

EXHIBIT G – User Manual

FCC ID O7O-SPR

SPRITE TRAFFIC COUNTER
Time Interval Counter
Sprite

Field Unit Instruction Manual

Diamond Traffic Products

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Introduction

This manual describes the operation and programming of the Sprite. Please be sure you have read and understand this manual completely before attempting operation.

PRODUCT DESCRIPTION

The Sprite is a traffic data gathering instrument designed for use in the field. The welded extruded aluminum case is durable, light, and weather resistant with a rubber seal is installed around the lid.

The Sprite is capable of recording in its memory up to several years of data collected under user defined parameters. This data, once collected, can then be read out into your computer where it can be printed, edited, and otherwise used to generate comprehensive traffic analysis reports.

Some tips to prolong the life of your Sprite

- Always dry the unit out completely after removing from the field.
- Remove batteries from unit when it is not in use. Make sure you retrieve any needed data beforehand.
- Disconnect serial interface plug if serial communication is not required. This will prolong battery life by more than a factor of 30.
- Avoid placement of unit in drainage ditches or areas prone to flooding.
- Don't leave counter display on when collecting data. Keep pressing <Previous> until display blanks. Counter will automatically enter a low power mode after 10 minutes of no keypad or serial operation. Press <Next> to wake counter up.

Trademark and Copyright Information:

Introduction

How To Use This Manual

This manual completely describes the use of the Sprite. The only exception is for actual retrieval of data once it has been collected. That information is contained in the *TrafMan Software Instruction Manual*.

All users of the Sprite should read all of **Sections I, II, and III** of this manual. This will familiarize you with the basic equipment provided, what types of data you can collect, and what type of sensors can be used. From that point, you have three choices:

To operate the Sprite from its built in keypad. All setup and configuration can be done from there. A computer can be used to retrieve the data after it has been collected or the data can be manually read off of the Sprite display. If this is your application, first read **Section IV.a** and then read through the **Section V** examples to become familiar with basic operation. Refer to the rest of **Section IV** on an as-needed basis for more information.

To operate the Sprite from a computer (using the *TrafMan Software*). All setup and configuration can be done from a computer (in addition to retrieving the collected data). If this is your application, refer to the *TrafMan Software* for more information. Use this manual for clarification and technical information.

To operate the Sprite using both a computer and its built in keyboard. We suggest that you first attempt to run the counter using the built in keypad (first read **Section IV.a** and then follow the examples in **Section V**). After collecting some data, move on to using the *TrafMan Software* to collect your data.

Communication With The Sprite

Communication with the Sprite is done either with the built in Keypad/Display, or via the serial port connected to a IBM PC compatible computer or an IBM compatible lap-top computer.

A software package is normally sold with the Sprite and can be used with the large variety of IBM PC ® compatible computers. This extensive software package (called the *TrafMan Software*) allows complete configuration and operation of the Sprite through the serial port. This program is can also be used to retrieve collected data. See the *TrafMan Software* for more information.

Sprite serial access is not restricted to use with any particular type of computer. Any computer which supports a standard serial communications (RS232) will suffice. The *TrafMan Software On-Line Manual* contains complete documentation of how to control the Sprite from the serial port. However, it is a very technical documentation as is intended for those users wishing to create their own configuration software program.

NOTE: Unlike several other traffic counters made by Diamond Traffic Products, the Sprite cannot be used with a modem.

System Components

To operate your Sprite counter, you need the following:

- A Sprite Field Unit Instruction Manual (provided with counter).
- A TrafMan Software Disk
- Batteries (normally 5 Alkaline C-Cell's).
- A Serial Interface Cable (priced separately).

Optional items include:

- Griffin Data Retriever/Programmer
- TT-ROVER Floppy Disk Data Retriever System.

Additional Equipment Required To Use The Sprite System:

You must have the following equipment to use the Sprite. All of this equipment can be purchased from Diamond Traffic Products as well from several other sources:

- **Sensors.** You must have the appropriate type and quantity of sensors (Loop, Tube, etc.). Tubes also require road grips, concrete nails, etc.

- **A Computer.** A computer is required if you plan to use the *TrafMan Software*. Ideally, this would be one of the many IBM-PC® type computers available. It is possible to use another type of computer, but it will require someone with technical knowledge of the type computer you wish to use.

Many people find a portable Lap-Top type of computer a valuable asset for Sprite applications.

