

# Prosurv CE

Version 3.8.0



**A  
Quick  
Review!**

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## Prosurv CE—A Quick Review

Welcome to a quick review of Prosurv CE Data Collection on the Allegro CE. This quick review will cover the following topics:

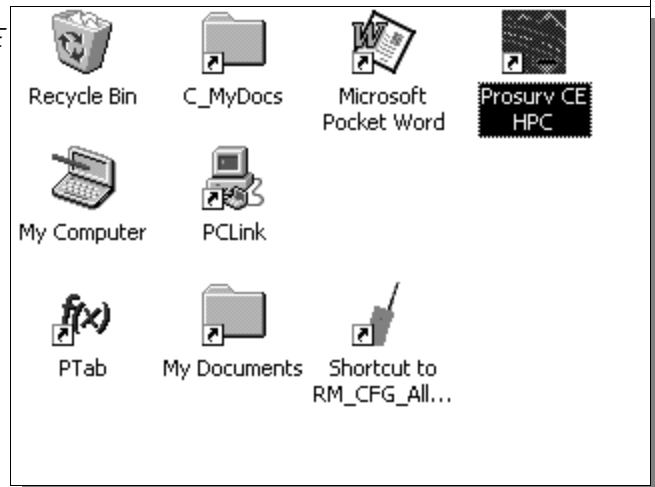
1. Starting Prosurv CE from the Desktop Icon
2. Creating a New Job in Prosurv CE
3. Going 'into' Data Collection
4. Performing a Setup
5. Doing some Topography (collecting points)
6. Importing points for Stakeout
7. Staking out the points

For more information on using Prosurv CE routines, please refer to the *Surveying With Prosurv CE* manual included on the installation CD in Adobe Acrobat pdf format. Or, you can download each chapter by visiting [www.prosurv.com](http://www.prosurv.com). Downloaded chapters require the password "PN8133" to view each chapter, however, viewing the chapters from the installation CD do not require a password.

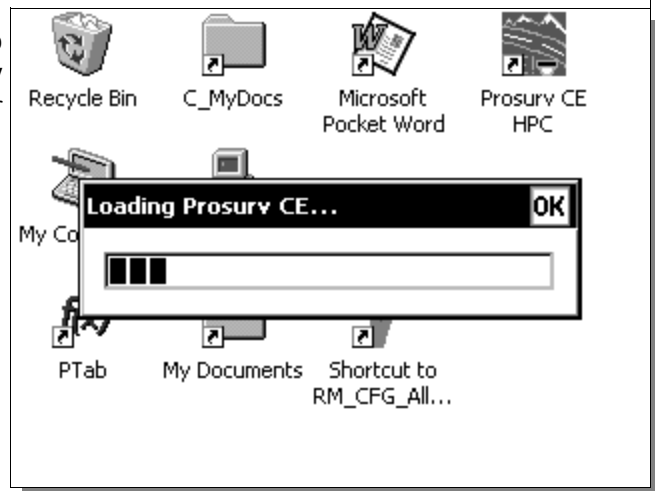
**Note:** This guide assumes that you have followed the instructions in the *Installation Guide for Installing Prosurv CE on your Allegro CE*, and that you have already entered the Password information during the installation.

### 1. Starting Prosurv CE from the Desktop Icon

Start Prosurv CE by tapping the *Prosurv CE HPC* icon on your Allegro CE's 'desktop'.

