

10 Traversing with Leica TPS

Introduction


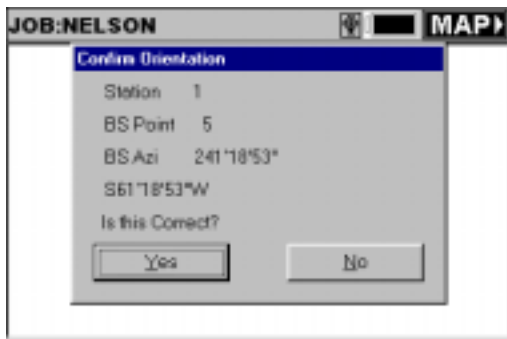


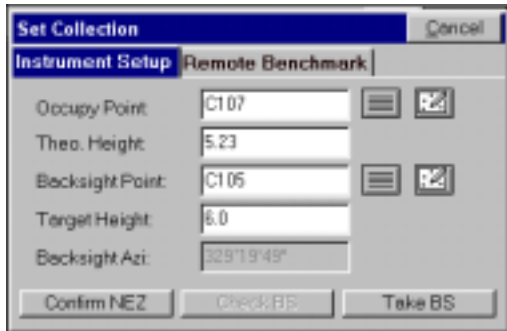
In this chapter, Traversing with Leica TPS, we will discuss how to perform Traverse functions within SurvCE while in the field. These include completing a set of angles, review a set of angles, and the reduction of a traverse, through the Process Raw File function.

Overview

Section	Topic
10.1	Set Collection
10.2	Set Review
10.3	Processing the Raw File


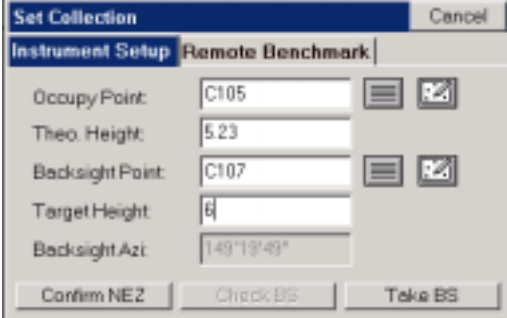
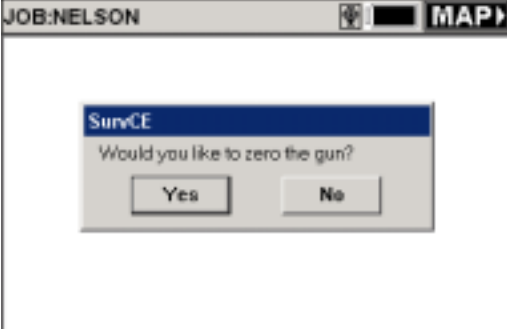
10.1 Set Collection

Angle Sets Collecting sets of angles.

Step	Action	Display
1	<p>From the Surv menu tab:</p> <ul style="list-style-type: none"> Press the 9 Set Collection button. <p>This will take you to the "Confirm Orientation" window.</p>	
2	<p>In the "Confirm Orientation" window:</p> <ul style="list-style-type: none"> Press the Yes button if the Station and BS Point are Correct. Proceed to Step 5. Press the No button if you need to change the Station or BS information. Proceed to Step 3. 	
3	<p>By selecting No, you have opened the "Set Collection" screen.</p> <p>Here the user can select from the point list, from the graphic map screen, or type in the new points that are to be used for orientation.</p> <ul style="list-style-type: none"> Enter the Point information. Press the  button to select points from Point list. Or you could also press the  button to select points from graphic map screen. 	

