

## 9 Beyond the Basics

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### Introduction

The following sections of this chapter describe a few of the COGO functions and some of the TPS Survey functions.

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### Overview

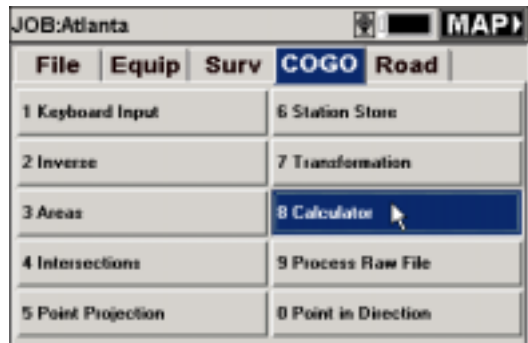
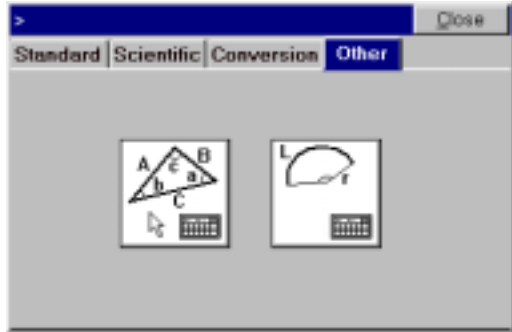
<b>Section</b>	<b>Topic</b>
9.1	Calculating a Triangle
9.2	Inverse Between Two Points
9.3	Calculate an Area
9.4	Intersection
9.5	Resection
9.6	Remote Elevation
9.7	Automatically Recording Points

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## 9.1 Calculating a Triangle


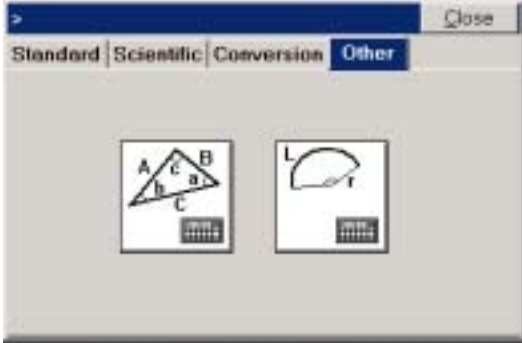
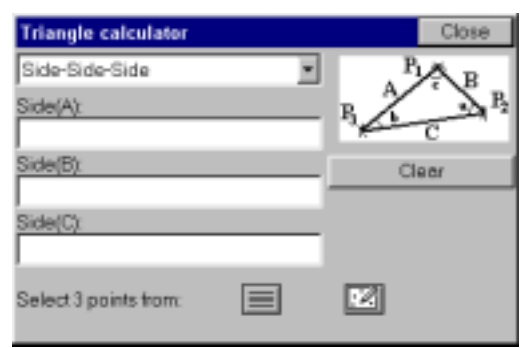
**Introduction** In this section we will discuss how to use SurvCE to calculate a triangle.

**Calculate a triangle using the side-side-side method** The following steps outline the computation of a triangle using three sides of a triangle.

Step	Action	Display
1	<p>In the SurvCE main menu screen:</p> <ul style="list-style-type: none"> <li>Press the <b>COGO</b> tab.</li> <li>Press the <b>8 Calculator</b> button.</li> </ul> <p>This takes you to the "Calculator" screen.</p>	 <p>The screenshot shows the SurvCE main menu with the 'COGO' tab selected. The '8 Calculator' button is highlighted in blue. Other buttons include '1 Keyboard Input', '2 Inverse', '3 Areas', '4 Intersections', '5 Point Projection', '6 Station Store', '7 Transformation', '9 Process Raw File', and '0 Point in Direction'.</p>
2	<ul style="list-style-type: none"> <li>Press the <b>Other</b> tab.</li> </ul> <p>This opens the "Triangle and Curve" screen.</p>	 <p>The screenshot shows the 'Triangle and Curve' screen with the 'Other' tab selected. It features two diagrams: a triangle with vertices labeled A, B, and C, and sides labeled a, b, and c; and a curve diagram with a central angle labeled L and a radius labeled r.</p>



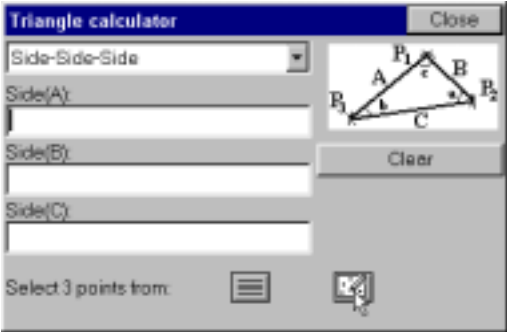

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## 9.1 Calculating a Triangle, Continued

Step	Action	Display
3	<p>In the "Curve and Triangle" screen:</p> <ul style="list-style-type: none"> <li>Press the Triangle Calculator Icon</li> </ul>  <p>This takes you to the "Triangle calculator" screen.</p>	
4	<p>In the "Triangle calculator" screen:</p> <p>In this example we will calculate the triangle using the Side-Side-Side method.</p> <p>If the Side-Side-Side method is not selected, use the down-arrow button in the top field to select it.</p> <p><b>Note:</b> The other methods include:</p> <ul style="list-style-type: none"> <li>Angle-Side-Angle.</li> <li>Side-Angle-Angle.</li> <li>Side-Angle-Side.</li> <li>Side-Side-Angle.</li> </ul>	