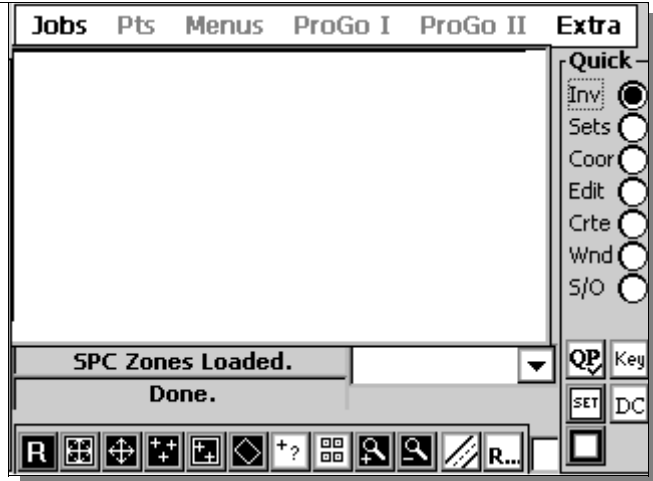


Prosurv CE will take about 30-45 seconds to load. A progress bar let's you know that Prosurv CE is loading. The next window should appear when the progress bar is about 1/2 way.



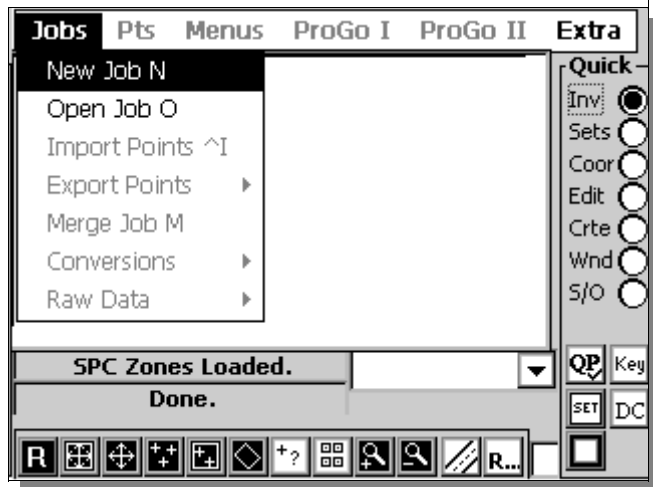
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This is the 'standard' window for Prosurv CE. It is referred to as the 'Main Menu' in Prosurv CE. You will notice that only the Jobs and Extras pull-down Menu items are available. This is because a job has not been created or opened.



### 2. Creating a New Prosurv Job

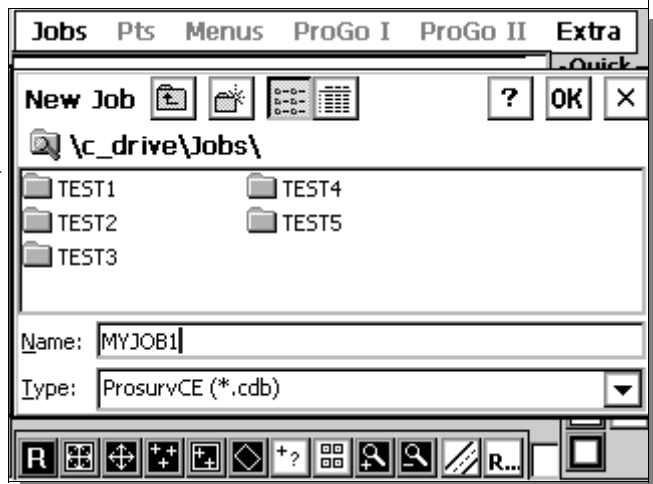
You should now **Create a New Job** by selecting New Job from the **Jobs** pull-down menu. Press Enter.



**Enter the Name** for the new job, and tap the OK button (or press Enter).

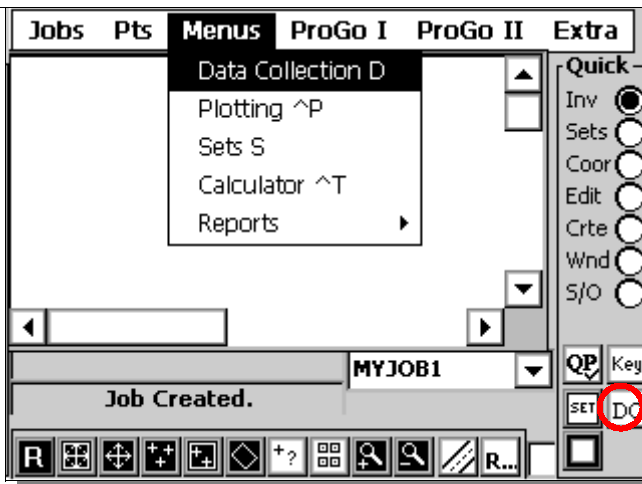


If you're curious about where your jobs are stored and why they're stored where they are, see the **FAQ** page at the end of this Review.