Battery Usage

The Sprite has been designed to be a very efficient user of battery power. However, you must make sure that you have sufficient battery power available to collect your data AND retrieve it out of the Sprite.

The standard Sprite comes with a 5 C-Cell battery pack and will operate for 8 to 10 months on standard Akaline batteries, depending on how much the serial port is used. Optionally, you can order the Sprite with additional or different battery combinations depending on your needs.

IF YOU LOSE BATTERY POWER, THEN YOU LOSE ALL COLLECTED DATA!

We recommend you replace the Sprite batteries every 6 months to insure data integrity. You should also check the voltage (using the Show Status) function in case there is an unforeseen drain or problem with your batteries. Voltage less than 6 volts indicates nearly dead batteries.

General Concepts

The Sprite is a Count only time interval counter. It does not support Raw, Binned, or Sensor data in any fashion. The counter requires only a single sensor for each lane of count desired.

General Concepts

Basic Collection

The Sprite will monitor a sensor (such as a road tube) and count each time that sensor is activated (a cars tire runs over the tube). It will then save into memory the total amount of counts that occurred every user-specified time period (such as every 15 minutes). After saving the count, it will start over at zero count and repeat the process. After the counter has collected some data, you then use the *TrafMan Software* to read out the counts that were stored in the memory of the Sprite or use the Sprite display to manually read and copy the collected data stored in memory. This data can then be saved on disk in your PC. From that point, you can print, view, or otherwise manipulate the data on your computer in whatever way you desire.

The Sprite is capable of simultaneously monitoring two different sensors. For reference, the count from sensor 1 is called Lane 1 Count, the count from sensor 2 is called Lane 2 Count.

Divide By Two

When using a road tube, a two axle vehicle will produce two counts (one for each axle). In order to make the count represent the total number of

vehicles, you can tell the Sprite to divide the total count by two. Note that the final count will not represent the correct amount of vehicles if you have vehicles with more than two axles crossing the sensor (such as a four axle truck, which would give 2 counts). **Divide By Two** is not available when using **Loops** since a loop will only count once for each vehicle (regardless of number of axles).

@INSECTION = Pulse Delay

This feature allows you to set a delay time for each sensor. During that delay time the Sprite will ignore further input from that sensor. This function is used mostly with road tubes (or pulse loop detectors) so that you can block out more than 1 count per vehicle. For example: If you monitored traffic and saw that there was at least a 3 second delay between each vehicle (typical in a residential zone). You then program the Sprite with a three second delay on tube 1. At that point, each time a vehicle hit the road tube the Sprite will wait three seconds before allowing anymore count (thereby ignoring the additional axles on the first vehicle).

The Sprite can have any delay time between 0.1 Seconds and 25.5 Seconds (in 1 tenth of a second increments). Note that each lane has its own delay and can be different.

Lane Subtraction

The Sprite will allow you to subtract the total from one lane from the total of a second lane to obtain directional count. In this fashion, you can place one tube across two lanes of traffic, and a second tube across a single lane of traffic closest to the counter (as illustrated below).

The Sprite will subtract total count from Lane 2 from the total count of Lane 1. This value then becomes the new Lane 1 count. This method will produce correct count totals for each lane.

Directional Count

This option allows you to place two road tubes across two lanes of traffic (one foot apart). The Sprite will then monitor both sensors to determine which direction a vehicle is traveling based upon which sensor is activated first.

Lane 1 count will be only those vehicles which activate sensor 1 first. Lane 2 count will be only those vehicles which activate sensor 2 first. This option is most commonly used in instances where a street is narrow enough that vehicles don't drive in well defined lanes.

Using **Directional**, the Sprite can still determine how many vehicles travel in each direction. Do NOT use this mode if both lanes travel in the same direction. You MUST have opposing traffic in order for directional to work.

Starting Collection

After you tell the Sprite to collect data, it "opens" a *File* in memory to store the data into (which simply means it sets up a place in memory for the data). When you eventually stop collecting data, the counter "closes" the *File* (meaning that it stops writing data into it and preserves that part of memory for you to retrieve, see section II.E). When the counter actually starts depends on the length of the record interval that you have selected. The Sprite won't start until it is at the beginning of a record interval. For example: You selected a 15 minute record interval, the Sprite won't start until the time is a start of a 15 minute period (12:00, 12:15, 12:30, etc..).