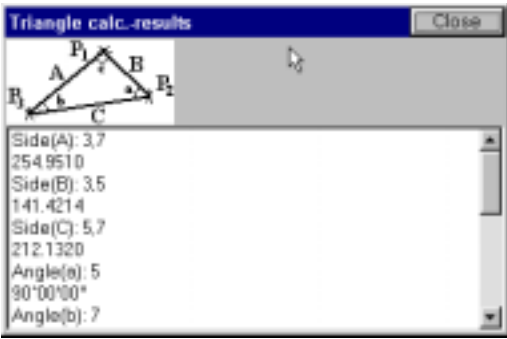
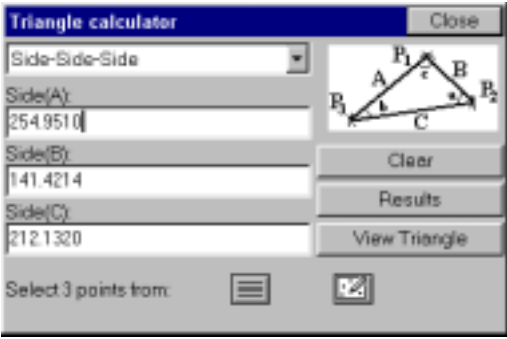
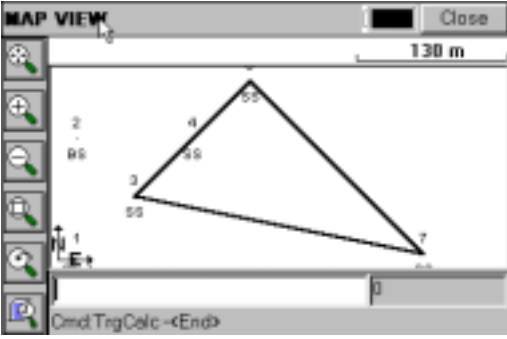
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## 9.1 Calculating a Triangle, Continued

Step	Action	Display
5	<p>In the "Triangle calculator" screen:</p> <p>Select the three sides of the triangle by one of two methods:</p> <ol style="list-style-type: none"> <li>1. Point list icon </li> <li>2. Map view icon </li> </ol> <p>In this example we will use the Map View.</p> <ul style="list-style-type: none"> <li>• Press the <b>Map View</b> icon.</li> </ul> <p>This takes you to the "MAP VIEW" screen.</p>	
6	<p>In the "MAP VIEW" screen:</p> <p>After a point is selected, a triangle marker is used to show the points that have been identified.</p> <ul style="list-style-type: none"> <li>• Select the three points to complete the triangle.</li> </ul> <p>This will take you to the "Triangle calc.-results" screen.</p>	

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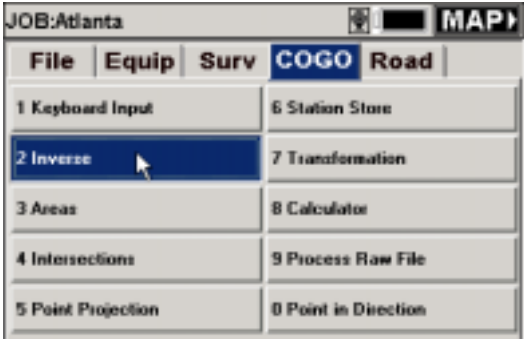


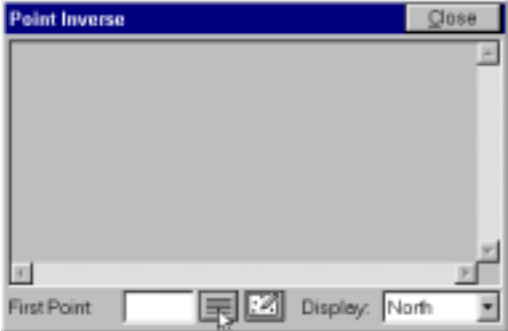
## 9.1 Calculating a Triangle, Continued

Step	Action	Display
7	<p>In the "Triangle calc.-results" screen:</p> <p>This screen displays the data used in relation to the program diagram.</p> <ul style="list-style-type: none"> <li>Press the <b>Close</b> button.</li> </ul> <p>This will return you to the "Triangle calculator" screen.</p>	
8	<p>In the "Triangle calculator" screen:</p> <p>The lengths of the three sides of the triangle that was selected are displayed.</p> <p>You can now:</p> <ul style="list-style-type: none"> <li>Press the <b>Clear</b> button to clear the results and select another triangle.</li> <li>Press the <b>Results</b> button and go back to the screen shown in <i>Step 7</i>.</li> <li>Press the <b>View Triangle</b> button to proceed to <i>Step 9</i> of this example.</li> </ul>	
9	<p>In the "MAP VIEW" screen:</p> <p>The MAP VIEW will display the triangle selected by connecting lines between the points in use.</p> <p><b>Note:</b> This is just a graphical display, that is, no linework is created.</p> <ul style="list-style-type: none"> <li>Press the <b>Close</b> button.</li> </ul> <p>This will return you to the Calculator menu.</p>	

*End of Calculating a Triangle*


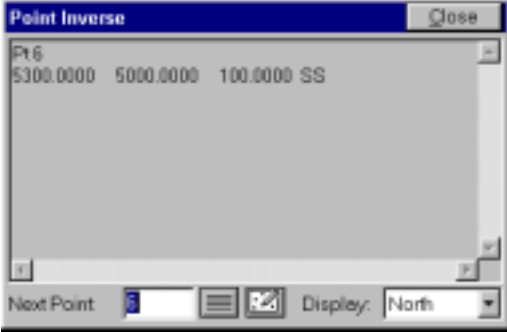
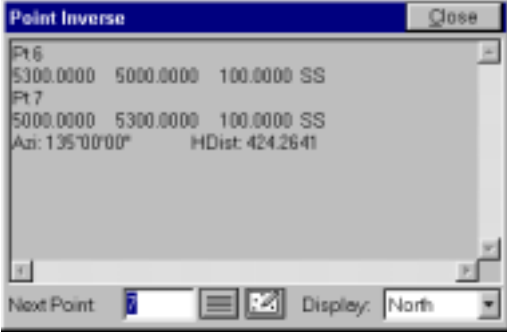
## 9.2 Inverse Between Two Points

Introduction In this section we will discuss how to inverse between two points.

