

Chapter 15

INTRODUCTION

This section of the Data Entry Manual offers an overview of the System Studies Dial-a-Ducer™ as well as a detailed look at the requirements for collecting data, completing the data entry forms, and entering information into the PressureMAP™ database. It also identifies the two distinct ways in which Dial-a-Ducers can be structured for use in your PressureMAP system. Finally, the documentation explains how to use the diagnostics program for the Dial-a-Ducer and describes the differences in the realtime reading and handheld access programs for offices with a combination of standard and Dial-a-Ducer devices.

Note: Due to the unavailability of electronic components and mechanical parts for the Dial-a-Ducer, together with the introduction of the uM260 Micro Monitor™, manufacturing of the Dial-a-Ducer product line was discontinued in approximately 2005 with shipments of remaining new Dial-a-Ducers ending in 2009. Documentation for the product remains in this *PressureMAP System Data Entry Manual* to provide reference material for those who still have Dial-a-Ducers installed in their air pressure systems.

The reference to the uM260 Micro Monitor above is relevant because the modem version of the uM260 serves a function similar to the Dial-a-Ducer, although the Micro offers expanded monitoring capability. In fact, uM260 monitors are now being used to replace existing Dial-a-Ducers in small office or controlled environmental vault (CEV) locations.

DIAL-A-DUCER OVERVIEW

The installation of fiber optic cable in many outside plant environments has limited the use of common transducers which transmit their readings to a monitoring unit in the central office as electrical resistance values over copper conductor pairs. The Dial-a-Ducer is a small battery-powered electronic device that was developed by System Studies several years ago to communicate with PressureMAP via a telephone frequency signal rather than providing a resistive value over a continuous loop of wires. Consequently, it can be installed on the field side of a fiber loop in most dry, secure locations where a telephone line is available.

The Dial-a-Ducer provides three monitored outputs: typically one for pressure, one for flow and one contact alarm. If desired, it can also be set up to monitor two pressure sensors or two flow sensors in addition to the contact alarm.

In order to provide pressure and flow readings, the Dial-a-Ducer must be pneumatically connected to a Flow Finder™ which, in turn, is installed in an air flow path (air pipe, pressure tubing, etc.). The Flow Finder creates a slight pressure differential as air flows through it. This pressure differential value is transmitted from the Dial-a-Ducer to PressureMAP via dual tone multi-frequency (DTMF) and converted into an accurate pressure and flow reading.

Flow Finders are available in one of eight possible ranges: 0-9.5, 0-19, 0-47.5, 0-95, 0-190, 0-475 and 0-950 Standard Cubic Feet per Hour (SCFH). Pressure readings supplied by the Dial-a-Ducer are in the range of 0 to 30 Pounds per Square Inch (PSI).

Note: Due to the unavailability of electronic components and mechanical parts for the Dial-a-Ducer, together with the introduction of the uM260 Micro Monitor™, manufacturing of the Dial-a-Ducer product was discontinued in approximately 2005 with shipments of remaining new Dial-a-Ducers ending in 2009. The modem version of the uM260 Micro Monitor

DIAL-A-DUCER DATA ENTRY OVERVIEW

The Dial-a-Ducer is unique in that it can be set up as a stand-alone monitoring unit with its own office designation, or included in an office equipped with a Cable Pressurization Automatic Monitoring System (CPAMS) and other types of monitoring devices. Before the Dial-a-Ducer (DAD) can be placed in operation in your system, you need to determine what application better suits your monitoring needs. This section of the Data Entry Manual discusses the preparation process for Dial-a-Ducer devices used in both of these situations.

If the Dial-a-Ducer is to be the only monitoring equipment in an office, both office data preparation (which includes verifying the source records, calculating the sheath miles (S-M), and assigning location codes) and individual device data preparation must be completed before any data entry begins. When the Dial-a-Ducer device(s) is added to an existing office, only the actual device data preparation process needs to be completed before programming Dial-a-Ducer information to the PressureMAP database.

Please note that a Dial-a-Ducer device that has been disabled in PressureMAP for all functions will not post a reading. In order to reduce PressureMAP's call times, the device is not polled. However, realtime readings for a disabled Dial-a-Ducer can still be obtained through Diagnostics or the Specific Device Information screen's realtime option.

DATA PREPARATION

Data Preparation introduces a strategy for organizing the pressurization system data so that it can be entered easily into the PressureMAP database. The office preparation procedures outlined below pertain specifically to a Dial-a-Ducer office. Please note that only one Dial-a-Ducer is allowed in a designated Dial-a-Ducer office; consequently, the data preparation and data entry processes for a Dial-a-Ducer are very simple and straightforward. If you are adding a Dial-a-Ducer device(s) to an already existing office, however, please refer to subsection titled "The Dial-a-Ducer Device Data Form," which begins on page 15-10 of this section.

The Data Preparation process is comprised of three phases:

- I. Verifying the Source Records
- II. Performing PressureMAP-required Calculations and Assignments (Sheath or Tube Mileage and Location Codes)
- III. Completing Data Entry Forms

Verifying the Office Source Records

A key process when preparing a Dial-a-Ducer office for PressureMAP is to obtain and verify the source records for the office in question. The two primary office source records are:

- The Stickmap
- Cable Records

These two source records are used together to derive data for the PressureMAP office database. The stickmap serves as the chief data record, and is augmented by underground cable records, aerial and buried cable records, and conduit records. If possible, obtain all the available pressurization system records before you begin to assimilate the system data.

Once the source records have been acquired, these records need to be carefully checked to confirm that all the data is current, complete, and accurate. When checking the records, look for gaps and inconsistencies in the data and make corrections as the situation warrants. Cross-check the records to verify that the Dial-a-Ducer's pipe name, sheath assignment, location, etc. are the same on each of the source records. Also, any data that is lacking on these records must be obtained through further research.

IDENTIFYING SYSTEM COMPONENTS

As part of the Source Record Verification process, all the components that constitute the office cable pressurization system must be located and identified. Understandable, for a single Dial-a-Ducer installation, this process is relatively simple. Simply follow your company guidelines regarding the office inventory procedures. While identifying the system components, the accuracy of the pressure system records must be verified. If these records appear to be old or inaccurate, manually verify what equipment (panel, cable, etc.) will be monitored and update the records accordingly. You will need to follow your company guidelines for performing field verification.

Performing Calculations and Assignments

Regardless of whether you are preparing data entry information for a Dial-a-Ducer office or for a Dial-a-Ducer installation in a CPAMS-monitored office, it is necessary to calculate either the sheath or tube mileage for the Dial-a-Ducer's flow sensor. The sensors, both pressure and flow, also need to have a location code assigned, as explained below.

CALCULATING SHEATH MILES

In a Dial-a-Ducer office (an office with only one Dial-a-Ducer installed), it will be necessary to compute only the sheath mileage in the monitored flow device's Sphere of Influence. In CPAMS-monitored offices with multiple Dial-a-Ducers installed in the field (for example, at air pipe manifold locations), you must determine the sheath mileage of the monitored cables between devices. The distances between measurement points and the number of cables being monitored is then recorded on the appropriate stickmaps. In most cases, the number of cables can simply be multiplied by the footage between manifold midpoints (also called the Sphere of Influence), to get the total sheath feet. Convert this footage total to miles by dividing by the number of feet in a mile: 5,280. For more information on sheath mile calculation, please refer to Section 2, *Office Preparation*, in this manual.