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A notice "Job Created." verifies that your new job has been created. All of the Menu items on the Main Menu are now accessible. Even though we don't yet have any points, we'll go right into Data Collection to get started.

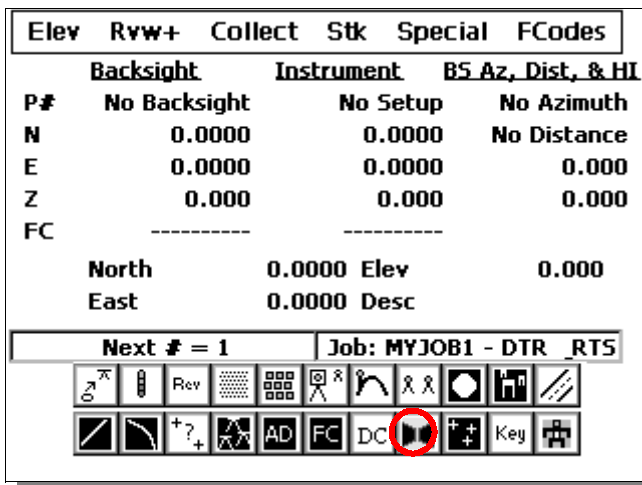


### 3. Going into Data Collection

To go into Data Collection, you can tap the DC button on the lower right corner of the screen, as shown above. Or, you can select **Data Collection** from the pull-down **Menus** selection of the Main Menu.

Prosurv CE performs many checks and sets up your Comm Port for you, when entering Data Collection. Within a few seconds, you will see the screen shown on the right.

 If you're wondering about how Prosurv knows which instrument you're using, see the [FAQ](#) page following this Review.



The Data Collection Info Screen, shown right, displays valuable Setup information, such as your Backsight and Instrument points. It also shows the coordinates and elevation of the last point you shot.

The graphic buttons on the bottom are a quicker way of getting into the routine you want, instead of having to select the routine from the pull-down Menu. The installation guide gives an explanation of each graphic symbol.

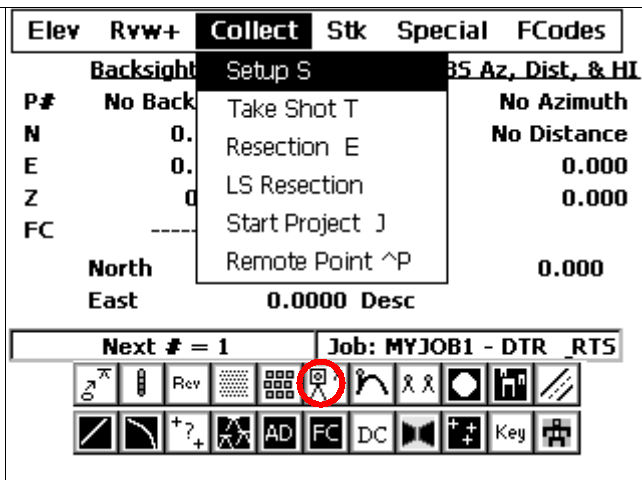
Exiting, or leaving, Data Collection does not close your job. Instead, it simply returns you to the Main Menu. You can **Exit** Data Collection by tapping the 'Swinging Doors' button as shown by the red circle above. You can also Exit Data Collection by selecting **Special**—>**Exit** from the pull-down Menu.

