          | Z        |
|------|------|------------|------------|----------|
| Old: | 2    | 10102.2500 | 24918.2470 | 499.6680 |
| New: | 2    | 10039.1260 | 25008.8490 | 501.6580 |

Please select one of the following options to handle the duplicate record:

- ☒ Discard old coordinates. Replace with new coordinates.
- ☐ Keep old coordinates. Enter new point number for duplicate record.
- ☐ Keep old coordinates. Discard new ones.
- ☐ Replace all old coordinates with new coordinates.

OK Help

**Figure 8-2 - Duplicate Point Dialog Box**

The duplicate point number is handled in the manner selected by the user in the **Duplicate Point** dialog box.

## 8.2 View Log

Once coordinate calculation has been attempted or performed, the log will contain the results of the task. Each entry to the log is marked with the following information:

- Date and time
- The action that took place
- The results of the action

If the entry to the log is the result of an encountered duplicate point, the point number is also added to the entry. If the coordinate calculation has been attempted, but failed, the attempt is logged, along with the reason the attempt failed.

The log can be viewed by selecting **Process|View Log** from the menu bar. However, the contents of the log are overwritten each time a coordinate calculation is attempted. If the user decides to view the log, it will be displayed in Microsoft Windows' Notepad. If the notepad.exe file is not found on the system, the log cannot be viewed in Notepad. However, since it is a regular ASCII file, it can be viewed in any type of editor outside of the TransIt application. The name of the file is reproc.txt and can be found in the directory in which TransIt was installed.

## Chapter 9 OPTIONS MENU

The Options Menu on the TransIt menu bar allows the user to set various parameters. The **Communications** parameters must be set so the instrument and PC can communicate. The **Export Options** allow the user to customize the output for DXF and ASCII Coordinate files. The **Settings** option must be set to match the settings on the instrument. To see which settings are used in a particular data file, the **Job Summary** selection is chosen. See Figure 9-1 for an example of the **Options** menu.

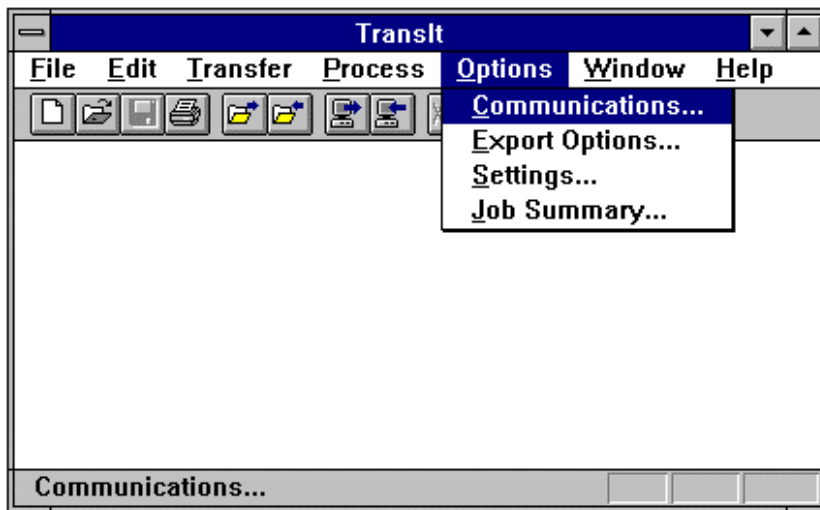


Figure 9-1 - Options Menu

## 9.1 Communications

To set the COM port and baud rate for serial communications over the RS-232 link, select **Options|Communications** from the TransIt menu bar. The dialog box in Figure 9-2 will appear.