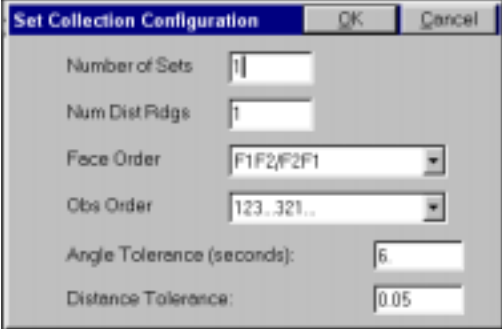
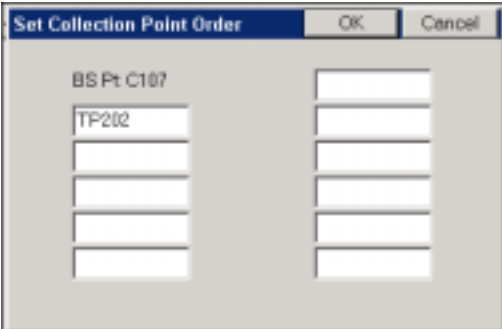
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10.1 Set Collection, Continued

Step	Action	Display																																													
4	<p>The Point List of the current job is displayed for you to make a new selection for the instrument and backsight points.</p> <ul style="list-style-type: none"> Select the desired points. Press the OK button to accept the points. <p>Note: There is an instrument and prism symbol indicating the current station and backsight point in the point list.</p> <p>This takes you back to the "Set Collection" screen.</p>	 <table border="1"> <thead> <tr> <th>Point ID</th> <th>Northing</th> <th>Easting</th> <th>Elevation</th> <th>Desc</th> </tr> </thead> <tbody> <tr><td>* 28</td><td>4996.650</td><td>5698.725</td><td>0.00</td><td></td></tr> <tr><td>* 29</td><td>4918.949</td><td>5355.630</td><td>1000.31</td><td>CB</td></tr> <tr><td>* 30</td><td>4936.801</td><td>5398.263</td><td>1000.08</td><td>CB</td></tr> <tr><td>* 31</td><td>4953.328</td><td>5435.237</td><td>1000.02</td><td>CB</td></tr> <tr><td>* 32</td><td>5033.619</td><td>5607.852</td><td>1000.34</td><td>CB Et</td></tr> <tr><td>* 200</td><td>5000.000</td><td>5000.000</td><td>100.00</td><td>BM</td></tr> <tr><td> C105</td><td>10218.230</td><td>4870.580</td><td>97.92</td><td>Confr</td></tr> <tr><td> C107</td><td>10000.000</td><td>5000.000</td><td>200.00</td><td>Confr</td></tr> </tbody> </table>	Point ID	Northing	Easting	Elevation	Desc	* 28	4996.650	5698.725	0.00		* 29	4918.949	5355.630	1000.31	CB	* 30	4936.801	5398.263	1000.08	CB	* 31	4953.328	5435.237	1000.02	CB	* 32	5033.619	5607.852	1000.34	CB Et	* 200	5000.000	5000.000	100.00	BM	C105	10218.230	4870.580	97.92	Confr	C107	10000.000	5000.000	200.00	Confr
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5	<p>Once the points have been entered in the "Set Collection" screen:</p> <ul style="list-style-type: none"> Press the Take BS button. <p>Take BS accepts Instrument Setup, and then allows the user to set zero on the instrument.</p>																																														
6	<p>When orientation has been confirmed, the next option is to zero the gun.</p> <ul style="list-style-type: none"> Press Yes to zero instrument on BS. Press No to use current circle reading. <p>This takes you to the "Set Collection Configuration" screen.</p>																																														