Step	Action	Display
1	<p>In the SurvCE main menu screen:</p> <ul style="list-style-type: none"> <li>• Press the <b>COGO</b> tab.</li> <li>• Press the <b>2 Inverse</b> button.</li> </ul> <p>This takes you to the “Point Inverse” screen.</p>	 <p>The screenshot shows the main menu of the software. At the top, it says 'JOB:Atlanta' and 'MAP'. Below that are tabs for 'File', 'Equip', 'Surv', 'COGO', and 'Road'. The 'COGO' tab is active. There are two columns of buttons: '1 Keyboard Input', '2 Inverse', '3 Areas', '4 Intersections', '5 Point Projection' on the left; and '6 Station Store', '7 Transformation', '8 Calculator', '9 Process Raw File', '0 Point in Direction' on the right. The '2 Inverse' button is highlighted with a blue background and a mouse cursor.</p>
2	<p>In the “Point Inverse” screen:</p> <p>Enter the first point in one of three ways:</p> <ol style="list-style-type: none"> <li>1. Type in the point number in the data field.</li> <li>2. Press the <b>Point List</b> button, (as in this example). </li> <li>3. Press the <b>MAP VIEW</b> button to select the point from the map .</li> </ol> <p>In this example we will use the Point List.</p> <ul style="list-style-type: none"> <li>• Press the <b>Point List</b> button.</li> </ul> <p>This takes you to the “List Points” screen.</p>	 <p>The screenshot shows the 'Point Inverse' window. It has a title bar with 'Point Inverse' and a 'Close' button. Below the title bar is a large empty area for a map. At the bottom, there is a 'First Point' input field, a 'Point List' button (highlighted with a mouse cursor), a 'MAP VIEW' button, and a 'Display' dropdown menu set to 'North'.</p>

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## 9.2 Inverse Between Two Points, Continued

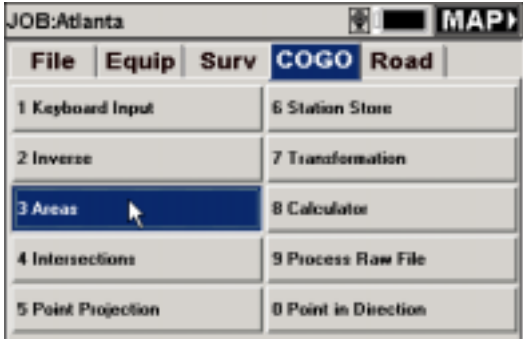
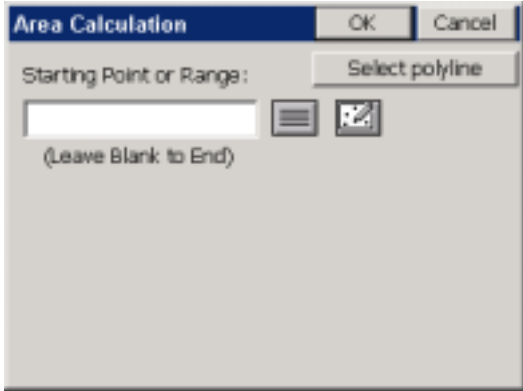
Step	Action	Display																																								
3	<p>In the "List Points" screen:</p> <ul style="list-style-type: none"> <li>Select the point from the list.</li> <li>Press the <b>OK</b> button.</li> </ul> <p>This takes you back to the "Point Inverse" screen.</p>	 <table border="1"> <thead> <tr> <th>Pt ID</th> <th>Northing</th> <th>Easting</th> <th>Elevation</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>* 1</td><td>5000.00</td><td>5000.00</td><td>100.000</td><td>Start</td></tr> <tr><td>* 2</td><td>5100.00</td><td>5000.00</td><td>120.000</td><td>SS</td></tr> <tr><td>* 3</td><td>5050.00</td><td>5050.00</td><td>100.000</td><td>SS</td></tr> <tr><td>* 4</td><td>5100.00</td><td>5100.00</td><td>105.000</td><td>SS</td></tr> <tr><td>* 5</td><td>5150.00</td><td>5150.00</td><td>100.000</td><td>SS</td></tr> <tr><td>* 6</td><td>5300.00</td><td>5000.00</td><td>100.000</td><td>SS</td></tr> <tr><td>* 7</td><td>5000.00</td><td>5300.00</td><td>100.000</td><td>SS</td></tr> </tbody> </table>	Pt ID	Northing	Easting	Elevation	Description	* 1	5000.00	5000.00	100.000	Start	* 2	5100.00	5000.00	120.000	SS	* 3	5050.00	5050.00	100.000	SS	* 4	5100.00	5100.00	105.000	SS	* 5	5150.00	5150.00	100.000	SS	* 6	5300.00	5000.00	100.000	SS	* 7	5000.00	5300.00	100.000	SS
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* 5	5150.00	5150.00	100.000	SS																																						
* 6	5300.00	5000.00	100.000	SS																																						
* 7	5000.00	5300.00	100.000	SS																																						
4	<p>In the "Point Inverse" screen:</p> <p>After the first point has been selected, you can use one of the three methods, as described in <i>Step 2</i>, to enter the next point for your inverse calculation.</p> <ul style="list-style-type: none"> <li>Select your next point.</li> </ul>	 <p>Pt 6 5300.0000 5000.0000 100.0000 SS</p> <p>Next Point: [ ] [ ] [ ] Display: North</p>																																								
5	<p>Continuing in the "Point Inverse" screen:</p> <ul style="list-style-type: none"> <li>Your second point and the results will be displayed on the screen.</li> </ul> <p>Entering additional points can continue the process; this will form a chain of inverses. The inverse computation displayed will always be from the previous point to the current point.</p> <ul style="list-style-type: none"> <li>Press the <b>Close</b> button to quit and return to the SurvCE main menu.</li> </ul>	 <p>Pt 6 5300.0000 5000.0000 100.0000 SS</p> <p>Pt 7 5000.0000 5300.0000 100.0000 SS</p> <p>Az: 135°00'00" HDist: 424.2641</p> <p>Next Point: [ ] [ ] [ ] Display: North</p>																																								