### 4. Getting your Job going by doing a Setup

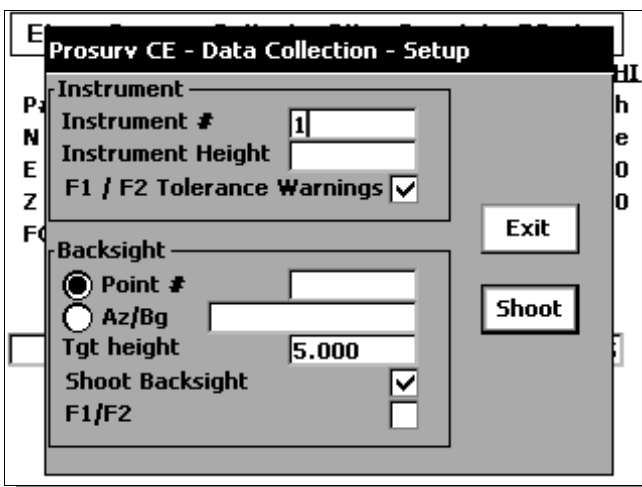
The first thing you need to do, before shooting a Topo or Staking some points, is to establish some job coordinates. This is usually done by creating a Setup. A Setup is simply a Backsight point and an Instrument (occupied) point.

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You can tap the **Setup** icon, or select Setup from the **Collect** pull-down Menu.



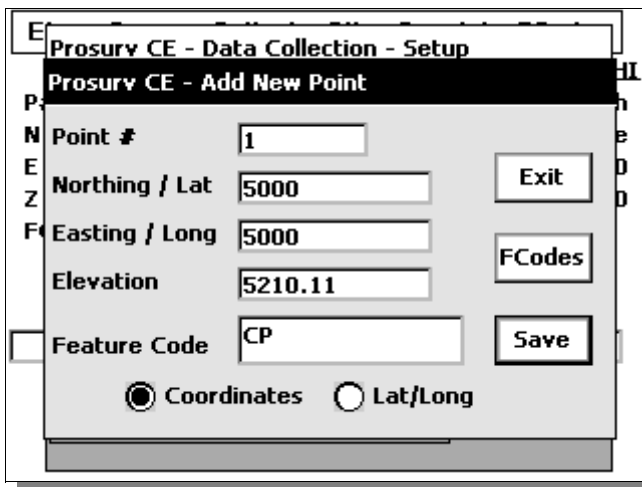
Start by entering your Instrument point #, such as point #1. Then press the **Tab** key to move down to the next box (instrument height).



Prosurv checks to see if #1 exists, and if not, it prompts you to enter some coordinates for point #1. Enter the coordinates and tap the Save button (or press Enter).



You can enter the Feature Code directly, or tap the Fcodes button to choose from the Pop Up Quick Codes or the full Feature Code list. To learn more about Feature Codes and Attributes in Prosurv CE, see the **FAQ** section at the end of this Review.

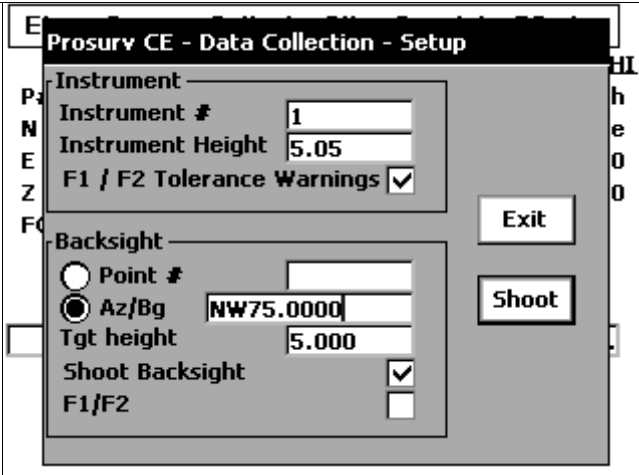


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Next, enter your instrument height.