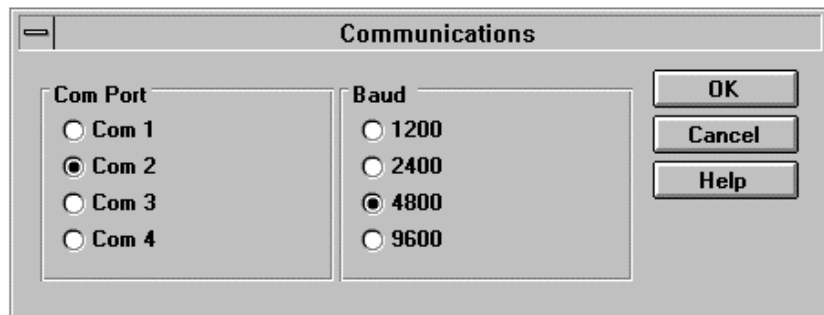


Figure 9-2 - Communications

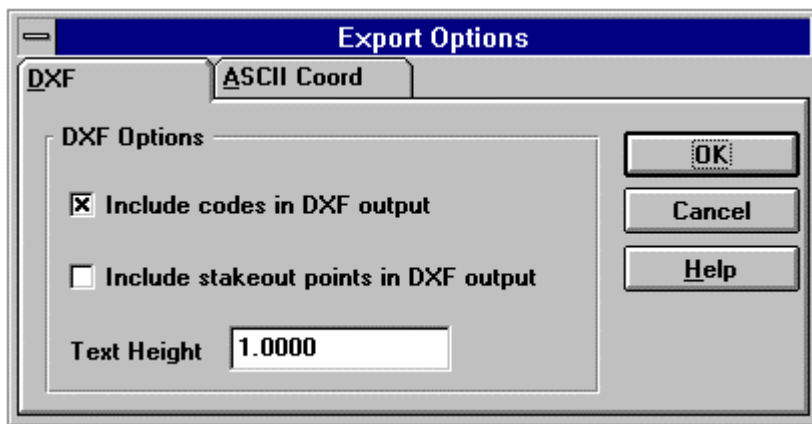
TransIt supports COM1 through COM4, and baud rates of 1200 through 9600. Be sure that the selections in this dialog box match the communication settings on the instrument, otherwise the transfer will be unsuccessful.

## 9.2 Export Options

This menu selection consists of options which affect the way in which data is exported. The user can set various options related to both DXF and ASCII Coordinate file formats.

### 9.2.1 DXF

The common AutoCAD DXF output format is supported by TransIt. However, there are options in TransIt which can be set by the user to indicate certain preferences pertaining to the DXF output file produced by TransIt. See Figure 9-3 for an example of the export options available for DXF.



**Figure 9-3 - Export Options for DXF**

Below is a brief description of each option:

- Include codes in DXF output - Select this option if feature codes are desired in the DXF file. This option is selected, by default.
- Include stakeout points in DXF output - Select this option if stakeout points are desired in the DXF file. By default, this option is not selected.
- Text Height - Height of text in DXF file. This number cannot be negative.

### 9.2.2 ASCII Coordinate

The precision of the data can be set by selecting the number of decimal places on export. This number can range from 0 to 9.

The user has 2 additional options. The file can be exported with 2D or 3D data, and it can be either comma or space delimited.

See Figure 9-4 for an example of the export options available for ASCII Coordinate.



Figure 9-4 - Export Options for ASCII Coordinate



### 9.3 Settings

In order to properly decipher or process a data file in the manner in which it was recorded, TransIt must have the proper settings to do so. To establish the proper settings to imitate the recording environment, select the **Options|Settings** menu item from the TransIt menu bar. See Table 9-1 for the settings and options available in TransIt:

| Feature                         | Available Settings                       |
|---------------------------------|--|
| Map Projection                  | On<br>Off                                |
| Map Projection Factor           | User definable                           |
| Curvature and Refraction        | On<br>Off                                |
| Curvature and Refraction Factor | User definable                           |
| Sea Level Correction            | On<br>Off                                |
| Vertical Angle                  | Zenith<br>Nadir<br>Horizontal<br>Compass |
| Coordinate Order                | NEZ<br>ENZ                               |
| Horizontal Angle                | Azimuth<br>Angle Right                   |
| Azimuth                         | North<br>South                           |

**Table 9-1 - TransIt Settings and Options**

---

---

*Note:*            *The Coordinate Order option refers to the order in which the data is stored in the data file. This setting instructs TransIt how to read in the data and how to export data to a data file.*

---

---

## 9.4 Job Summary

To view all of the settings for the currently active file in the Browser Window, select **Options|Job Summary** from the TransIt menu bar. The settings are placed here instead of crowding the Browser Window with them. See Figure 9-5 for an example of the **Job Summary** window.

---

*Note: Even though the settings do not appear in the Browser Window, when the information in the Browser Window is saved (which is in Nikon Raw format), the settings are written to the file as in traditional Nikon Raw format.*

---

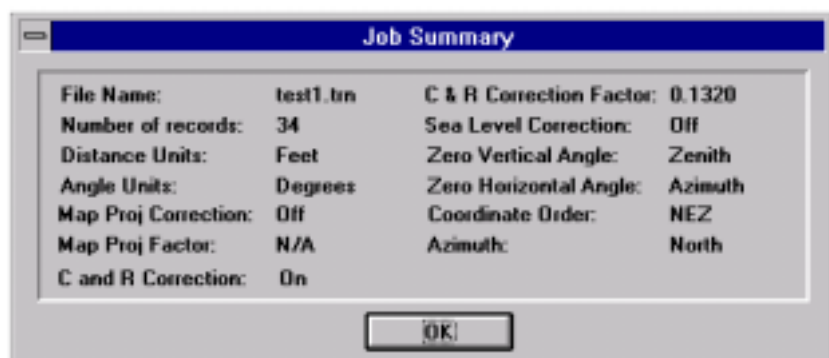


Figure 9-5 - Job Summary

## Chapter 10 WINDOW MENU

The Window Menu on the Menu Bar gives the user the ability to arrange the icons on the screen or to select a window to appear on “top” of the other windows. See Figure 10-1 for an example of the **Window Menu**.