*End of Inverse Between Two Points*

## 9.3 Calculate an Area

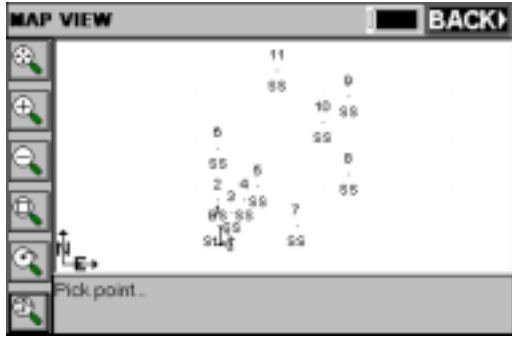
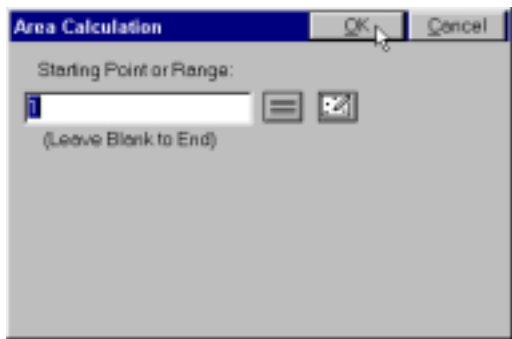
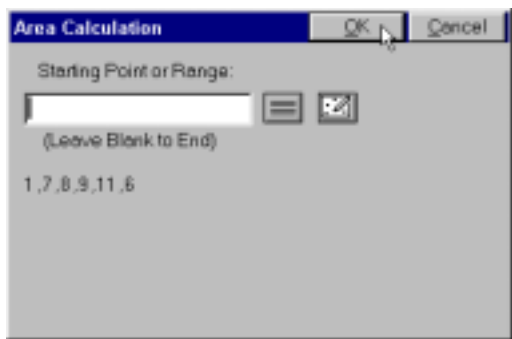
**Introduction** In this section we will discuss how to calculate an area.

**Area Calculation** The following procedures will outline how to compute an area from several known points.

Step	Action	Display
1	<p>In this example, we will calculate an area using the Area Function in the <b>COGO</b> menu.</p> <p>From the SurvCE main menu:</p> <ul style="list-style-type: none"> <li>• Press the <b>COGO</b> tab.</li> <li>• Press the <b>3 Areas</b> button.</li> </ul> <p>This will take you to the “Area Calculation” screen.</p>	 <p>The screenshot shows the SurvCE main menu with the 'COGO' tab selected. The '3 Areas' button is highlighted with a mouse cursor. Other menu options include '1 Keyboard Input', '2 Inverse', '4 Intersections', '5 Point Projection', '6 Station Store', '7 Transformation', '8 Calculator', and '9 Process Raw File'.</p>
2	<p>In the “Area Calculation” screen:</p> <p>There are four choices of how to input the points that will make up the area to be calculated.</p> <ol style="list-style-type: none"> <li>1. The point numbers can be entered directly into the data field. After each point, press the <b>Enter</b> or <b>OK</b> button. To close the area, leave the field blank and press the <b>OK</b> button.</li> <li>2. The points can be entered in the field by pressing the point list icon and selecting the points from the list.</li> <li>3. A group of polylines can be selected.</li> <li>4. Additionally, and for this example, the points can be selected from the map view by pressing on the map selection icon.</li> </ol> <p>This will take you to the “Map View” screen.</p>	 <p>The screenshot shows the 'Area Calculation' dialog box. It has 'OK' and 'Cancel' buttons at the top right. Below the title bar, there is a 'Starting Point or Range:' label and a 'Select polyline' button. A text input field is present below the label, with a list icon and a map icon to its right. Below the input field, it says '(Leave Blank to End)'.</p>

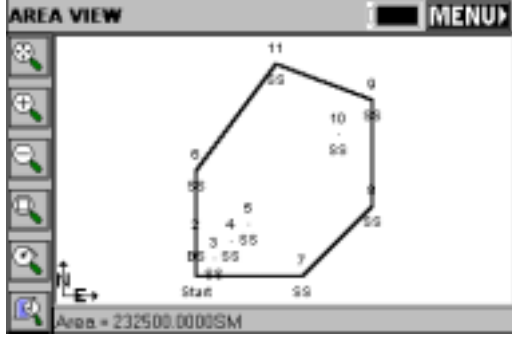
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### 9.3 Calculate an Area, Continued

Step	Action	Display
3	<p>In the "MAP VIEW" screen:</p> <ul style="list-style-type: none"> <li>Use the pointer to select the point that will start the boundary of the area.</li> </ul> <p>After each point is selected the program will take you back to the "Area Calculation" screen.</p>	
4	<p>In the "Area Calculation" screen:</p> <ul style="list-style-type: none"> <li>Press the <b>OK</b> button to confirm the point.</li> <li>Press the map icon to repeat the process.</li> </ul>	
5	<p>Continuing in the "Area Calculation" screen:</p> <p>After all the points have been selected:</p> <ul style="list-style-type: none"> <li>Leave the data entry field blank and</li> <li>Press the <b>OK</b> button.</li> </ul> <p>This will take you to the "Area View" screen.</p>	

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### 9.3 Calculate an Area, Continued

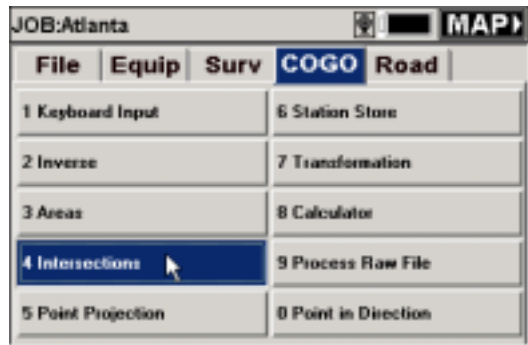
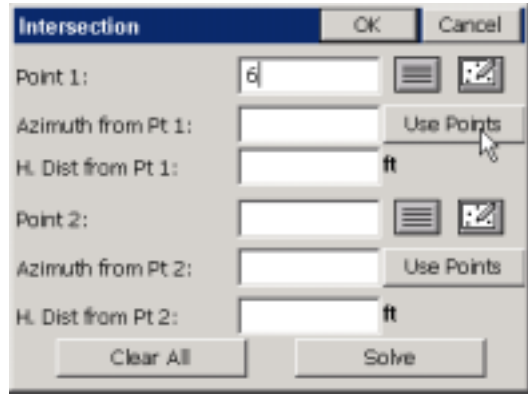
Step	Action	Display
6	<p>In the "AREA VIEW" screen:</p> <p>The area will then be displayed with lines connecting the points that were selected. The calculated area is displayed at the bottom of the screen. Also, this will be shown in the current units of the job.</p> <ul style="list-style-type: none"> <li>• Press the <b>MENU</b> button.</li> </ul> <p>This returns you to the "COGO" screen.</p>	 <p>The screenshot shows a software interface titled "AREA VIEW" with a "MENU" button in the top right. The main display area shows a polygon with 11 vertices, numbered 1 through 11. The vertices are connected by lines to form a closed shape. At the bottom of the screen, the text "Area = 232500.0000SM" is displayed. On the left side, there is a vertical toolbar with several icons, including a crosshair, a magnifying glass, and a cursor. The word "Start" is visible at the bottom left of the polygon area.</p>