For your Backsight information, you have a choice of using a point number, or entering a Backsight Azimuth/Bearing. **Point #** is normally selected by default, so tap the **Az/Bg** option if you want to enter a Backsight Azimuth or Bearing.

If you select **Point #**, enter the point # to be used for the backsight point. Again, if the point doesn't exist, you will be prompted to enter the point's coordinates.



The example to the right shows that you want to use a Backsight Bearing of N75.0000W.

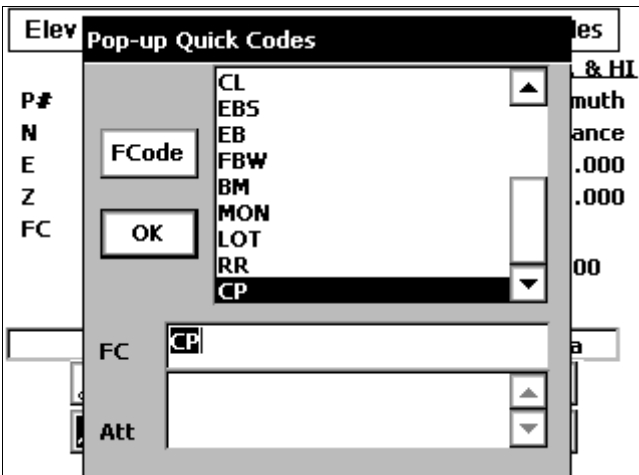
Many routines in Prosurv CE allow you to enter Bearings or Azimuths. Bearings can consist of NW, NE, SW, or SE in upper or lower case, and they can be together, like **NW**, or separate, like N75.0000W.

Next, you can decide whether or not to **shoot the Backsight**. Or, in other words, do you have a prism at the backsight, or are you 'taking line only'? If you **shoot** the backsight, and you're using an Azimuth/Bearing for the Backsight, Prosurv CE will automatically shoot, compute, and store the coordinates of a new Backsight point. For example, point #2 will be the new Backsight point and will have the shot coordinates of your Backsight point.

Lets say, however, that you don't shoot the Backsight, and you're using an Azimuth or Bearing. This means that you're sighting a 'natural' such as a Steeple, or top of a water tower. Using your Bearing or Azimuth, Prosurv CE will place 'bogus' coordinates on a Backsight point for you by using a distance of 10,000 (feet or meters). Again, a point is stored representing your Backsight point, and the Setup is completed.

Finally, if you shoot to your Backsight by using a Point # (rather than an Azimuth or Bearing), Prosurv CE will automatically **Inverse** between the shot point and the 'known' (given) point. The inverse displays the horizontal distance and vertical difference between the shot and known point, providing an instant blunder check of your Setup.

When you shoot the point, the **Pop Up Quick Codes** list will be displayed. You can tap the code you need and tap OK (or press Enter) to store the code. You can even type in some Attributes for the point, such as the name of the Control Point. The Quick Codes list is a list of up to 16 of your favorite, or most-used, codes. This list can be edited and has many useful features. For example, you have a choice of whether to store new codes to the top of the list, or keep the same codes all the time.



To select from your entire feature code list, simply tap the **FCode** button.

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After shooting your Backsight, the Setup data is displayed as shown to the right. Note the Backsight Azimuth of 285°00'00".

**NOW WE'RE READY TO TAKE SOME SHOTS!**

Elev	Rvw+	Collect	Stk	Special	Fcodes
	<b>Backsight</b>	<b>Instrument</b>	<b>BS Az, Dist, &amp; HI</b>		
P#	2	1	285°00'00"		
N	5187.8656	5000.0000	725.857		
E	4298.8762	5000.0000	5.050		
Z	5207.996	5210.110	5215.160		
FC	CP	CP			
North	5187.8656	Elev	5207.996		
East	4298.8762	Desc	CP		
Next # = 3		Job: MYJOB1 - Note			

The Topo/Sideshot button is indicated by the red circle shown to the right. Or, you can select **Take Shot** from the Collect Menu.