CALCULATING TUBE MILES

The process for determining the Tube Miles (TUBE-M) for a Dial-a-Ducer flow device is even easier than computing sheath mileage. Using the office records, count the number of tubes feeding cables

from the flow device, and record this number on the appropriate stickmap or device data form. There is no need to calculate an OAU value, as the MAP software will automatically calculate OAU for the flow device using the TUBE-M of the device.

ASSIGNING LOCATION CODES

Once all the office source records have been verified and either the Sheath Miles or Tube Miles have been calculated, the next step in Phase II is to assign Location Codes to all Dial-a-Ducer locations and record them on the corresponding stickmaps. This requirement is particularly important for Dial-a-Ducers that are installed in CPAMS-monitored offices (offices with other devices). These codes provide an abbreviated label which identifies the position of each Dial-a-Ducer within the pressurization system. A Location Code is comprised of one to four alphanumeric characters. It is unique designation that cannot be duplicated within an office.

Please note that all sensors at a specific location will be assigned the same Location Code. For example, identical Location Codes would be assigned to a Dial-a-Ducer's pressure and flow sensors when located in the same access hole.

A recommended process for assigning Location Codes is as follows:

1. Start at the CO (central office) and assign Location Code "0" to this location. For a Dial-a-Ducer set up as its own office in PressureMAP, this will be the only location code required.
2. In multiple Dial-a-Ducer installations, assign Location Codes route by route at each Dial-a-Ducer location working outward from the CO.
3. Assign the Location Codes in a predetermined sequence.
4. Assign Location Codes directly on the stickmap.

It is important to note that assigning Location Codes is a critical part of the office preparation procedures. If an incorrect Location Code is recorded and entered into the PressureMAP database, it will hinder the program's leak locating capabilities. Apart from the CO and the duplicate number stipulations, Location Code number assignment is completely arbitrary. In this way a company can further personalize its PressureMAP office database by making alphanumeric assignments meaningful within the company. For example, point number variations and access hole numbers are sometimes used for location coding. It is recommended, however, that the Location Code assignments conform to some sort of numbering sequence.

Completing the Data Forms

To finish the data preparation procedures, the two primary data forms must be fully completed. Phase III involves compiling the system data and entering it onto the appropriate data forms. Once this phase has been completed, the actual data entry part of the PressureMAP setup procedures may begin.

The two data entry forms described in the following pages are designed to aid in the data entry process. Once the data entry forms are completed, information can be taken directly from the forms and entered into the PressureMAP data entry editor. When compiling data for the data entry forms, keep in mind that any extra information recorded on the forms, and therefore entered into PressureMAP, will produce a more thorough PressureMAP database.

THE OFFICE DATA FORM

The data collected on the Office Data Form is used to create the office communication database for PressureMAP. All information must be current, complete, and accurate as this information will be entered directly into the PressureMAP database during the data entry process.

For the Dial-a-Ducer, not all of the information requested on the Office Data Form (FIGURE 15-1) is mandatory. Normally, PressureMAP uses the information on this form to communicate with an office CPAMS monitoring equipment. Since the Dial-a-Ducer is essentially a self-contained monitor, it is critical that the information on both the office and device data forms be accurate and valid, or PressureMAP may not be able to function properly.

| Office Data Form | | |
|---------------------------------------|--|--------------------|
| Date of Form: | Date of Entry: | |
| Office Name: | | |
| Monitor Type: | (L1, L2, L3, 600, MPUZ, 740, 940, Teleducer 50, 5300B, V5, 5301A, 5318, E2A, TMACS, 101, 1005, NICOTRA MINI, TELSEC, 289H, USAM) | |
| Phone Number/IP Address: | Access # Type: | |
| Office Mode: | | |
| Baudrate: | User Defined Devices: | (ON/OFF) |
| Password 1: | Password 2: | |
| Trunk/Toll Tolerances: | | |
| Units: (SPARTON ONLY) | | |
| MAP Alert #: (289H/IH-M ONLY) | Map Alert Baudrate: | Alert Sensitivity: |
| Modem Site: (DIGI PORTSERVER II ONLY) | | |
| Remarks: | | |
| Pressure: | | |
| Flow: | | |
| Distance: | | |
| Aerial Std: | Buried Std: | Undgrnd Std: |
| Delivery Std: | Flow Std: | |

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FIGURE 15-1: OFFICE DATA FORM**Office Data Form Fields**

For a Dial-a-Ducer office not all of the data fields included on the Office Data Form are required. Only the ones described below need to be completed:

Office Name

The name of the central office or wire center is entered in this field. PressureMAP office names may be composed of up to 20 alphanumeric characters, with the first 8 characters being unique to each office. Offices, dispatch centers and alarm centers should never share the same name. Some words and types of punctuation are reserved by the program and cannot be used in an office name. Specifically, these reserved names and punctuation forms include:

Names: ALL, SYSTEM, SHORT, LONG, ACCEPT, DIAGNOSE
Punctuation: \ / | , . < > ? ; : " { } [] ! @ # \$ % & * () _ + = ' "

Monitor Type

This field specifies the actual type of CPAMS monitoring equipment being used in the office. When a Dial-a-Ducer is set up as an PressureMAP office (rather than being one of the other types of devices or Dial-a-Ducers installed in a CPAMS-monitored office), the designated office monitor type is *DAD*.

Phone Number/IP Address

For a Dial-a-Ducer office you will need to enter the number of the telephone line used to access the Dial-a-Ducer in this data field. (Although the form also indicates that an IP Address can be entered, LAN connectivity does not apply to a Dial-a-Ducer.) Before entering the phone number, make sure that you test the complete dialing sequence of the number. A detailed description of formatting requirements for this field is provided in Section 2 of the manual.

Office Mode

This field allows you to "Enable" or "Disable" the Dial-a-Ducer office in PressureMAP. If you are in the process of entering data for a new office, and the Dial-a-Ducer is not yet connected, the office database can be disabled from normal MAP functions, and enabled whenever you wish. The default value is set to *Enable*.

User Defined Devices

This field allows you to turn the user defined device number feature "on" or "off" for a particular office.

Normally, PressureMAP will scrutinize each device number as it is entered into the data editor to make sure that the device code and number conform to the CPAMS type designation and numbering system. However, with user-defined device numbering in effect, customized device codes can be used to help identify the device.

User-defined device codes can be composed of up to any 10 alphanumeric or other characters, with the exception of the following words and punctuation:

Words: REAL, LAST
Punctuation: () , / ^

Valid entries for the user-defined device number field are ON or OFF. By default, PressureMAP will turn user-defined device numbers to OFF. If you wish to take advantage of this feature, you will need to enter ON in this data field. Once you have set up an office with user-defined devices ON, we strongly advise against turning the feature off. If you later decide to turn the feature back on, you will need to re-input all the access numbers by hand.

Remarks

While not mandatory for data entry, PressureMAP provides a **Remarks** field in the office editor, allowing you to enter up to 70 characters of comments for operator messages or notes. An entry in this field will be saved with the office data until it is removed or edited.

The next three fields will only appear on the PressureMAP editor's Office Information Screen only if the International capability has been enabled. For more information on this feature, please refer to "International Measurement Fields" starting on the next page.

Pressure

This field controls the type of pressure device that can be entered into an office. The two units of measure that can be entered are KPA (Kilo-Pascals) or PSI (Pounds per Square Inch).

Flow

The units of measure for this field can be LPH (Liters per Hour) or SCFH (Standard Cubic Feet per Hour).