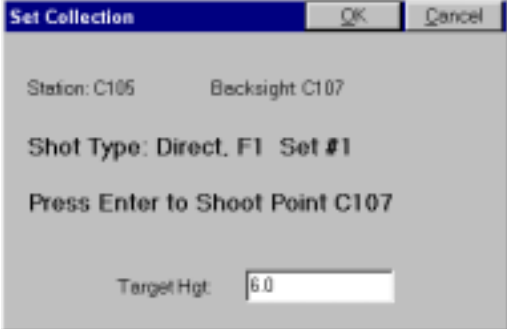
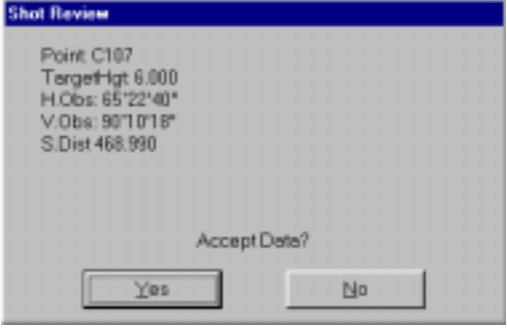

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10.1 Set Collection, Continued

Step	Action	Display
7	<p>Enter your preferences in the following data fields:</p> <ul style="list-style-type: none"> • Number of Sets. • Number of Dist Rdgs. • Face Order. • Obs Order. • Angle Tolerance (seconds). • Distance Tolerance. <p>Press the OK button to accept the Set Collection configuration.</p> <p>This takes you to the "Set Collection Point Order" screen.</p>	
8	<p>In the "Set Collection Point Order" screen:</p> <ul style="list-style-type: none"> • Enter the FS points in the order the points are to be collected. <p>Note: The BS point is shown, and there can be from 1 to 11 FS points.</p> <ul style="list-style-type: none"> • Press the OK button to start the set collection. <p>This takes you to the "Set Collection" screen.</p>	

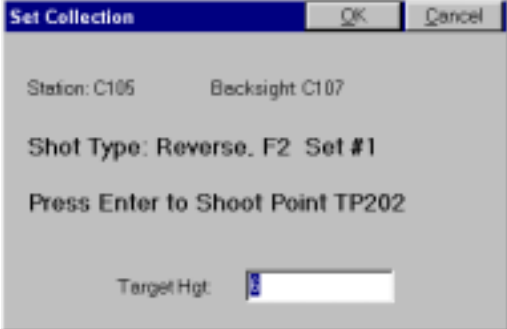
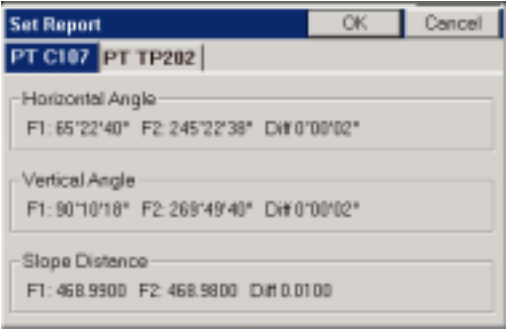
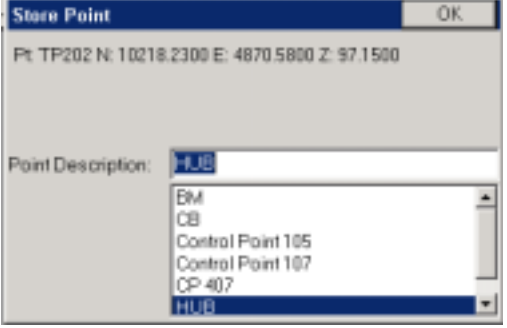
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10.1 Set Collection, Continued

Step	Action	Display
9	<p>In the "Set Collection" screen:</p> <ul style="list-style-type: none"> • Enter Target Hgt. • Press the OK button to take the measurement. <p>Notes: The target height always has to be entered for each point in the F1 reading of Set #1.</p> <p>The first measurement is made to the BS point.</p> <p>The instrument face, angle set #, and orientation information of the point being measured is always displayed for the user.</p> <p>This takes you to the "Shot Review" screen.</p>	
10	<p>The "Shot Review" screen opens after each instrument reading, displaying the raw data.</p> <ul style="list-style-type: none"> • Press the Yes button to accept and continue to take instrument readings on consecutive FS points. • Press the No button if the data is not correct. 	
11	<p>Once all F1 readings have been taken, the user is prompted to plunge the scope, to F2 and shoot in the specified observation order from the set collection configuration.</p> <ul style="list-style-type: none"> • Press the OK button to continue. 	