The **Take Shot** routine has lots of capability. With the take shot routine, you can shoot as many sideshots as you need, and, there's 8 different types of shots you can take!

Also in the Take Shot routine is the powerful Automated Cross Sectioning routine (sequencing) that can learn and repeat up to 50 different codes. It can even store the sequences in case you need to come back to the job and continue shooting the same road, ditch, etc...

Elev	Rvw+	Collect	Stk	Special	Fcodes
	<b>Backsight</b>	<b>Setup S</b>	<b>BS Az, Dist, &amp; HI</b>		
P#		Take Shot T	285°00'00"		
N	5187.	Resection E	725.857		
E	4298.	LS Resection	5.050		
Z	5207	Start Project J	5215.160		
FC		Remote Point ^P			
North			5207.996		
East	4298.8762	Desc	CP		
Next # = 3		Job: MYJOB1 - Data			

Finally, if you're using a Robotic instrument, such as the Leica TCRA 1100 series, there's also a Continuous Auto-Topo mode in the Take Shot routine. This mode lets you collect topo data as fast as you can walk!

**5. Doing some Topo work**

At first glance, there seems to be a lot to this routine. But if you need to just start shooting some points, all you have to do is tap the **Shoot** button, or press **Enter**. Immediately, you'd be prompted for a code and the point is stored.

Naturally, the point # is incremented automatically...you just keep shooting. There's really nothing else to do!

**Take Shot (Topo / Sideshot)**

Point #  F1 / F2 (D & R)

Target Height  Check Shot

Timer Delay

Straight Shot

**Automated Cross Sectioning**

On  Store New XS to File

Serpentine  Use Pre-defined XS

Status

Pre-Defined

Next FC =

Next # =

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On the right is the complete Feature Code list. If Pop Up Quick Codes are turned Off, then this window will always appear when shooting. If Pop Up Quick Codes are on, you can still access this window by tapping the **Fcodes** button.

Prosurv CE supports control codes as well as feature codes. Control codes are codes such as BL for begin line, or CF for curve fit, and usually are defined (and used) by your CAD program. By allowing you to collect control codes, Prosurv CE supports the CAD functions necessary for automated linework when you download your points into your CAD.

The Topo routine has 8 different types of shots as shown to the right. A Separate Angle shot can be used to locate the center of a tree, center of a power pole, or the corner of a building. The Tree Shot is actually the same as the Separate Angle, but it does it in reverse (Angle first, then Distance).