*End of Calculate an Area*

## 9.4 Intersection

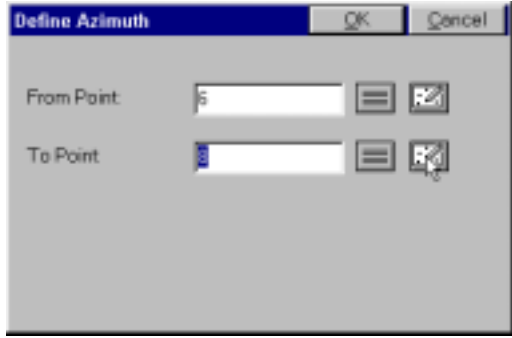
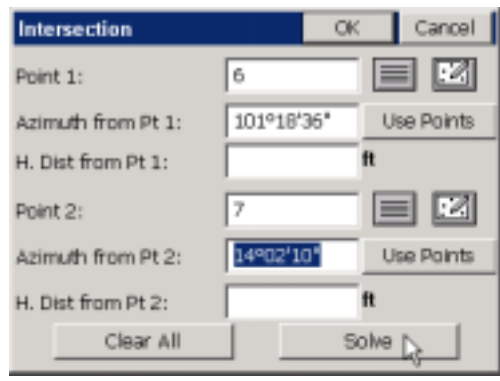
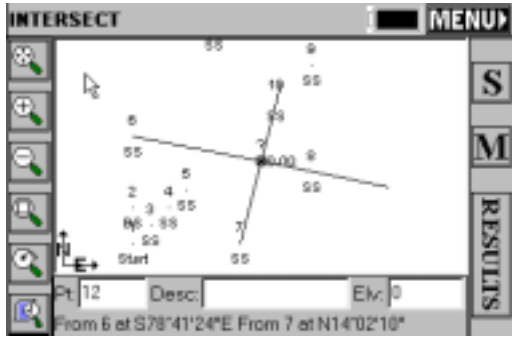
**Introduction** In this section we will discuss how to calculate a point using a Bearing – Bearing intersection.

**Intersection calculation** The following will outline how to compute points that we cannot directly survey. We will do this by using the intersection function. You may enter an intersection with bearings or distances.

Step	Action	Display
1	<p>From the SurvCE main menu:</p> <ul style="list-style-type: none"> <li>Press the <b>COGO</b> tab.</li> <li>Press the <b>4 Intersections</b> button.</li> </ul> <p>In this example we will calculate a point using the Bearing-Bearing intersection.</p> <p>This takes you to the “Intersection” screen.</p>	 <p>The screenshot shows the SurvCE main menu with the following options: File, Equip, Surv, COGO (selected), and Road. Below these are buttons for: 1 Keyboard Input, 2 Inverse, 3 Areas, 4 Intersections (highlighted), 5 Point Projection, 6 Station Store, 7 Transformation, 8 Calculator, 9 Process Raw File, and 0 Point in Direction.</p>
2	<p>In the “Intersection” screen:</p> <ul style="list-style-type: none"> <li>Select the first point to be used in the calculation by typing it, choosing it from the point list, or selecting it from the map view.</li> <li>Press the <b>Use Points</b> button to define the azimuth from the first point.</li> </ul> <p><b>Note:</b> Only enter the information you want to use for the intersection calculation. For example, either enter information for the bearings or for the distances.</p> <p>This takes you to the “Define Azimuth” screen.</p>	 <p>The screenshot shows the 'Intersection' dialog box with the following fields and buttons: Point 1 (input field with '6'), Azimuth from Pt 1 (input field), H. Dist from Pt 1 (input field with 'ft'), Point 2 (input field), Azimuth from Pt 2 (input field), H. Dist from Pt 2 (input field with 'ft'), Use Points (button), Clear All (button), and Solve (button). There are also OK and Cancel buttons at the top right.</p>

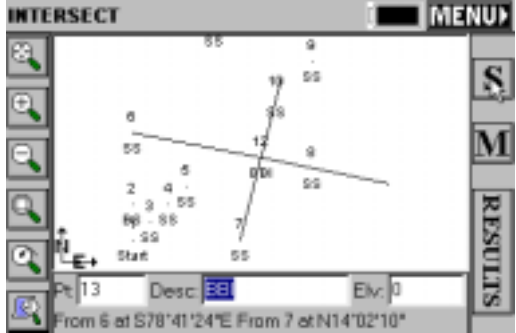
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## 9.4 Intersection, Continued

Step	Action	Display
3	<p>In the “Define Azimuth” screen:</p> <ul style="list-style-type: none"> <li>Define the direction of the azimuth from point one by selecting the <b>From</b> and <b>To</b> points either by point list or map view.</li> </ul>	
4	<p>Repeat this process to select Point 2 and the direction of the azimuth.</p> <ul style="list-style-type: none"> <li>Press the <b>Solve</b> button to create the point and view the results.</li> </ul> <p><b>Note:</b> The Distance fields will be left blank. Those would be used to do a distance-distance intersection.</p> <p>This takes you to the “INTERSECT” screen.</p>	
5	<p>In the “INTERSECT” screen:</p> <p>This screen allows you to view the point that has been created to ensure the validity of the point.</p>	