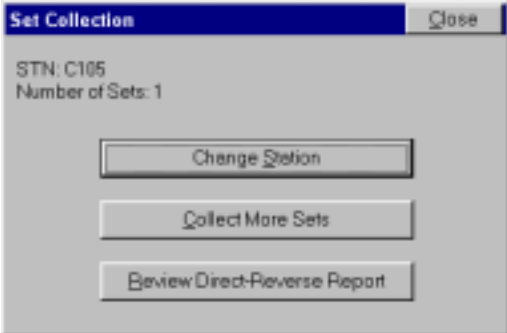
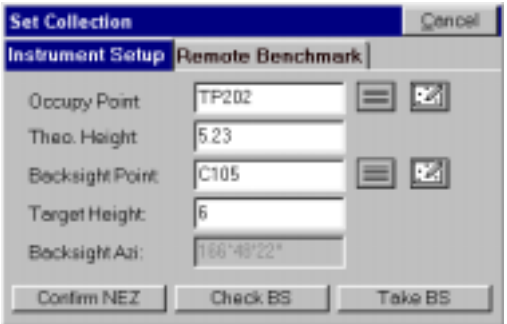
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10.1 Set Collection, Continued

Step	Action	Display
12	<p>Continue to follow the on screen information of which face, set number and point to measure.</p>	
13	<p>Once all the measurements have been made for Set #1, the "Set Report" screen will open.</p> <p>Note: All points that were included in the set will be displayed showing the raw measurements and the difference between them.</p> <ul style="list-style-type: none"> • Press the OK button to store the points if the data is acceptable. • Press the Cancel button to Repeat or End Set Collection if the data to one or more points is not acceptable 	
14	<p>In the "Store Point" screen, you have the option to record a "Point Description" for each of the foresight points measured.</p> <p>Notes: You are not able to enter a description for the Backsight from this screen because it is a previously stored point. The descriptions can be selected from a Code List, or entered manually and can be up to 32 characters long.</p>	

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10.1 Set Collection, Continued

Step	Action	Display
15	<p>After the points have been stored, its time to move to the next station.</p> <ul style="list-style-type: none"> • Press the Change Station button. <p>Other options you have at this point are:</p> <ul style="list-style-type: none"> • Collect More Sets at current station. • Review Direct+Reverse Report. • Or Close to exit Set Collection. 	
16	<p>In the "Set Collection" screen, the Instrument Setup tab opens.</p> <ul style="list-style-type: none"> • The "Occupy Point" will change to the LAST point collected in Set Collection. • The "Backsight Point" will change to the PREVIOUS "Occupy Point". 	


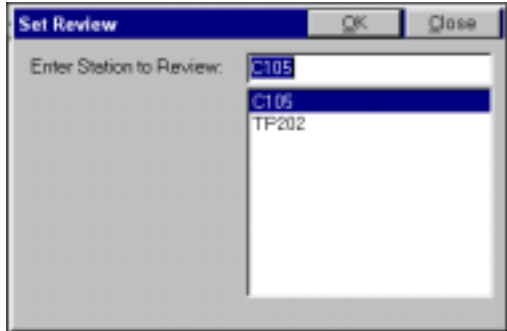
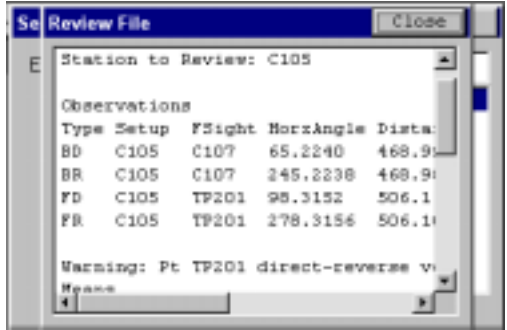
Notes:

- To continue Traversing, repeat *Steps 3 through 17* until the Traverse is completed.
- For additional information on computing and reducing the traverse in the field, go to Section *10.3 Process Raw File*.
- For more information on Set Collection, refer to the *Carlson SurvCE Reference Manual*.