All times are given in military format as the Start Of The Interval. If your data file shows:

1: 03/15/90 13:00:00 Total: 28 then this means that Lane 1 had 28 counts occur from 1pm to 2pm (assuming 1 hour record interval length) on March 3, 1990.

Stopping Collection

Once started, the Sprite continuously collects data until you tell it to stop using the Stop Collecting data function or until it runs out of memory. The Sprite will automatically delete old files out of memory that have already been retrieved by you before stopping, so it is not necessary to insure that memory is empty before starting a new collection.

After the counter starts and until it stops it will be saving data into memory in what's called a *File*. Once you stop, the Sprite will "close" the *File* so that no more data will be saved and then you can retrieve the data into your computer. See section II.E. for more information on files.

In addition, the Sprite may automatically close and open a new file at the beginning of each day. This is called Daily Files and is the default operating mode of the Sprite. The Sprite is limited to 99 files in memory and therefore 99

days under this mode. Longer running time is possible by selecting Manual instead of Daily files.

Calculating Memory Use

The Sprite's memory is used to store collected data. How long the memory will last depends on three factors: *# of Lanes*, *Daily or Manual Files*, & *Record Interval Length*. The following table shows approximately how long memory will last under different configurations.

NOTE: The Sprite has a limit of 99 files and thus 99 days when using Daily files.

Files

Each time you start collecting the Sprite will "open" a *File* in its memory. Think of it as the same thing as opening the drawer on a file cabinet. When it's open, things can put into it. In the Sprite's case these "things" are count totals for each lane.

When you stop collecting data, the counter will "close" the *File*. This is very similar to closing the file cabinet drawer. Nothing can be put into it while its closed. If you start collecting again, the Sprite will move to the next file (or the next drawer).

The Sprite can hold up to 99 Files in memory at any given time (99 drawers on the file cabinet). Each of these files is totally independent and is never affected by the other files. Also, each file can be a different size (depending on the amount of data collected while that file was open). Files are numbered from 1 to 99 with number one being the first file created, 2 the second, etc.

Once a *File* has been created, you can then retrieve the file using the *TrafMan Software* and your IBM PC. On the hypothetical file cabinet, this is the same as opening the drawer, making a copy of everything in it, and then closing the drawer with everything back in.

After a file has been retrieved (and you have a copy in your computer) you can then delete the file from memory. This is like taking out the drawer, dumping its contents in the wastebasket, and putting the drawer back in the file cabinet as the bottom drawer. This causes all the other files (drawers) to move up one.

For example, you started with:

- 1: Site A
- 2: Site B
- 3: Site C
- 4: Site D

You then told the Sprite to delete file #1 resulting in:

- 1: Site B
- 2: Site C
- 3: Site D

You then told the Sprite to delete file #2 resulting in:

- 1: Site B
- 2: Site D

You should also note that the Sprite knows when you have retrieved the data out of a file and will automatically delete it to make room for new data when it is collecting. However, if the Sprite runs out of old retrieved files and has no more room for new files, then it will Stop collecting new data.

Hardware

The following section describes the various physical components of the Sprite.

The Keypad

The Sprite has a three key keypad built in. Complete programming and operation of the counter is possible using these keys, although it is not as convenient as using the serial port and the TrafMan software. The three keys are labeled as follows:

Previous

This key backs up one option and returns you to the previous one. Also, pressing this key will put the counter to sleep if it is awake and you are at the main menu. You can always tell when the counter is asleep because the screen will be blank.

Next

`@LABEL TEXT` = This key selects the current option and proceeds forward. It also wakes the counter up if the display is off (something you must do before anything else can be done).

Change

This key changes the selection on the screen. For example, if the option is set to “Yes” you can change it to “No” by pressing the Change key. You can also change the menu option selected and any other displayed item with this key. When what you want is displayed, press Next to select it and move on.

Certain kinds of keypad operation (such as entering a Site ID) work where the cursor is displayed and you can press Change to modify the character at that position. Pressing Next moves forward to the next character position and pressing Previous backs up one position. Pressing Next when you are at the end of the Site ID goes on to the next option and pressing Previous at the beginning of the line backs up one position.

LCD Display

The Sprite is equipped with a two-line LCD display (**Liquid Crystal Display**). Each line displays up to 16 letters or numbers. This display is used in conjunction with the keypad to program and operate the Sprite. You will see various questions and information displayed at different times. Please refer to the appropriate section of this manual for more information.