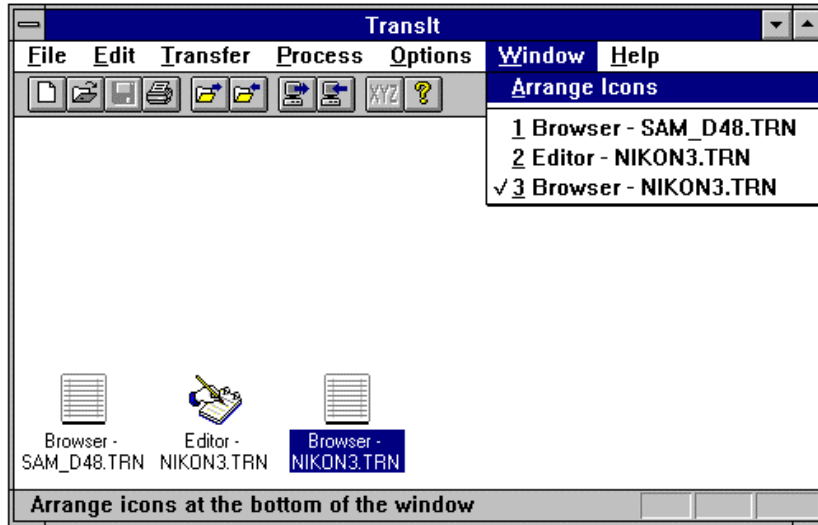


Figure 10-1 - Window Menu

### 10.1 Arrange Icons

This submenu item will organize the icons by placing them in the lower left portion of the TransIt application window.

### 10.2 Selecting A Window

The box below the **Arrange Icons** option lists all of the windows currently open in TransIt, whether minimized or maximized. The check mark next to the window name indicates that this window is the currently active window, or the window that is highlighted.

To open any of the windows in the list, just click on the filename, and that window will then have focus.

## Chapter 11 HELP MENU

TransIt has on-line help available for most of the features contained in the TransIt application. See Figure 11-1 for an example of the Help Menu item.

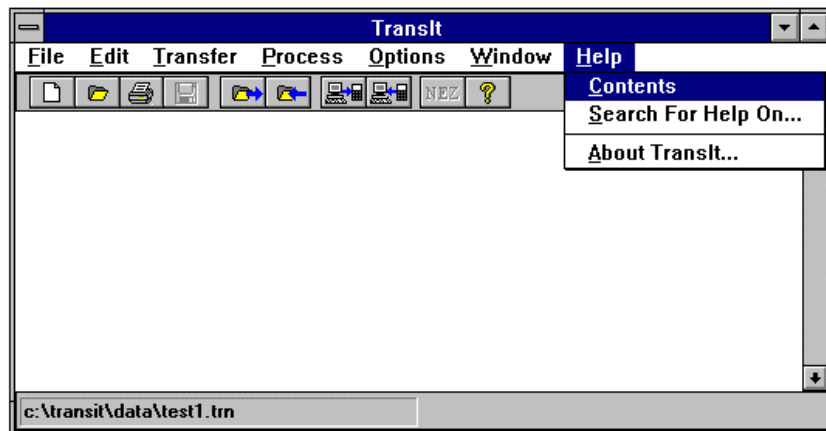


Figure 11-1 - Help Menu

---

*Note:*            *The online help is only available if it was installed during the TransIt installation.*

---

### 11.1 Contents

Selecting **Help|Contents** from the Menu Bar of TransIt will bring up a list of topics discussed in the online help. See Figure 11-2 for an example of the **Help|Contents** menu item. By single clicking on the underlined item, the details for that topic will appear. Under the Help Menu Bar are buttons which do the following:

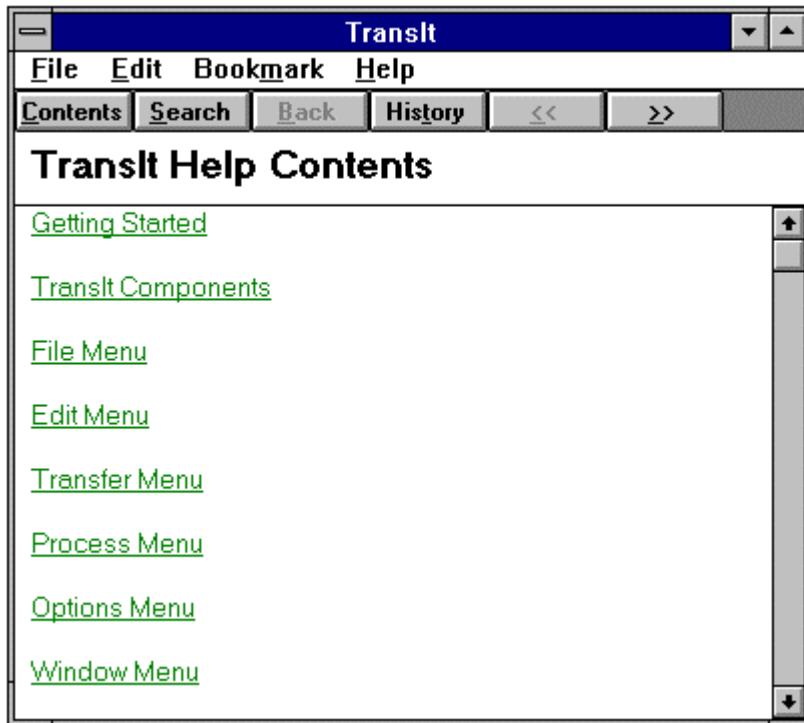


Figure 11-2 - Help|Contents

- **Contents** Jumps back to the main menu of the Help section.
- **Search** Brings up a list of topics discussed in the online Help.
- **Back** Jumps back to the previous page
- **History** Displays a list of Help pages which have been viewed during the current TransIt session.
- << Goes back 1 page.
- >> Goes forward 1 page.

## 11.2 Search for Help On

Selecting **Help|Search for Help On...** will bring up a list of topics that appear in TransIt. The user can enter a topic, term or symbol which appears in the application, and the online help will jump directly to that section.

## 11.3 About TransIt

Selecting **Help|About** will bring up the About TransIt Box which displays details on the program version and also displays technical support phone numbers. Figure 11-3 displays the **About TransIt** Box.



Figure 11-3 - About TransIt



## Chapter 12 TROUBLESHOOTING

This Troubleshooting section attempts, where practical, to help the user answer questions which might arise during installation or execution of TransIt.

### 1. Why am I having problems installing TransIt?

Make sure no other applications are running during the installation of TransIt, such as virus scanning software or Microsoft Office.

### 2. How can I increase the speed/performance of TransIt?

If you are running under the Microsoft Windows 3.1 environment, SMARTDRV.EXE can be placed in the AUTOEXEC.BAT.

### 3. Why has a time-out occurred while attempting to transfer the data between the PC and the Data Recorder?

Time-outs can occur for a few reasons:

- Check to see that the serial cable hasn't been disconnected or loosened between the PC and the Data Recorder.
- Verify that the serial cable is plugged into the proper COM port on the back of the PC, matching the COM port selected during installation of TransIt. The currently selected COM port can be verified by selecting the **Options|Job Summary** option from the Menu Bar. To change the COM port selection, select **Options|Communications** from the TransIt menu bar.

- Confirm that the baud rate settings are the same on the data recorder and in the TransIt software. The currently selected baud rate can be verified by selecting the **Options|Job Summary** option from the Menu Bar. To change the baud rate selection, select **Options|Communications** from the TransIt menu bar.

**4. In transferring data, I noticed that the beginning of the data file wasn't transferred. What happened here?**

In transferring data between the PC and the Data Recorder in either direction, you must first start the side which will be receiving the data. This side is now waiting for the other side to transfer. For example, if data is being uploaded from the PC to the Data Recorder, the data recorder must be ready first, (or started first), waiting for the data from PC.

**5. When I transfer a data file from the PC to an instrument how come some of the data values transferred have been truncated on the left side?**

This is not an error. Due to the size of the northing, easting and elevation fields in the design of the instruments, these fields can only contain numbers that have 6 or 7 places to the left of the decimal. The DTM-300, DTM-310, and DTM-400 have 6 places to the left of the decimal, whereas the DTM-700 can have 7. If any number exceeds this maximum number, the left most digits are truncated.

**6. Why didn't the file I saved appear in the directory where I saved it?**

When saving files, be sure to check the selected directory by looking at the path displayed under the word, "Directory" in the Dialog Box. When selecting the location to place the document in, you must double click on file folder, not single click.

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