End of Set Collection

10.2 Set Review


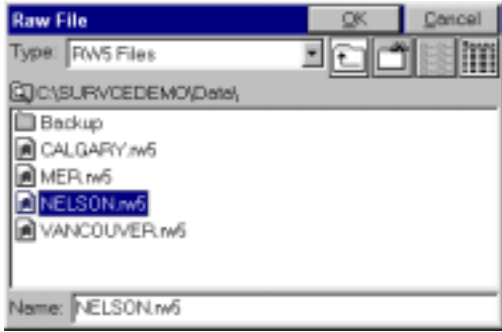
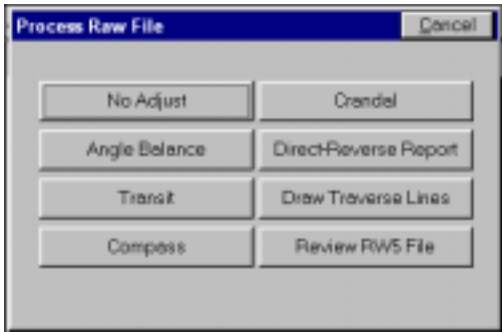
Set Review This option allows the user to review all the sets of angles that have been measured in the current job.

Step	Action	Display
1	<p>From the Surv menu tab:</p> <ul style="list-style-type: none"> Press the 0 Set Review button <p>This takes you to the "Set Review" screen.</p>	
2	<p>The "Set Review" screen shows the list of Sets gathered in the current Job.</p> <ul style="list-style-type: none"> Highlight the Set you wish to Review. Press the OK button. <p>This takes you to the "Review File" screen.</p>	
3	<p>The "Review File" screen opens and displays the observation data in a Text file format.</p> <ul style="list-style-type: none"> Press the Close button to choose another set, or to Close Set Review. <p>Note: You can review the raw data, averaged angles and distances with face differences, and any warnings of data collected outside of tolerances.</p>	

End of Set Review

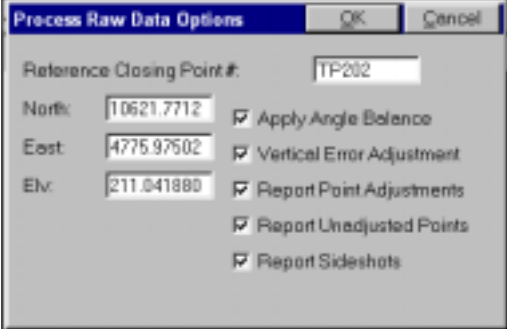
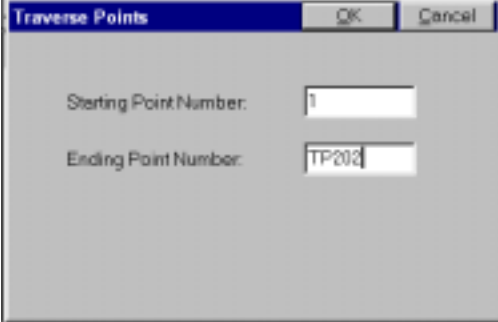
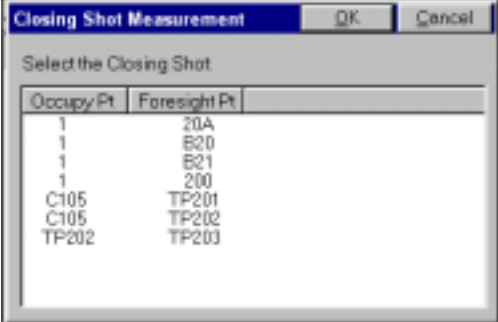
10.3 Processing the Raw File

Processing Raw Files This feature allows you to view raw survey data, the adjustment computations and traverse closure results for the survey. You can also see a graphical view of the traverse data.