To save battery power, the Sprite will turn off the display while it is in the field collecting data and the display is not needed (called **Sleep Mode**). It will also turn off the display after 10 minutes of no keypad or serial port activity regardless of the mode.

Road dust will inevitably cover the display from time to time, and the display will need to be brushed off. When cleaning the display, it is best to attempt blowing as much of the dust off as possible before wiping the surface with a soft damp cloth. Excessive pressure may damage your display, so never press against its surface.

Serial Port

The serial port can be used for retrieval of traffic data that has been collected by the Sprite and for programming and setup of the Sprite. All serial devices are connected to the Sprite through the Serial Port plug (located at the bottom of the face panel).

You will need to connect a computer to the Sprite to retrieve your data. You can also completely program and configure your Sprite using the computer and the *TrafMan Software* (see appropriate manual). Note that any computer with a standard RS232 serial port plug may be connected, but if it is not an IBM PC Compatible, you must supply your own software to retrieve the data and program the counter.

The Sprite serial port supports data speeds from 9600 to 300 and always uses 8 Bits, No Parity, and 1 Stop Bit. The port is also fully automatic baud rate detection and always matches the incoming data rate.

You can also connect a ROVER or a GRIFFIN data retriever/programmer to this serial port. See the appropriate manual for more information.

Road Tubes

This section (and the next two) describe the sensors that can be used with the Sprite. Selecting a sensor is largely a matter of what type of data to you want to collect, personal preference, and/or matching existing equipment.

Road Tubes (or just Tubes) refer to hollow rubber tubes usually ranging from 20 to 60 feet in length. These tubes are stretched across the roadway so that oncoming vehicle traffic drives over them. This generates a sound-wave which travels down the tube and allows the electronics of the Sprite to determine that a vehicle has crossed the tube.

Tubes offer the advantage of being easily movable, quick to install, and capable of detecting individual axles of a vehicle. Their disadvantages include rapid wear, hard to secure for long periods of time, and drivers noticing tubes and possibly changing speed, lanes, etc.

Follow these guidelines when using Tubes with the Sprite:

- Counter will work with road tubes up to 100' long.
- Make sure the Tubes are placed as squarely as possible to the oncoming traffic (so that both wheels of a vehicle strike the tube simultaneously).
- After each use, check the tubes for punctures or other damage.
- Plug the end of the tube with a suitable device to keep dirt out.

How to connect Tubes to a Sprite:

- Place a road tube no longer than 100 Feet perpendicular to oncoming traffic across a single or dual lane of traffic.
- Connect the road tube to the Nozzle on the Sprite for the lane you are using (Lane 1 gets count from Nozzle #1, Lane 2 from Nozzle #2).
- If counting two lanes and you want directional traffic information, you may want to read the section on **Lane Subtraction** or **Directional Count** for more information on how to set up these tube arrangements (see Section III).

Inductive Loops

This type of sensor is made of wire formed into a rectangular shape (or a diamond). It is usually buried under the pavement (or in dirt) and is most commonly used as a permanent installation. Some manufacturers also make portable loop mats. A very common application of loops is to control Traffic Signal Lights.

Advantages of loops are: They are permanent so they do not need to be installed each time they are used. They do not wear (when they are buried) and are usually undetectable by oncoming traffic. They count vehicles as opposed to axles so the total count always represents the correct number of vehicles (tubes count axles).

How To Use Loops With A Sprite:

- Loops should be installed in the center of the desired lane of traffic and be no smaller than 4 by 4 feet (6 by 6 foot loops are recommended).
- Connect loops to the Sprite Loop Plug exactly the same as you would tubes (Lane 1 count obtained from loop #1 wires, Lane 2 from loop #2 wires).

Keypad Operation

This section describes operation of the Sprite using its built in keypad. For information on operating the Sprite from the serial port, refer to the *TrafMan Software*.

Keypad Operation

Note that virtually all features of the Sprite can be controlled with its keypad.

How To Use The Menus

The Sprite menu structure has been designed so that only those options which may be needed at any particular point are available. Selection of an option from within a menu is a simple matter of pressing the Change key. A different

options will appear on the display each time you press Change. Once the desired selection appears, press Next to activate that option.

Aborting from an option can be done by pressing the Previous key. This backs you up one question until you return all the way to the menu.