Distance

This field will accept either S-M (Sheath Mile), TUBE-M (Tube Mile), S-K (Sheath Kilometer) or TUBE-K (Tube Kilometers) as the unit of measure.

Aerial std, Buried std, Undgnd std

These three fields determine the cable pressurization standards used by the office. PressureMAP automatically defaults to these minimum pressure standards:

- Aerial cable—2.0 PSI or 10.0 KPA
- Buried cable—3.0 PSI or 30.0 KPA
- Underground cable—5.0 PSI or 30.0 KPA

If your minimum cable pressure standards differ from the ones listed above, then you will need to enter the pressure standards appropriate to your area into these data fields.

Delivery std

Enter the source delivery pressure standard for your office into this field. PressureMAP uses a default value of 7.5 Pounds per Square Inch (PSI). Note that you will not have to make an entry if this standard applies to your office. For an air pipe system, this value should be the desired delivery pressure at the end of the air pipe. However, this field is also used for the distribution panel delivery pressure standard for a single feed office (typically 10 PSI in this application). If you do change the default setting, the delivery pressure standard must be entered in tenths of a PSI, and the value must be between 0.0 and 10.0. (Please note that this field is not enabled if the *Office Information Screen* is using metric units of measurement.)

Flow std

This field holds the office air flow standard, measured in Standard Cubic Feet per Hour (SCFH). The program default setting is 1.25 SCFH (or 35.0 LPH). This standard is based on the OAU figure per sheath mile of cable. If this standard applies to your office, then you will not need to change the field value. However, if the air flow standard that you use in your office differs from the default value, then you will need to set the Flow standard. Values entered are in units of hundredths of SCFH, and can be between 0.50 and 9.99 SCFH.

Once the Office Information Form has been completed, the form should be double-checked for accuracy and retained for the data entry process. At this point, you are ready to compile the individual Dial-a-Ducer sensor information.

International Measurement Fields

If the International capability is enabled (a procedure that must be initiated by request from the System Studies Technical Support Department), a Dial-a-Ducer office can be created with distance and measurement values specified as metric units, standard decimal units, or a combination of the two. The data fields that contain these values are the **Pressure**, **Flow**, and **Distance** fields of the *Office Information Screen*. The values in these fields take effect in a device's Specific Device Information at the time the device is created or edited in PressureMAP. If the value in one of these fields is changed after a device has been entered, the existing device will not be changed until it is edited again in the *Specific Device Information Screen*.

The following screen example shows a Dial-a-Ducer office with the **Pressure** and **Distance** fields using metric units, and the **Flow** field using decimal (SCFH) units.

```

Info about DDUCER: Keypad Field Control, <Esc> finish screen,
                  <Return> next field, <Backsp> delete char, <Ctrl B> previous field

Enter Office Information
-----
File date:      03/21/2010  (080)                Last edited:      03/19/2010
Office name:    DDUCER                          Monitor type:     DAD
Phone number:   T9W123555-1212
Office mode:    ENABLED                          User Defined Devices: OFF

Remarks:

Pressure:      KPA                Flow:             SCFH                Distance:        S-K
                                           Flow std:        1.25                Undgnd std:     35.0
-----

```

SCREEN 15-1: OFFICE CONFIGURED WITH MIXED UNITS

The **Pressure** field, the first International Field of the *Office Information Screen*, will accept KPA (Kilo-Pascals), which is the metric equivalent of PSI (Pounds per Square Inch). If KPA is selected, the following *Specific Device Information* data fields will be modified for pressure devices:

STD and **Change (Chng)**—The units of measure for these two device data fields are set to KPA for all pressure devices.

THR and **Chg**—The units of measure are set to KPA for these two device data fields, which only appear for certain single feed pressure devices.

Manifold/KPA—The unit of measure and the label for this field are controlled by the Pressure field.

PSI and **Reference (Ref)**—The units of measure for these two fields are set to KPA. (**Ref** indicates the calibrated pressure of a flow transducer in a Positive Air Flow system.)

The **Flow** field will accept LPH (Liters per Hour), which is the metric equivalent of SCFH (Standard Cubic Feet per Hour). If LPH is selected, the following data fields on the *Specific Device Information Screens* will be modified:

Range—This device data field reflects the value (flow range) and units for a flow transducer. The metric ranges are: 270, 540, 1350, 2700, 13500 and 27000 LPH, which correspond to the SCFH ranges of 9.5, 19.0, 47.5, 95.0, 475 and 950. With System Studies' High Resolution Transducers, it is possible to read flows up to twice the specified range (up to 54000 LPH or 1900 SCFH).

OAU and SAU—These two device data fields contain the measured "volume per distance" of a device. The unit of measure for the "volume" portion can be set to LPH in the **Flow** Field of the *Office Information Screen*, while the "distance" portion is set in the **Distance** field.

Change (Chng)—The units of measure for this device data field are set to LPH.

The third International Field in the *Office Information Screen* is **Distance**. This field has two distinct uses: 1) to switch from PressureMAP's default S-M (Sheath Miles) setting to T-M (Tube Miles), and 2) to change certain data field values between decimal values and metric values. For example, you can specify either S-K (Sheath Kilometers), which is the metric equivalent of S-M (Sheath Miles), or TUBE-K (Tube Kilometers), which is the equivalent of TUBE-M (Tube Miles). If either S-K or TUBE-K is selected, the following data fields on the *Specific Device Information Screens* will be modified:

S/K or Tubes—This device data field contains either the sheath distance associated with a flow device (total number of kilometers within the device's Sphere of Influence or the number of tubes feeding sheaths from the flow device. It corresponds to the **S/M** field of device data entry.

OAU and SAU—These two device data fields contain the measured "volume per distance" of a device. The unit of measure for the "distance" portion is set in the **Distance** field of the *Office Information Screen*, while the "volume" portion can be set as a LPH value in the **Flow** field.

Distance 1, Distance 2—These two device data fields contain the distances between the device location and the office or field locations of related devices. The Leak Locating chart drawn by AlarmMAP will reflect the metric distance values of these fields.

The **Aerial std**, **Buried std**, and **Undgnd std** data fields in the *Office Information Screen* set the standards (minimum cable pressure requirements) for pressure devices monitoring aerial, buried, and underground cables in the office. The other pressure device types that can be entered in a metric office (FP, SP, and \$P), have the minimum cable pressure standard set during device data entry. The default metric values are: 10.0 KPA for Aerial and 30.0 KPA for both Buried and Underground.

You can also enter a value in the *Office Information Screen's* **Flow std** field or accept the default. This data field sets the flow standard (per sheath kilometer of cable) for the office. The default metric value is 35.0 LPH, which corresponds to the decimal default of 1.25 SCFH.

DEVICE DATA FORM REQUIREMENTS

The Dial-a-Ducer has its own Device Data Form to organize information for each sensor in the Dial-a-Ducer. Completing Device Data Forms is the last task associated with the PressureMAP data preparation process. To finish data preparation, all information from monitored pipe routes must be recorded on a device data form. Once this step has been completed, you may begin the data entry phase of the PressureMAP setup procedures.