Step	Action	Display
1	<p>From the COGO menu tab:</p> <ul style="list-style-type: none"> Press 9 Process Raw File button. <p>Note: The Raw File has the extension .RW5.</p> <p>This takes you to the "Raw File" screen.</p>	
2	<p>In the "Raw File" screen select the raw file to be processed.</p> <ul style="list-style-type: none"> Choose the .RW5 file you wish to process. <p>This takes you to the "Process Raw File" screen.</p>	
3	<p>In the "Process Raw File" screen you can select one of 8 options.</p> <p>For this example, we will use the Compass Rule method.</p> <ul style="list-style-type: none"> Press the Compass button. This will do a Compass rule adjustment. <p>Note: For detailed explanation of all options, please refer to the <i>Carlson SurvCE Reference Manual</i>, under Process Raw File.</p> <p>This takes you to the "Process Raw Data Options" screen.</p>	

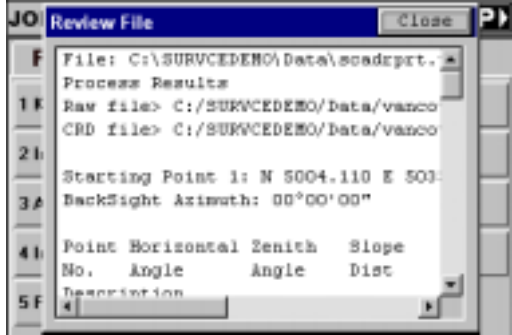
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10.3 Processing the Raw File, Continued

Step	Action	Display
4	<p>In the "Process Raw Data Options" screen:</p> <ul style="list-style-type: none"> • Enter the Reference Closing Point #. • Choose your adjustment preferences and the reports you would like to see by selecting the appropriate choice boxes. • Press the OK button to accept choices. <p>Note: If the reference closing point is in the current job, the coordinate values will automatically be listed in the coordinate fields; otherwise the correct closing values will have to be manually input.</p> <p>This will take you to the "Traverse Points" screen.</p>	
5	<p>In the "Traverse Points" screen:</p> <p>For the points that are to be included in the adjustment:</p> <ul style="list-style-type: none"> • Enter the Starting Point Number. • Enter the Ending Point Number. • Press the OK button to continue. <p>This takes you to the "Closing Shot Measurement" screen.</p>	
6	<p>If there are multiple shots from the closing station, the user can select which measurement is to be used.</p> <ul style="list-style-type: none"> • Select the measurement to be used. • Press the OK button to continue. <p>This takes you to the "Review File" screen.</p>	

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10.3 Processing the Raw File, Continued

Step	Action	Display
7	<p>The "Review File" screen reports the results of the Compass Adjustment and are in a Text file format.</p> <ul style="list-style-type: none"> Press the Close button when you are finished reviewing the data. <p>Note: If the information in the RAW file is incorrect or the wrong points are entered for the Start or Ending points, the Compass Adjustment Review File window will not reopen and an Error Message box will open indicating "not sufficient data" to compute adjustment. You will have to start the adjustment process again.</p>	 <p>The screenshot shows a window titled 'Review File' with a 'Close' button. The content is as follows:</p> <pre> File: C:\SURVCEDEMO\Data\soadrprt. Process Results 1# Raw file> C:/SURVCEDEMO/Data/vanco 2# CRD file> C:/SURVCEDEMO/Data/vanco 3# Starting Point 1: N 5004.110 E 503 BackSight Azimuth: 00°00'00" 4# Point Horizontal Zenith Slope No. Angle Angle Dist 5# Description </pre>

End of Processing the Raw File