Two Menus

The Sprite has two basic menus that appear depending upon whether or not you're collecting data. The *Not Collecting Data Menu* is active whenever you are not collecting data and the *Collecting Data Menu* active whenever you are collecting data.

Note that the Sprite will go into a special **Sleep Mode** during those times that you are not using the keyboard or the serial port. To bring it out of sleep mode, simply press Next. This will bring up either the *Collecting Data Menu* or the *Not Collecting Data Menu*. To return to sleep mode, press Previous (the screen will go blank to indicate sleep mode).

Make sure you leave the Sprite in the Sleep Mode when it is in the field (screen should be blank). The batteries will be drained very fast if the counter is not in the sleep mode. The Sprite will automatically enter this mode after about 10 minutes of no activity.

Not Collecting Data Menu

This menu is active whenever you are not collecting data. This section describes each option available from this menu in detail. See Section V for a step by step example of using Sprite.

Start Collecting

This option allows you to program the counter to actually start collecting data. Before selecting this option, verify the following:

- The batteries are still good. Battery test is part of **Show Status** option.
- You have enough free memory in the counter to hold all the data you plan to collect. Use the **Show Status** option to verify the amount of free memory. Note that the Sprite will automatically delete any retrieved files to make room for additional new data.

The **Start Collecting** option may ask different questions depending on what type of sensors you have installed in your Sprite. If your counter skips certain questions described below, it is because that question does not apply to the type(s) of sensors you have installed in the Sprite (i.e. questions pertaining to Loops are not asked if you don't have a loop board).

Pressing the **Previous** key will back you up one question. Pressing the **Next** key will move forward one question.

Start Collecting

@TT_2001 SCREE = Site (15 chars):

Enter the current site, up to 16 characters long. You should always enter a Site, to help distinguish between different data collection sessions.

Select Type Of Sensor(s): Tube

Select the type of a sensor you plan to use. Choices are Tube or Loop. This question is not asked if you only have one type of sensor installed in the counter (such as a Sprite with only two tubes). In that case, the type of sensor is automatically set to the type you have installed.

How Many Lanes To Enable: One

Selects how many lanes of traffic you plan to count, one or two.

*If you enabled **Two Lanes** and the sensor is a **Tube**, you are asked:*

Select The Lane Mode: Normal

This option controls how the count from each lane will be treated. You have three choices described below:

Normal. Total counts from sensor 1 are stored as Lane 1 Total Counts. Total counts from sensor 2 are stored as Lane 2 Total Counts. The typical example of this mode is with the counter sitting on a center median with a road tube in each traffic lane.

Subtract. In lane subtract mode, #1 road tube is installed across both lanes of traffic. The #2 road tube goes across just the closest lane and is secured to the centerline. The Sprite will subtract #2's count from #1's count to yield the correct traffic count for each lane.

Direction. In directional mode, both road tubes are installed across two traffic lanes of opposite traffic flow with road tubes spaced about 1 foot apart. Each lanes count is incremented according to which road tube is struck first.

Do You Want To Divide By 2: No

This option enables/disables dividing the total count by two. This option is most frequently enabled when you are counting cars and total vehicles rather than total axles. Question is only asked if the sensor is a **Tube**.

Record Interval

Length: 00:15

Enter the length of record interval you desire. Your choices are 00:15, 00:30, 1 Hour, or 1 Day.

—Input Test—

1: 0 2: 0

Configuration has been completed and you now need to verify that your sensors are working. As each sensor is activated, its count will be updated on the display. If everything is working OK, press **Next** to continue on. Otherwise, press **Previous** to back up and change configuration.

@TT_2001 SCREE = -SETUP COMPLETE-
Press <Next>...

You're Done! Setup is complete and the counter will start collecting data as soon as you press the **Next** key. Press **Previous** to abort and not begin collection.

At this point the screen will blank and the counter will be placed into **Sleep Mode**. From this point, you should secure the Sprite lid and let the counter collect its data.

IMPORTANT NOTE:

The Sprite actually has two modes of data collection, Preset *Active* and Preset *Inactive*. When preset is Active, the counter is not actually collecting data but rather is waiting for the beginning of the next interval. For all practical purposes the counter is not collecting data and no information is being saved in memory.

Some options act differently depending on whether or not the preset is active. For example, you tell the counter to *Stop Collecting* while the preset is still active, the counter will display “No File To Close, Preset Active”. This is because there was never a file created in memory and therefore it cannot stop storing data into it.