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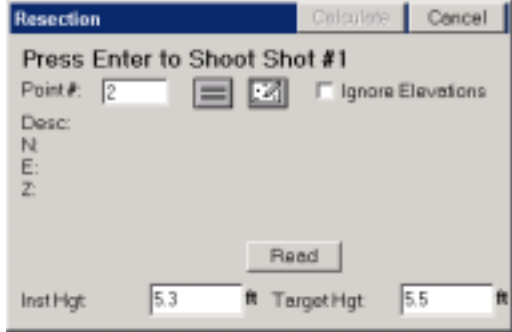
## 9.4 Intersection, Continued

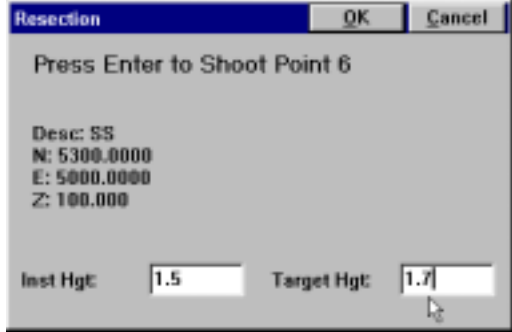
Step	Action	Display
6	<p>Continuing in the "INTERSECT" screen:</p> <ul style="list-style-type: none"> <li>• Enter a point number and description for the new point.</li> <li>• Press the <b>S</b> button to store the point.</li> </ul> <p>By pressing the <b>M</b> button, you can return to <i>Step 4</i> and either clear the data or make changes.</p> <p>By pressing the <b>Results</b> button, you will see the resulting data from your selections.</p>	

*End of Intersection*

## 9.5 Resection

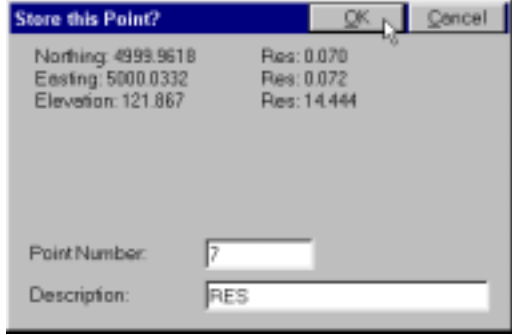
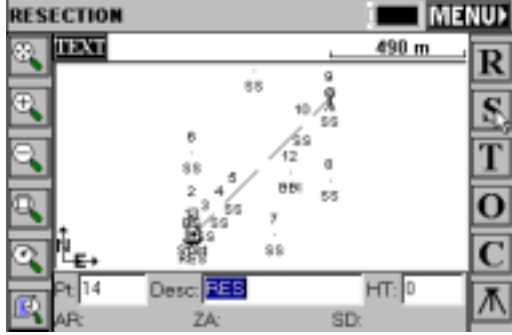
Introduction In this section we explore how to use the Resection function.

Step	Action	Display
1	<p>From the SurvCE main menu:</p> <ul style="list-style-type: none"> <li>• Press the <b>Surv</b> tab.</li> <li>• Press the <b>8 Resection</b> button.</li> </ul> <p>This takes you to the “Resection” screen.</p>	 <p>The screenshot shows the main menu with tabs for File, Equip, Surv, COGO, and Road. The Surv tab is active. A grid of options is displayed, with '8 Resection' selected.</p>
2	<p>In the “Resection” screen:</p> <ul style="list-style-type: none"> <li>• Select the first point from which the resection will be calculated. Do this by either manually entering the data, selecting from a point list, or selecting from the map view.</li> </ul> <p>Point List  icon.</p> <p>Map View  icon.</p> <ul style="list-style-type: none"> <li>• Enter the Instrument height and Target height.</li> <li>• Aim at the first point.</li> <li>• Press the <b>Enter</b> button to measure to the first point.</li> </ul>	 <p>The screenshot shows the 'Resection' dialog box with fields for Point # (2), Desc (N, E, Z), Inst Hgt (5.3 ft), and Target Hgt (5.5 ft). There is a 'Read' button and an 'Ignore Elevations' checkbox.</p>

3	<p>Continuing in the "Resection" screen:</p> <ul style="list-style-type: none"><li>• Aim at the first point.</li><li>• Enter the target height</li><li>• Press the <b>Enter</b> button or press the <b>OK</b> button to take the measurement.</li><li>• Repeat this process for the next two points.</li></ul>	 <p>The screenshot shows a software window titled "Resection" with "OK" and "Cancel" buttons in the top right. The main text reads "Press Enter to Shoot Point 6". Below this, the coordinates are listed: "Desc: SS", "N: 5300.0000", "E: 5000.0000", and "Z: 100.000". At the bottom, there are two input fields: "Inst Hgt:" with a value of "1.5" and "Target Hgt:" with a value of "1.7". A mouse cursor is visible over the "Target Hgt:" field.</p>
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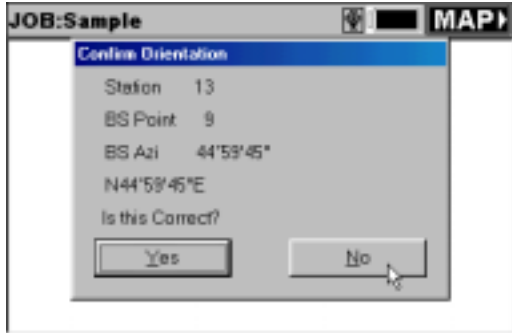
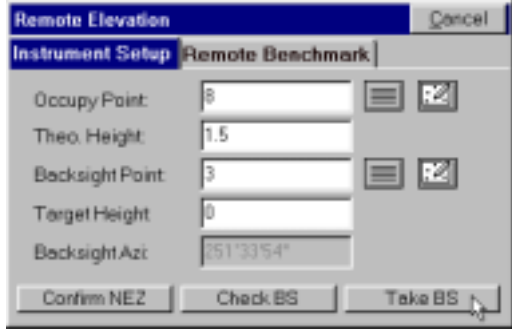
## 9.5 Resection, Continued

Step	Action	Display
4	<p>In the "Store this Point?" screen:</p> <p>The results are displayed showing the coordinates, elevation, and residuals.</p> <p>If the point is acceptable:</p> <ul style="list-style-type: none"> <li>• Enter the point number and description.</li> <li>• Press the <b>OK</b> button to store the data.</li> </ul> <p>This will take you to the "RESECTION" screen.</p>	
5	<p>In the "RESECTION" screen:</p> <p>You may store additional topo points and change point numbers, descriptions, and target heights.</p>	

*End of Resection*




## 9.6 Remote Elevation

Introduction In this section we will explore how to use the Remote Elevation function.