When compiling device data for the form, it is important to remember that each sensor in the Dial-a-Ducer is associated with either a single air pipe, remote dryer, or central office sector. It is very important to note that a single sensor cannot be associated with more than one air source, as this would misrepresent the pressurization system. The minimum information for each Dial-a-Ducer sensor is:

- The Device Number
- The Device Type and TD Type (pressure or flow transducer, contact alarm or temperature sensor)
- The flow range of the sensor (if the sensor monitors air flow)
- The total sheath miles or tube miles associated with the sensor (if it monitors air flow)
- The physical address of the sensor
- The PressureMAP Location Code designation for the sensor
- The Sector or Pipe associated with the sensor
- The sheath name (or number) that the sensor monitors (multiple sheath numbers might be needed for a Dial-a-Ducer that monitor manifolds)
- The Dial-a-Ducer phone number (this information is not required if the Dial-a-Ducer has been set up as a PressureMAP office and its phone number entered onto the Office Data Form)
- The stickmap number on which the Dial-a-Ducer device appears (existing office stickmaps may need to be updated)

THE DIAL-A-DUCER DEVICE DATA FORM

Listed on the next several pages are descriptions of the data fields found on the Dial-a-Ducer Device Data Form (FIGURE 15-2). The fields are presented in the order they appear on the data form, which is also the order that the data is entered into the PressureMAP Data Entry Editor.

General Information

At the top of each form, you will see the general fields for the Office, Pipe, Date, Engineer and Page number of the form that you are filling out. Before entering any data concerning the monitoring sensors, be sure to fill out this header information.

Also located at the top of the Device Data Form are the three function boxes: Add, Delete, and Change. These boxes allow the data forms to be used for several purposes. Be sure to check the appropriate function box before completing the data form. Also, when filling out the Device Data Forms, it is recommended that you group all similar data entry functions together (for instance, place all "Change" data forms into one group). This will aid with the data entry process and minimize the chance for data entry errors.

Dial-a-Ducer Device Data Fields

Once the header information is complete, you may begin to record the actual monitoring sensor data. Below, a definition is given for each data field found on the Dial-a-Ducer Device Data Form.

Each definition includes a description of the data field, the maximum length of each data field, the type of entry expected (numeric or alphanumeric), and any default values that PressureMAP may assign to the field.

If a default value is listed for a particular field, the value that is given is simply the value that PressureMAP will assign to the field if nothing else is input into the data field. If the value that you are going to enter into the field is the same as the PressureMAP default value, then all you will need to do is press **<Return>** for that field, and PressureMAP will insert its default value.

The following fields will appear on the *Primary Specific Device Information* screen of the data entry editor.

DEVICE #

This data field records the number of the monitoring sensor. The device number format is very important, because it is this format that signals PressureMAP that the device is a Dial-a-Ducer. The device number **must** always start with the letter D. The format for entering a device number is as follows:

D5555-1

In the example above, the letter D is the designation for the Dial-a-Ducer device. The four 5s represent any four numbers, and are usually the last four digits of the device phone number. The dash **must** be inserted before the last number. The last digit of the hyphenated number represents the port number of the device: valid numbers are 1-4 and alpha character A. Value of **1** reads a flow transducer; **2** reads a pressure transducer; **3** reads temperature transducer; **4** is for future use; and **A** reads a contact alarm.

User Defined Device Numbers

PressureMAP gives you the ability to create User Defined Device Numbers when naming your monitoring devices in the PressureMAP program. User Defined Device Numbers are created from any 10 keyboard characters, with the exception of the following:

REAL LAST () , / ^ '

If you wish to take advantage of User Defined Device Numbers, you must specifically turn this feature ON from within the Office Information Screen. When you do, the required Dial-a-Ducer number, D5555-1 for example, becomes the access number. You can then assign up to any 10 character designation to the Dial-a-Ducer device number. For more information on this option, please refer to the description of "User Defined Device Numbers" under the Office Data Form segment in Section 2 of this manual, or contact System Studies Technical Support.

| | | | | |
|-------------------|--------------------------------------|---------------------------------|------------------------------------|------------------------------------|
| Page ____ of ____ | Dial-a-Ducer Device Data Form | Add <input type="checkbox"/> | Delete <input type="checkbox"/> | Change <input type="checkbox"/> |
| Office: | Pipe: | Engineer: | Date: | |

| Primary Specific Device Information | | | | |
|--|----------------|-----------------------|------------------------|---------------------------|
| Device #: D █ █ █ █ - █ | Access #: (6) | Type: (2) | Range: (4) PSI: (4) | S-M: (7) SAU:/STD: (4) |
| Address: (30) TD Type: (8) | Loc: (4) | Pipe: (4) OAU: (4) | Norm: (7) Chng: (4) | |
| Sheath(s): (7-15 times) | | | | |
| Prim Cable: (7) | Prim Pair: (7) | Sec Pair: (7) | Sort Key: (5) | |
| Plat #: (8) | Stickmap: (4) | | | |
| Remarks: (70) | | | | |

The entry in the Device # field must always start with the letter D. Format is: D5555-1, letter D is designation for the Dial-a-Ducer device, the four 5s represent the last four digits of the device phone number. The dash **must** be inserted before the last number. The last digit of the hyphenated number represents the port number of the device: valid numbers are 1-4 and alpha character A. Value of **1** reads a flow transducer; **2** reads a pressure transducer; **3** reads a

| Monitor Specific Device Data | | |
|-------------------------------------|-----------------------|------------------|
| Latitude: (10) | Longitude: (11) | |
| Office 1 Loc: (4) | Distance 1 (kft): (4) | Field 1 Loc: (4) |
| Office 2 Loc: (4) | Distance 2 (kft): (4) | Field 2 Loc: (4) |
| Phone #: (8) | | |

The screens that complete the device data entry procedure are the Primary Specific Device Information Screen, the Monitor Specific Device Screen, the Device Comments Screen, and the Cable Readings Screen. These screens are accessed from the Primary Specific Device Information Screen, by using the **<PgUp>** and **<PgDn>** keys (if you are at the MAP Computer main console) or by entering the keystrokes **<Ctrl><F>** (forward one screen), and **<Ctrl><R>** (back

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FIGURE 15-2: DIAL-A-DUCER DATA ENTRY FORM

ACCESS #

The **Access #** field will be displayed only if User Defined Device Numbers is turned ON. The **Access #** field holds the actual access number that is used by PressureMAP when interrogating the device. This number **must** use the D5555-1 format discussed earlier under the **Device #** field.

TYPE

This field holds the PressureMAP two-letter Device Type. For more information on assigning PressureMAP Device Types, please refer to Appendix 1, PressureMAP Device Types. PressureMAP uses a default Device Type of UP in this field, representing an underground pressure transducer.

RANGE

This field needs to be filled in only if the Dial-a-Ducer sensor device is a flow device. If the sensor in question is a flow monitoring device, then enter the range of the Flow Finder to which the Dial-a-Ducer is attached in this field. Record flow ranges for the following device types: SF, DF, RF, MF, LF, CF and \$F.

PressureMAP's flow range entries are calibrated to the nearest tenth. In order to correctly enter a 0-95 SCFH flow range, for example, enter "95.0" or "950". The decimal point is automatically added by the PressureMAP editor. Because of this, the final digit of each entry will represent the number one place to the right of the decimal point.

PSI

This field will only be displayed for a Dial-a-Ducer pressure sensor in a source pressure transducer application (SP PressureMAP device type). The SP device type requires an entry in this field; however, please note that since the Dial-a-Ducer device reads pressure from 0 to 30.0 PSI, the entry in the **PSI** field does not affect the pressure readings in PressureMAP.

S-M

The Sheath Mile (S-M) field only needs to be completed for Dial-a-Ducer sensors that monitor air flow. Rather than sheath mileage, if you have counted the number of tubes that your Dial-a-Ducer flow sensor monitors, enter the number in this field. Using Tube Miles requires that you contact the System Studies Technical Support Department and have them enable the International capability. (See description of the **Distance** data field in the Office Information description above.)