Show Status

Show status can be used anytime to display current information about the Sprite. It is most commonly used to determine how much free memory is available and battery voltage check. Simply press **Next** to move from each screen of information to the next.

Total Mem:xxxxxx

Mem Left :yyyyyy

“xxxxxx” represents the total amount of memory available for data collection. “yyyyyy” is the total memory left for data collection.

If the Sprite is not collecting data:

Memory Holds x

Data Files

Where “x” indicates how many data files are in memory. The counter will display “No Files In Memory” if there aren’t any files.

If the Sprite is collecting data:

File #n is Open

Site: <site>

Where “n” represents the File # of file where data is being placed and “<site>” is the current Site #. If no file has been created yet because the Preset is *ACTIVE*, the counter will display “No File Open Yet, Preset Active”.

Internal Battery

Voltage = xx.xv

@TT_2001 DESC = This is a display of the internal battery voltage. It will display the voltage to one-tenth of a volt. We recommend that you change the batteries every 6 months or if the voltage drops below 6 volts. The Sprite automatically performs a battery test each time you switch it “on” and every time you wake it from the **Sleep Mode**. It will display warning battery voltage any time voltage is below 5.8 volts.

Total 1: xxxxxx

Total 2: yyyyyy

Where “xxxxxx” represents the total counts accrued on lane 1 and “yyyyyy” represents the total counts accrued on Lane 2 since you Started data collection.

Time: hh:mm
Date: mm/dd/yy

Where “**hh:mm**” represents the current time and “**mm/dd/yy**” represents the current date.

Test Sensors

This option can be used to verify that all sensors are working properly before collection is enabled.

Testing Sensors:

< __ >

The Sprite is now waiting for you activate a sensor. Each time a sensor is activated, the underline will change to the number of the sensor activated.

Press **Next** to return to the menu.

Configure System

This option is used to set the basic operating parameters for the Sprite. You will need to use this option anytime you want to change date format, enable Manual files, or set the time and date of the real time clock.

Select Format Of Dates: MM/DD/YY

Selects the format for dates. You have 3 choices: MM/DD/YY, DD-MM-YY, or YY-MM-DD. This option controls how dates appear in the data file.

Create New Files When? Manually

This option allows you to enable Daily or Manual files creation. **Daily**, the default, will cause the Sprite to automatically close the current file and open a new file at the beginning of each day. This allows you to separate each day into its own file. The Sprite supports a maximum of 99 files, therefore, if you enable this option you can hold a maximum of 99 days of data in memory before you must delete old data. If the Sprite runs out of files, it simply stops collecting data. **Manually** only creates a new file each time you physically start and stop collection.

Set The Current
Time: HH:MM

Allows you to set the time in the real time clock. The Sprite loses its setting if the power is removed. Enter the time in 24 hour military format.

Set The Current
Date: MM/DD/YY

Enter the correct month, day, and year. Only enter last two digits of year.

Display Data

This function displays data that has been collected by the Sprite onto the screen. You can even display data from the current file with this function.

After selecting this option, the Sprite displays the following screen for the Last file in the memory of the Sprite:

Press Change to select a different file, press Next to select the displayed file, or press Previous to return to the menu.

After pressing Next, the Sprite displays the following:

File Started On:
hh:mn mm/dd/yy

hh:mn indicates the hour and minute the file opened and **mm/dd/yy** indicates the date. Press Next and the screen shows:

File Goes Until:
hh:mn mm/dd/yy

hh:mn indicates the last hour and minute of data in the file and **mm/dd/yy** indicates the date. Press Next and the screen shows:

Record Interval
Length: hh:mn

hh:mn indicates the Record Interval used to collect the data.

At this point pressing Next begins the display of actual collected data. After the first interval is displayed, press Next again to advance to subsequent intervals. Press Previous to back up one interval. Pressing Change at any time while viewing the intervals returns you to the first screen shown in the Display Data function. Pressing Next after the last interval also returns you to the first screen.

Recorded data is displayed in the following fashion:

@@ hh:mn mm/dd/yy
1:xxxxx 2:yyyyy

hh:mn indicates the hour and minute the data and **mm/dd/yy** indicates the date. **xxxxx** is the total interval count for lane 1 and **yyyyy** is the total interval count for lane 2.

NOTE: Lane 2 totals are only shown if two lanes of data are collected.