Step	Action	Display
1	<p>From the SurvCE main menu:</p> <ul style="list-style-type: none"> <li>Press the <b>Surv</b> tab.</li> <li>Press the <b>7 Remote Elevation</b> button.</li> </ul> <p>This takes you to the "Confirm Orientation" display.</p>	
2	<p>In the "Confirm Orientation" display:</p> <p>Confirm the orientation by</p> <ul style="list-style-type: none"> <li>Pressing the <b>Yes</b> button.</li> </ul> <p>Or if the displayed station and backsight point are incorrect,</p> <ul style="list-style-type: none"> <li>Press the <b>No</b> button and</li> <li>Edit the data, as we are doing in this example.</li> </ul> <p>This takes you to the "Instrument Setup" screen.</p>	
3	<p>In the "Instrument Setup" screen:</p> <ul style="list-style-type: none"> <li>Edit the instrument setup information.</li> <li>Press the <b>Take BS</b> button.</li> </ul> <p>This takes you to the "Take BS" screen.</p>	

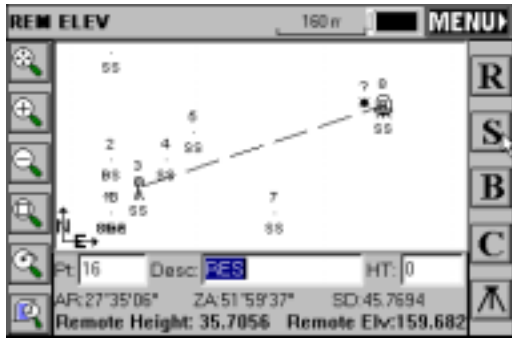
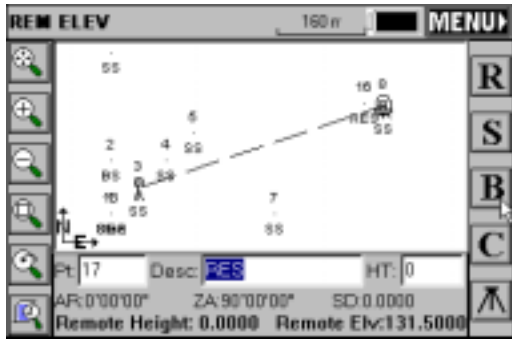
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## 9.6 Remote Elevation, Continued

Step	Action	Display												
4	<p>In the "Take BS" screen:</p> <ul style="list-style-type: none"> <li>Review the results from the backsight measurement.</li> <li>Press the <b>OK</b> button to confirm.</li> </ul>	 <p>The screenshot shows the 'Take BS' screen with the following data:</p> <table border="1"> <tr> <td>OC Point: 8</td> <td>BS Point: 3</td> </tr> <tr> <td>BS Azi: 251°33'54"</td> <td>BS Bearing: S71°20'08"W</td> </tr> <tr> <td>Theo. Ht: 1.500</td> <td>Target Ht: 0.000</td> </tr> <tr> <td>AR: 251°33'00"</td> <td>ZA: 94°38'00"</td> </tr> <tr> <td>Calc Dist: 474.3416</td> <td>Meas Dist: 472.7943</td> <td>Delta Dist: -1.5474</td> <td>Delta Z (Elv): 6.8000</td> </tr> </table> <p>Buttons: OK, Back, Cancel, Bead. Radio buttons: Set To Zero, Set To BS Azimuth (selected), Set To Value. Angle: 251.3300</p>	OC Point: 8	BS Point: 3	BS Azi: 251°33'54"	BS Bearing: S71°20'08"W	Theo. Ht: 1.500	Target Ht: 0.000	AR: 251°33'00"	ZA: 94°38'00"	Calc Dist: 474.3416	Meas Dist: 472.7943	Delta Dist: -1.5474	Delta Z (Elv): 6.8000
OC Point: 8	BS Point: 3													
BS Azi: 251°33'54"	BS Bearing: S71°20'08"W													
Theo. Ht: 1.500	Target Ht: 0.000													
AR: 251°33'00"	ZA: 94°38'00"													
Calc Dist: 474.3416	Meas Dist: 472.7943	Delta Dist: -1.5474	Delta Z (Elv): 6.8000											
5	<p>In the "REM ELEV" screen:</p> <ul style="list-style-type: none"> <li>Aim at the Base Point with your total station and either</li> <li>Press the <b>Enter</b> button or press the <b>OK</b> button.</li> </ul>	 <p>The screenshot shows the 'REM ELEV' screen with a 'Remote Elevation' dialog box. The dialog box contains the text: 'Press Enter to Shoot Base Point'. Buttons: OK, Cancel.</p>												
6	<p>Continuing in the "REM ELEV" screen:</p> <ul style="list-style-type: none"> <li>Aim at the Target Elevation and either</li> <li>Press the <b>Enter</b> button or press the <b>OK</b> button.</li> </ul>	 <p>The screenshot shows the 'REM ELEV' screen with a 'Remote Elevation' dialog box. The dialog box contains the text: 'Press Enter to Shoot Target Elevation.'. Buttons: OK, Cancel.</p>												

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## 9.6 Remote Elevation, Continued