If you only have an OAU value, then that number can be entered in the OAU data field, and PressureMAP will automatically calculate the corresponding S-M value.

OAU

This field must be completed only for sensors that monitor air flow. If the sensor in question is a flow monitor, and you have not entered the sheath milage value in the **S-M** data field, then enter the OAU value into this field.

The minimum OAU value that PressureMAP will accept is one tenth (or ".1"). As a result, the PressureMAP editor will accommodate only one space to the right of the decimal point. If you were to enter ".17" for an OAU value, PressureMAP would record this entry as "1.7" (PressureMAP automatically places the last numeric digit one space to the right of the decimal point).

SAU

This field stands for the Standard Air Usage of high priority flow devices (\$F devices). The value placed in this field should be the normal, stable flow of the device.

STD

This field will be displayed only for Dial-a-Ducer pressure sensors when they are used in high priority (\$P) applications. The STD value is the standard, normal PSI value of the sensor.

ADDRESS

This field holds the Dial-a-Ducer address location. Find the address on a stickmap or street map and abbreviate it with 30 characters or less, as shown in the examples below:

- For pipe panels: (PIPE PANEL-A, NORTH)
- For distribution panels: (DIST. PANEL-C, SOUTH)
- For underground device locations: (MH-54, WILLIS & 5TH AVE.)

For all aerial and buried device locations, use the pole numbers and cross streets, terminal numbers, building names, footage, or whatever else is necessary to thoroughly identify a device location. Note: Be sure to use the same spelling in the abbreviation every time. The "Histories by Address" function matches spelling to call up the history.

TD TYPE

The Dial-a-Ducer internal sensors output in loop current, with the default TD type being DF/9.5. A list of the TD Type code words and a brief explanation of their usage follows in TABLE 15-1.

Dial-a-Ducer Transducer Types**Flow—SCFH**

| | |
|----------|-------------------------------|
| DF/9.5 | Flow Transducer, 0-9.5 SCFH |
| DF/19.0 | Flow Transducer, 0-19. SCFH |
| DF/47.5 | Flow Transducer, 0-47.5 SCFH |
| DF/95.0 | Flow Transducer, 0-95.0 SCFH |
| DF/475.0 | Flow Transducer, 0-475.0 SCFH |
| DF/950.0 | Flow Transducer, 0-950.0 SCFH |

Flow—LPH

| | |
|----------|------------------------------|
| DF/270 | Flow Transducer, 0-270 LPH |
| DF/540 | Flow Transducer, 0-540 LPH |
| DF/1350 | Flow Transducer, 0-1350 LPH |
| DF/2700 | Flow Transducer, 0-2700 LPH |
| DF/13500 | Flow Transducer, 0-13500 LPH |
| DF/27000 | Flow Transducer, 0-27000 LPH |

Pressure—PSI

| | |
|---------|---------------------------------|
| DP/15.0 | Pressure Transducer, gauge type |
|---------|---------------------------------|

Pressure—KPA

| | |
|----------|---------------------------------|
| DP/100.0 | Pressure Transducer, gauge type |
|----------|---------------------------------|

Other Device Applications

| | |
|--------|---|
| DT/167 | Fahrenheit Temperature Transducer, (FT device type) |
| DI | Digital Input (CA device type); support the following values: 0x0 -> Logical 0 0xF -> Logical 1 |

TABLE 15-1: DIAL-A-DUCER TRANSDUCER TYPES**LOCATION**

Enter the Location Code for each Dial-a-Ducer sensor into this field. The Location Code is an alphanumeric abbreviation assigned to all devices stationed at one particular location. Note that all sensors in a Dial-a-Ducer would share the same Location Code. Location Codes may consist of up to four alphanumeric characters. However, Location Codes are normally designated as numbers between 0 and 999.

Note: All devices in the CO must be given a Location Code of 0 unless the distribution panel is attached to the pipe.

PIPE

This field contains the pipe designation with which the device is associated. Pipe names are arbitrary designations consisting of a maximum of four characters. Assigned or existing pipe names should be used in this field (refer to the stickmaps for this information).

If air pipe is not used in the Dial-a-Ducer installation, then this field should contain the Sector name of the air source.

Devices in the central office that are not associated directly with an air pipe are part of the central office sector. These devices are designated as: CO.

Remote dryers and pole mounted compressors are separate air sources that require their own pipe designations. It is recommended that remote dryer pipe designations include the letter "R" (for remote) and a single or multiple numeric identification (for example: R1, R12, RD-1, etc.). When recording the pipe designations of devices associated with a remote dryer, include only those devices on the FIELD side of the dryer. For more information on field locations, please refer to the data field titled *Field 1* later in this segment.

Devices on the office side of a remote dryer are associated with the air source originating in the central office (see FIGURE 15-3). An exception to this rule applies when the remote dryer is located at the end of the cable run. In this situation, the first pressure transducer on the office side of the remote dryer is associated with the remote dryer and not the air pipe (see FIGURE 15-4). This exception makes it possible for a remote dryer to fulfill the minimum requirements for establishing a System Quality Index (SQI).

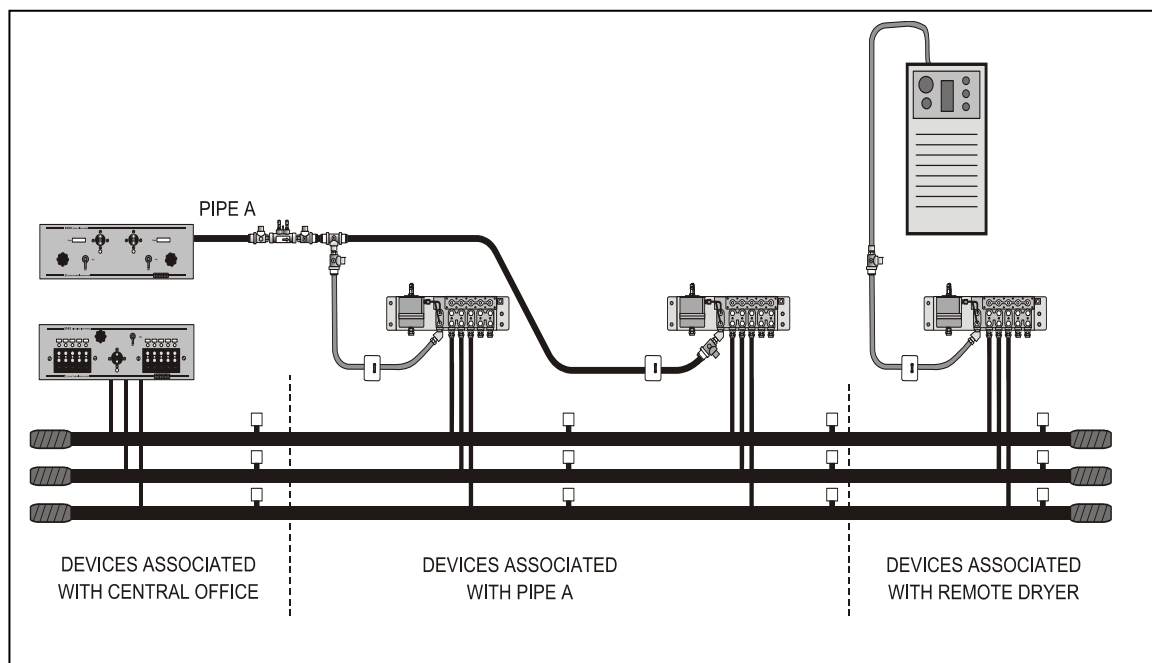


FIGURE 15-3: DEVICES ON OFFICE SIDE OF A REMOTE DRYER

Supplementary air pipes, such as maintenance pipes and splicer pipes are commonly designated as: SP, BP (Buffer Pipe), SP1, etc. Separate toll/trunk pipe panels often begin with: TP followed by a number or geographical designation relating to one of the points on a compass. Select the designation that works best in your system.