All times are displayed in military fashion and as the start of the interval. For example, a time of 16:15 with a record interval of 15 minutes indicates that the displayed counts occurred from 4:15pm to 4:29:59pm on the displayed date.

Collecting Data Menu

This menu appears whenever the counter is collecting data. Note that collecting data proceeds normally even while you are using this menu.

Stop Collecting

This option stops data collection. The current file is closed and the Sprite will no longer put data into it.

Sure You Want To
Stop? No

Select “**Yes**” if you want to stop, anything else aborts the option and returns you to the menu.

Note: If the preset is still *Active*, no file has been opened and therefore this option will not close any file.

Show Status & Display Data

These options have already been described in the previous section.

Monitor Lanes

Use this option to view data as it is collected by the Sprite. This option does not interfere with the actual collection process, so it is safe to use at any time to verify counter operation.

—Monitoring—

1:xxxxx 2:yyyyy

Displays the current count total for each lane (if only one lane enabled, lane two is not shown). As each vehicle passes, the count for the appropriate lane will increase. Press **Next** to quit. An asterisk character (*) will appear in the upper right position of the screen if preset is *Active*. This asterisk disappears as soon as actual collection begins.

Keypad Operational Examples

The following section gives three examples using the keypad of the Sprite. The first example is of setting up the counter to collect count in two lanes using lane subtraction. The second example is of *Monitoring Status* to verify the counter is working properly.

Keypad Operational Examples

Note that these examples are not complete descriptions. You should refer back to **Section IV** for more in-depth information.

IMPORTANT:

In some cases, the Sprite will skip certain questions during setup if there is only one possible answer for it. For example, the Sprite will not ask questions pertaining to loops if you don't have a loop board installed in your counter.

These examples assume you have a loop board and two air switches. If your counter does not have a loop board, certain questions listed here will be skipped.

Start Collecting Example

- Install batteries. When counter turns on it will display:

Sprite V1.00a

<Self Test>

- After a few seconds, display will show:

SELECT OPTION:

Start Collecting

You are now in the *Not Collecting Data* menu and ready to proceed.

- Press **Next** key. Display will show:

Site (15 chars):

- Press the Change, Next, and Previous keys as needed to generate a Site ID. Pressing Next after the last character will advance to next option and screen will show:

Select Type Of
Sensor(s)? Tube

- Press **Next** key. Tubes are selected. Display then shows:

How Many Lanes
To Enable? One

- Press the **Change** to enable both lanes then press **Next**.

Start Collecting Example (continued...)

Select The Lane
Mode: Normal

- Press the **Change** until “Subtract” shows (to enable lane subtraction) and the press the **Next** key. Display will show:

Do You Want To
Divide By 2: No

- Press **Next** to skip divide by two and the display will show:

Record Interval
Length: 00:15

- Press **Change** until display reads “01:00”. Press **Next** when correct. Display will show:

— Input Test —
1: 0 2: 0

- The Sprite is programmed and is ready to be connected to road tubes. Connect two 1/4" road tubes to the counter. Place the tube connected to the #1 input across both lanes to be counted. Place the tube connected to the #2 input across the lane closest to the counter and only to the center line. You will be able to see vehicles being counted by watching display.
- Press **Next** key. Display will show.

-Setup Complete-
Press <Next>...

Finished. Press the **Next** key and the Sprite will go into a special low-power **Sleep Mode** while it collects data. Secure the lid mechanism and allow the counter to collect the desired amount of vehicle data.

When ready to retrieve the data, simply go back to the Sprite and use the Display Data function to read out the collected counts or take the unit back to the office (or bring a laptop or other data retriever to the field) and connect the serial cable and use *TrafMan* to poll the collected data from the counter.

Monitoring Status

This example describes how to verify the counter is operating after collection has been started. Monitoring data in no way interferes with collection and can be done at any time.

- Press **Next** key to wake up Sprite. Display will show:

SELECT OPTION:

Stop Collecting

- Press the **Change** key until the Monitor Lanes option displays. Display will show:

SELECT OPTION:

Monitor Lanes

- Press **Next** key. Display will show:

— Monitoring —

1: 0 2: 0

- You are now monitoring the count. Press **Next** when done. Display shows:

SELECT OPTION:

Monitor Lanes

- Press **Previous** and the counter will return to sleep still collecting data normally. You can also press **Change** until the Show Status option appears where you can check other operational functions.