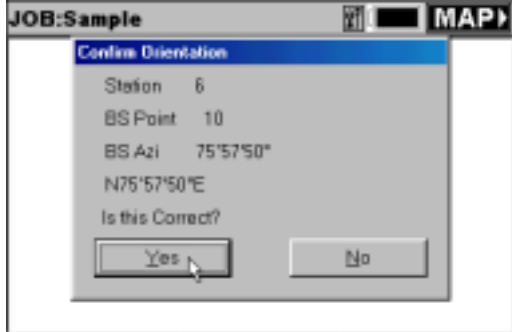
Step	Action	Display
7	<p>Continuing in the "REM ELEV" screen:</p> <p>The point is generated based on the measurements.</p> <ul style="list-style-type: none"> <li>Press the <b>S</b> button to store the point that was created.</li> </ul>	
8	<p>Continuing in the "REM ELEV" screen:</p> <p>Pressing the <b>B</b> button will allow for another Remote Elevation measurement.</p> <p>Repeat Steps 5 through 7.</p>	

*End of Remote Elevation*

## 9.7 Automatically Recording Points

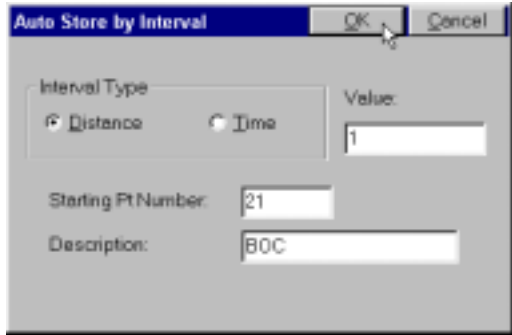
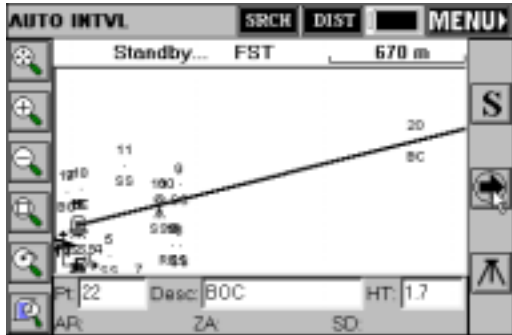
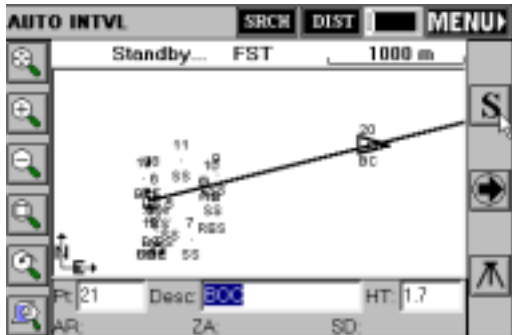
**Introduction** In this section we will discuss how to auto record points using Auto by Interval.

**Auto by Interval** In the following section we will outline how to use the Auto by Interval function with the Robotic Total Station. This function automatically records data points as you move. This can be done with the Robotic Total Station or the Leica GPS.

Step	Action	Display
1	<p>From the SurvCE main menu:</p> <p>In this example we will collect points using the Auto by Interval function in the Surv menu.</p> <ul style="list-style-type: none"> <li>Press the <b>Surv</b> tab.</li> <li>Press the <b>6 Auto by Interval</b> button.</li> </ul> <p>This takes you to the "Confirm Orientation" screen.</p>	 <p>The screenshot shows the 'JOB:Sample' screen with a menu bar containing 'File', 'Equip', 'Surv', 'COGO', and 'Road'. The 'Surv' tab is active. Below the menu bar, there are two columns of options. The first column lists: 1 Sideshot/Traverse, 2 Stakeout Points, 3 Stakeout Line/Arc, 4 Offset Stakeout, and 5 Elevation Difference. The second column lists: 6 Auto by Interval, 7 Remote Elevation, 8 Resection, 9 Set Collection, and 0 Set Review. The '6 Auto by Interval' option is highlighted in blue.</p>
2	<p>In the "Confirm Orientation" screen:</p> <p>Confirm the orientation by :</p> <ul style="list-style-type: none"> <li>Press the <b>Yes</b> button to confirm the orientation.</li> </ul> <p>Or if the displayed station and backsight point are incorrect:</p> <ul style="list-style-type: none"> <li>Press the <b>No</b> button and</li> <li>Edit the data.</li> </ul>	 <p>The screenshot shows a dialog box titled 'Confirm Orientation' with the following text: Station 6, BS Point 10, BS Azl 75°57'50", N75°57'50"E, and Is this Correct? Below the text are two buttons: 'Yes' and 'No'. A mouse cursor is pointing at the 'Yes' button.</p>

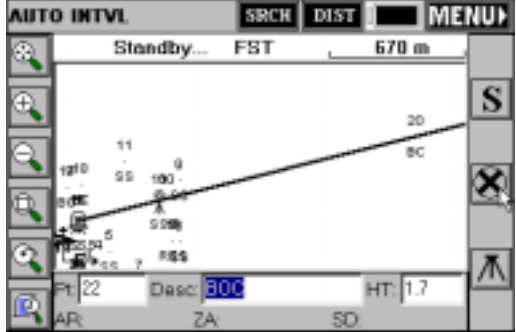
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## 9.7 Automatically Recording Points, Continued

Step	Action	Display
3	<p>In the "Auto Store by Interval" screen:</p> <ul style="list-style-type: none"> <li>Enter the specifications of how to collect the points, either by distance or time.</li> </ul> <p>The entry in the Value field is the distance between points or the time between measurements.</p> <ul style="list-style-type: none"> <li>Enter the starting point number and the description associated with the measurements.</li> </ul>	
4	<p>In the "Auto INTVL" screen:</p> <ul style="list-style-type: none"> <li>Press the <b>Arrow</b> button to start the automatic record function.</li> </ul> <p>Points will be automatically recorded as specified in <i>Step 3</i>.</p>	
5	<p>Continuing in the "AUTO INTVL" screen:</p> <ul style="list-style-type: none"> <li>Press the <b>S</b> button to store points during the process that are needed in addition to the points that are already being automatically recorded.</li> </ul>	

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## 9.7 Automatically Recording Points, Continued

Step	Action	Display
6	<p>Continuing in the "AUTO INTVL" screen:</p> <ul style="list-style-type: none"> <li>• Press the <b>X</b> button to stop the automatic record function.</li> <li>• Press the <b>Menu</b> button to return to the Surv menu.</li> </ul>	

*End of Automatically Recording Points*