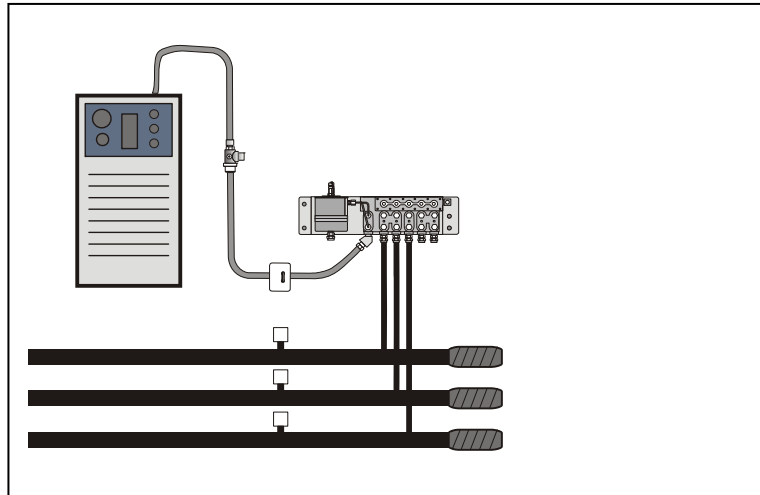


FIGURE 15-4: REMOTE DRYER AT THE END OF A CABLE RUN

NORM

This data field needs to be completed for all Dial-a-Ducer contact alarms. The input for this field should reflect what the device reads in its normal, non-alarm state. For Dial-a-Ducer contact alarms, this field will only read **OPEN**.

CHNG

This field is used in conjunction with the \$F and \$P devices, as well as the **STD** and **SAU** fields described above. This field contains the amount of change (either in pressure or flow, depending on the type of high priority device) that can be tolerated before the device goes into alarm. For pressure devices, the CHNG value is the PSI drop allowable from the value indicated in the **STD** field before an alarm condition is acknowledged. For flow devices, the CHNG value indicates how many SCFH the device increases before an alarm is given.

For the Dial-a-Ducer pressure sensor, this field will default to a value of 1.5 PSI, while the flow sensor will give a default value of 2.0 SCFH.

SHEATH(S)

This field holds the sheath number or identification of the cable being monitored. It may also be used to identify the cables being fed by an air pipe manifold or distribution panel.

The sheath assignment for a device is generally listed on the stickmap. Sheath entries are limited to seven alphanumeric characters in length. As many as 15 individual sheath entries may be input into this data field.

CABLE

This field holds the primary cable number. This will be the "read" cable that contains the phone line connected to the Dial-a-Ducer. Entries are limited to seven alphanumeric characters.

SORT KEY

This field is for user defined device sorting. Sort Key designations may hold a maximum of five alphanumeric characters. Option 10 of the Device Histories Menu uses this field to generate reports for all devices with the same Sort Key designation.

PLAT #

Fill in the underground, buried, or aerial record number in this data field. Plat numbers may be up to eight alphanumeric characters in length.

STICKMAP

This field holds the sheet number of the office stickmap on which the device appears. Stickmap entries may consist of a maximum of four alphanumeric characters.

REMARKS

This data field allows for a 70-character remark to be entered concerning the device.

The following device information fields will appear on the *Monitor Specific Device Screen* of the data entry editor. This screen is accessed from the Primary Specific Device Information Screen, by using the <PgUp> and <PgDn> keys (if you are at the MAP Computer main console) or by entering the keystrokes <Ctrl><F> (forward one screen), and <Ctrl><R> (back a screen).

LATITUDE

Beginning with PressureMAP Version 28, the format used for latitude and longitude information is *decimal degrees*, although the legacy *degrees and decimal minutes* format can be entered, if desired, during data entry. Once latitude and longitude data in the legacy format have been entered and saved, PressureMAP will convert the coordinates to decimal degrees.

An example of the old format used and the corresponding decimal degrees format is shown below:

| <u>Degrees and Decimal Minutes</u> | <u>Decimal Degrees</u> |
|------------------------------------|------------------------|
| N36+58.447 | 36.974117 |

This text field accepts either of these formats:

- Degrees and Decimal Minutes: lff+mm.mmm, with l designating which hemisphere the latitude applies to (one of the following single letters: N or S); ff is an integer between 00 and 90 that indicates the degrees of latitude; and mm.mmm is an integer between 0.0 and 59.999 that designates the minutes of latitude.
- Decimal Degrees: lff.mmmmm, with l being used only to designate a minus value (-) for a position south of the equator. (Note: latitude positions north of the equator do not require an l designation.) The letters mmmmm represent an integer between 000000 and 999999.

When adding new devices, the latitude field is carried over to the new device, so the default value for this field will be derived from the last device added.

LONGITUDE

This text field accepts either of these formats:

- Degrees and Decimal Minutes: hfff+mm.mmm, with h designating which hemisphere the longitude applies to (one of the following single letters: E or W); fff is an integer

between 000 and 180 that indicates the degrees of longitude; and mm.mmm is an integer between 0.0 and 59.999 that designates the minutes of longitude.

- Decimal Degrees: hfff.mmmmm, with h being used only to designate a minus value (-) for a position west of the Prime Meridian, which is the longitude that runs through Greenwich, England. (Note: longitude positions east of the Prime Meridian do not require an h designation.) The letters mmmmm represent an integer between 000000 and 999999.

When adding new devices, the longitude field is carried over to the new device, so the default value for this field will be derived from the last device added.

Office and Field Locations do not necessarily apply to each device. If not, these fields should be left blank. When a device's Office Location entry is blank, the corresponding Distance field is also left blank. A device in the central office is NEVER assigned an Office 1 or Office 2 location. Devices monitoring the air pipe (such as SF, SP, PP and EP device types) do not require Office and Field entries, as PressureMAP reviews the entire route when these devices come into alarm.

OFFICE 1 LOC

This field holds the Office 1 Location Code. The Office 1 location is the code of the first device location toward the central office from the designated device location where the cable in question is either fed or monitored. This data field does not apply to devices in the central office itself or to pressure devices on a pipe.

DISTANCE 1 (kft)

This column is used to record the distance, in kilofeet, from the specified device location to the OFFICE 1 location. A numeric entry must be made into this position. This data field does not apply to devices located in the central office or pipe pressure TDs.

OFFICE 2 LOC

This field holds the Office 2 Location Code. If two monitored sheaths on the office side of a device location converge into one sheath at the device location, office Location Codes are assigned to the closest device locations on each of the two sheaths. Either device location may be designated as "Office 1"; the remaining one is "Office 2". (Refer to Appendix 2 for examples of "Office 2" and "Field 2" assignments.) Reference the stickmap to determine if a sheath splits.

This data field does not apply to devices located in the central office or pipe pressure TDs.

DISTANCE 2 (kft)

The distance from the specified device location to the Office 2 location. Enter the distance, in kilofeet, to the Office 2 location. Entries must be numeric.

FIELD 1 LOC

This column designates the Field 1 Location Code. This column lists the Location Code of the first device location on the field side of the specified device where the cable is either fed or monitored.

Notice that a Distribution panel flow device with an assigned Location Code of "0" will have an entry in this field. Only the following types of devices are not assigned any Field Location codes: pipe pressure transducers, pipe panel flow transducers, and contact alarms.

FIELD 2 LOC

Enter the Field 2 Location Code into this field. If a sheath splits on the field side of the device location, the closest monitoring device on each of the two sheaths is assigned a field Location Code. Either device location may be designated as "Field 1"; the remaining one is "Field 2". (See Appendix 2 for a detailed look at Office and Field situations.)

PHONE #

This is one of the most important fields for the Dial-a-Ducer device, unless the Dial-a-Ducer is being set up as its own office, in which case the **Phone #** field does not appear. In applications where a Dial-a-Ducer is being installed in an office that is already monitored by a CPAMS (289H LSS, Sparton, etc.) this field contains the phone number assigned to the device. The complete phone number must be used, including any and all supplemental prefixes in the numeric sequence. Some examples of a prefix may be the **9** used in Centrex telephone systems (used to initiate calls outside the system) or the **1** that is needed to initiate a long distance call.

Also, time any pauses that need to be made in order to receive dial tone or make a circuit connection. Wherever a delay is noted, insert a **W** or one or more commas in the telephone number string to indicate that a pause is required. A **W** in the dialing sequence instructs PressureMAP to wait for a dial tone before continuing, while a comma in the number sequence will instruct the PressureMAP modem to pause for only two seconds before continuing with the dialing.

Inserting a capital **T** in the phone number sequence instructs the modem to use tone dialing. Notice that not every telephone exchange has this capability, and because of this, PressureMAP will default to pulse dialing if no **T** is encountered in the telephone number string. Inserting a capital **P** in the sequence will instruct the modem to dial using a pulse dialing method.

MULTIPLE DIAL-A-DUCER OFFICES WITHIN A MEGA OFFICE

Beginning in Version 26, PressureMAP can be structured to include one or more Mega Offices, each of which is comprised of several smaller offices equipped with a Dial-a-Ducer, uM260 Micro Monitor, Universal Stand-Alone Modules (USAMs) or other type of CPAMS. The Mega Office enables you to map the devices from individual offices to a single office destination for easier device access, more efficient alarming, etc. When a Dial-a-Ducer office (or other type of small office) is established with the intention of placing it into a Mega Office, special licensing considerations are made so that these small offices are not considered as individual offices when establishing system office limitations. In this respect, utilizing the Mega Office makes sense not only for overall monitoring performance, but also for maximizing the office monitoring capabilities of a PressureMAP system.

Please refer to Appendix 4 of this manual for instructions on how to set up a Mega Office in the PressureMAP database. The instructions include an explanation of the various functions of the Mega Office Editor.

When several smaller offices are to be combined into one larger PressureMAP Mega Office, obviously it is important that the Device Numbers remain unique. If you follow the recommended

device numbering procedure described for the **Device #** field in the “Dial-a-Ducer Device Data Fields” segment in this section, you will not duplicate device numbers. Additional numbering suggestions are given in Mega Office Data Entry section of the manual.

CPAMS DIAGNOSTICS

The CPAMS Diagnostics program has four parts. The first two options perform diagnostics on the System Studies 289H Loop Surveillance System monitor and the WECO E2A Remote Terminals. The third option is a gateway from PressureMAP to other monitoring systems, allowing manual scans, maintenance operations or even CPAMS data entry to be performed without leaving the PressureMAP program. These three sections of CPAMS Diagnostics are described in the *PressureMAP Operations Manual*.

The fourth part of CPAMS Diagnostics program performs diagnostics on the Dial-a-Ducer. The diagnostics menu for the Dial-a-Ducer has three options: Dial-a-Ducer Test, Realtime Reading Test, and Specific Device Information. The three options, as well as access to the Diagnostic Program, are described below.

Dial-a-Ducer Diagnostic Tests

Before you can begin working with the Dial-a-Ducer Diagnostics programs, you must first bring the CPAMS Diagnostics Menu to your screen. The following procedure explains how to do that. The Menu Level assigned to your User Account will determine where you start in this procedure. If you entered at the System Options Menu, begin this procedure at Step 1. If you began at the MAP Programs Menu, go to Step 2. If you have trouble gaining access to the MAP System, please contact your System Administrator or call the System Studies Technical Support Department. If you logged into the System Options Menu, you should see SCREEN 15-2.

```
System Options                                MAP Series XX.XX.XX
01/02/2010 08:43                            System Studies Incorporated
-----
System Options
-----
 1. Select MAP Program
 2. Select MAP Data Entry
 3. System Administration
 4. Language Selection
 Q. Quit

Choice?
```

SCREEN 15-2: SYSTEM OPTIONS MENU

Procedure:

1. From the System Options Menu, press **1** followed by **<Return>**. After pressing 1 at the System Options Menu, or if you logged in at the MAP Programs Menu, you should see the menu illustrated in SCREEN 15-3.

```

MAP Programs                                MAP Series XX.XX.XX
01/02/2010 12:42                          System Studies Incorporated
-----

MAP Programs
-----
 1. PressureMAP
 2. ReportMAP
 3. CableMAP
 4. AlarmMAP
 5. DryerMAP
 6. CPAMS Diagnostics
 7. User Initiated Operations
 Q. Quit

Choice?

```

SCREEN 15-3: MAP PROGRAMS MENU

Note: If the Menu Level assigned to your User Account brought you into the PressureMAP system at a level other than System Options or MAP Programs, you cannot get into the Diagnostics Program. See the definitions of menu levels and quicklogins in the introduction to Section 5, User Management, in the System Administration Manual.

- From the MAP Programs Menu, select CPAMS Diagnostics. Press **6** followed by **<Return>**. You will then be prompted for the office name.

```
CPAMS Diagnostics for which office?
```

Selecting an office is done by entering either the office name or number at the prompt. To enter an office name, you may either type the full name of the office, or you may enter an office name abbreviation to indicate the office you have chosen. You may obtain a complete listing of the offices entered into the PressureMAP system, by typing a question mark (?) followed by <Return>.

If you type a <Return> without entering an office name, you will be taken back to the MAP Programs Menu where you can choose to run a different MAP program or re-access CPAMS Diagnostics.

- After inputting an office name or number (in this example, an office with both Dial-a-Ducer and CPAMS devices) you will see the question:

```
Do you want Diagnostics for a Dial-a-Ducer?
```

If you answer Y (for yes), the Dial-a-Ducer Diagnostics Menu (SCREEN 15-4) will appear.

If you are accessing an office with only Dial-a-Ducer devices, the question will not be displayed, and the program will proceed directly to the Dial-a-Ducer Diagnostics Menu.

```

Dial-a-Ducer Diagnostics Menu
-----
  1. Dial-a-Ducer Test
  2. Realtime Reading Test
  3. Specific Device Info

Choice?

```

SCREEN 15-4: DIAL-A-DUCER DIAGNOSTICS MENU

The Diagnostics Tests

The procedures for running the Diagnostic Tests are easy. In most cases, you simply enter the specific device or access number that you wish to inspect. After contact is established and the testing is completed, results from the testing are output to the computer terminal (or printer) where you can study the outcome. All test procedures begin at the Dial-a-Ducer Diagnostics Menu shown in Screen 15-4.

Note: If you wish to step back to the previous menu (for example, if you wish to run tests on a different office), press **<Return>** without selecting one of the diagnostic tests. If you do so, you will return to the prompt where you can select a new office and/or test mode.

DIAL-A-DUCER TEST

This test will show the current status of each sensor in the Dial-a-Ducer device that contains the sensor number you enter. After selecting the Dial-a-Ducer Test (by pressing **1** followed by **<Return>**), you will see the prompt:

```
Test which Dial-a-Ducer?
```

After entering a Dial-a-Ducer sensor number, you will see a screen similar to the one illustrated in SCREEN 15-5. This screen displays the current status of the Dial-a-Ducer device you have selected. In the screen example, the Dial-a-Ducer model consists of one flow, one pressure, one temperature, and one contact device.

```

Dial-a-Ducer Test                                CPAMS Diagnostics XX.XX.XX
01/02/2010 13:37                                System Studies Incorporated
-----
          PROTOCOL:                               01
          REVISION:                               44
          CONFIGURATION:                          1230
          0 = unused  1 = flow  2 = pressure  3 = temperature

          PORT          RAW COUNTS
          ----          -
          1             0000
          2             0022
          3             0333
          4             4444
          A             F

          Again?

```

SCREEN 15-5: DIAL-A-DUCER TEST DISPLAY

The five fields displayed on the screen are described below:

PROTOCOL

This field indicates what "language" the Dial-a-Ducer is speaking. The Dial-a-Ducer language will vary by model type. This information is useful to System Studies Technical Support personnel.

REVISION#

The version number of the Dial-a-Ducer. This information is also useful to System Studies Technical Support personnel.

CONFIGURATION

This field indicates the sensor types in the Dial-a-Ducer you are testing. The typical configuration is one pressure sensor, one flow sensor, a temperature sensor and a contact device. This field is used to verify that the correct device type is entered into PressureMAP for each sensor in the Dial-a-Ducer device.

PORT

This column lists the four main sensor ports and the one alternate port.

RAW COUNTS

The raw ADC counts returned by each device sensor. This information is useful to System Studies Technical Support personnel.

If you wish to run the test again on the same Dial-a-Ducer, answer **Y** for yes at the **Again?** prompt. If you wish to test a different Dial-a-Ducer or run a different test, answer **N** and you will again see the prompt:

Test which Dial-a-Ducer?

Enter the device number, or press **<Return>** to return to the Dial-a-Ducer Diagnostics Menu.

REALTIME READING TEST

The Realtime Reading Test is primarily a tool for servicing the Dial-a-Ducer. The realtime reading function offered through PressureMAP's Specific Device Information feature is the preferred method of obtaining realtime readings for checking the pressurized cable system.

After you select a Realtime Reading Test from the Dial-a-Ducer Diagnostics Menu by pressing **2** followed by **<Return>**, you will be asked for the Dial-a-Ducer device number:

Test which Dial-a-Ducer?

You may enter either the assigned device number for one of the Dial-a-Ducer's sensors, or its corresponding access number. Access numbers are entered with a leading sharp character (e.g. #D9999-4) to distinguish them from device numbers. Upon entering a valid device number you will see the realtime reading for that device repetitively displayed on a screen similar to SCREEN 15-6.

```

Realtime Reading Test for <OFFICE NAME>          CPAMS Diagnostics XX.XX.XX
01/02/2010 13:38                               System Studies Incorporated
-----

```

| Access # | TD Type | Counts | Reading |
|----------|---------|--------|---------|
| D1234-1 | DF/19.0 | 4561 | 23.5 |
| D1234-1 | DF/19.0 | 4561 | 23.5 |
| D1234-1 | DF/19.0 | 4561 | 23.5 |
| D1234-1 | DF/19.0 | 4561 | 23.5 |
| D1234-1 | DF/19.0 | 4561 | 23.5 |
| D1234-1 | DF/19.0 | 4561 | 23.5 |

SCREEN 15-6: REALTIME READINGS TEST DISPLAY

The four fields displayed on the screen are described below:

Access #

While the user is asked to input either the PressureMAP device number or the corresponding access number to do a realtime reading on a specific Dial-a-Ducer sensor, only the access number of that device is displayed. A list of device numbers with the corresponding access numbers can be reviewed in the PressureMAP Device Log.

TD Type

This field represents the type and range of the sensor selected. The example in Screen 15-6 shows a flow device monitoring a distribution panel, with a range of 19.0 SCFH.

Counts

The raw ADC counts returned by the Dial-a-Ducer. This information is useful to System Studies Technical Support personnel.

Reading

This output value represents the **unbiased** reading for that type of Dial-a-Ducer sensor.

Realtime readings will continue to be posted to the screen until **<Esc>** is pressed, at which time you will be prompted for another device number. Enter another device number followed by **<Return>** to perform another Realtime Reading Test. Hit **<Return>** at the device number prompt to return to the Dial-a-Ducer Diagnostic Menu.

SPECIFIC DEVICE INFORMATION

The third option of the menu, Specific Device Info, is provided so device information can be viewed without having to leave the Dial-a-Ducer Diagnostic Menu. The screen of information that is displayed is essentially the same screen displayed by the PressureMAP option, Specific Device Information. This screen is described in detail in Section 2 of the *MAP System Operations Manual*.

Please note that a Dial-a-Ducer that has been disabled in PressureMAP for all functions will not post a reading. However, you can use the realtime option (**REAL,<device#>**) in Specific Device Information to obtain a reading for a disabled Dial-a-Ducer.

```

Specific Device Information for <OFFICE NAME>          CPAMS Diagnostics XX.XX.XX
07/12/2010 13:38                                     System Studies Incorporated
-----
Device #: 001A          Access #: D5555-1          Type: MF Range: 9.5 S-M: 6.0
Address: MH-20 SOQUEL          Loc: 15 Pipe: BA OAU: 7.5
TD Type: DF/9.5
Sheath(s): 02

Cable:      02          Prim Pair: 704          Sec Pair:          Sort Key:
Plat #:     UG-7          Stickmap: 5          Phone: TW555-5555

Latitude:   N30+15.456          Longitude:   E130+25.789

Office 1 Loc: 14          Distance 1 (kft): 2.9          Field 1 Loc: 16
Office 2 Loc:          Distance 2 (kft):          Field 2 Loc:

Remarks:
Readings          Curr Last Tdy -1 -2 -3 -4 -5 -6 Wk-1 Wk-2 Wk-3 Wk-4
-----
                12.0 12.0 7.0 7.0 7.0 7.0 7.0
Manifold/PSI:    2.2
                06/07/09
                02      2.5

```

SCREEN 15-7: SPECIFIC DEVICE INFORMATION DISPLAY

DIAL-A-DUCER AND THE REALTIME AND HANDHELD PROGRAMS

The Dial-a-Ducer has been designed to appear to the MAP Programs user like any other type of CPAMS device. The only time you may notice a difference in the operation of the MAP Programs is when the Dial-a-Ducer device is added to a PressureMAP office that is monitored by a conventional CPAMS. When accessing the Realtime Reading or Handheld Access programs, and the PressureMAP office contains a combination of Dial-a-Ducer and conventional devices, the CPAMS is always called first. After connecting to the monitor and verifying that the device you have requested is not in the monitor, the telephone number entered for the Dial-a-Ducer device is called and the device is polled, as shown in the example below.

```
REAL, D5182-2
```

```
Calling TEST (1200 baud). Hit <Esc> to quit.
CONNECT 1200.
```

```
Calling TEST (D5182-2). Hit <Esc> to quit.
```