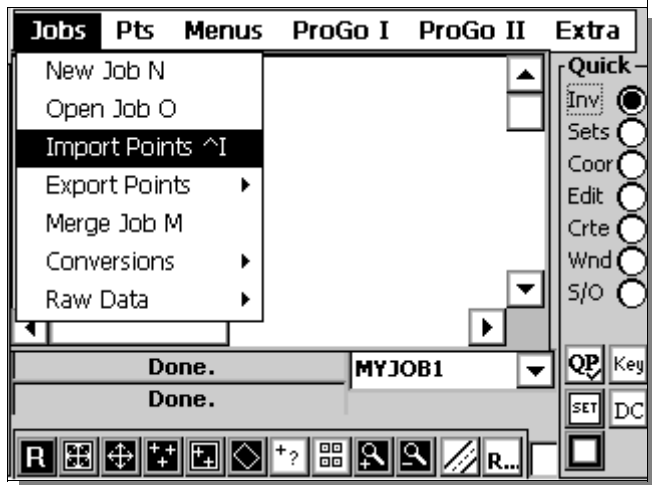
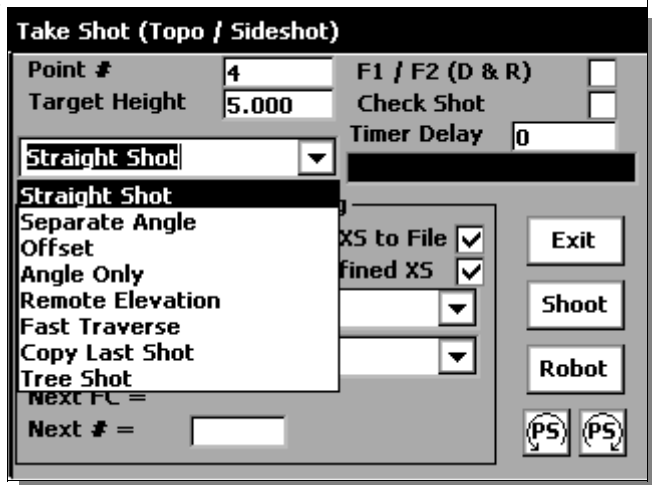
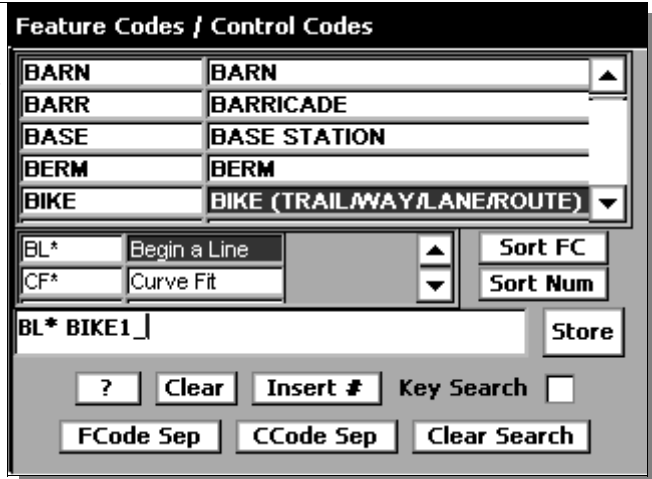
Use the Fast Traverse routine to quickly shoot a new temporary control point, perhaps one needed for additional topo near a creek. Prosurv CE shoots the new CP, then goes into the Setup routine automatically and waits for a new instrument height (you then pick up and move to the new point).

If you have a Robotic instrument, an additional Type of Shot '**Continuous**' will be displayed in the pull-down menu. Also note the PowerSearch® buttons for activating the PowerSearch® on a Leica 1100 Series Robotic instrument.

### 6. Importing Points

Sooner or later, you'll need to import some points into your job. Perhaps you need to stake some points that were given to you by the office CAD people. In Prosurv CE, importing is fast and easy.

From the **Main Menu**, select **Jobs->Import Points**.





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Once again, there are many options, but you only need to worry about one button for now. Tap the **File** button to select the .asc (points) file you want to import.

First, you can use **ActiveSync** to easily upload your Allegro CE with any files you need to have on your Allegro. With your Allegro connected and synchronized (ie attached to your PC), use the **Explore** button and navigate to the folder you want to copy the file to, such as \C\_Drive\Jobs\MyJob1\. Then just paste the file in that folder.

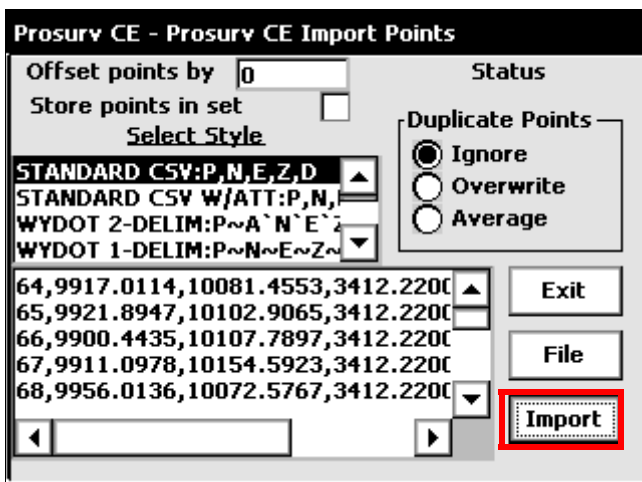
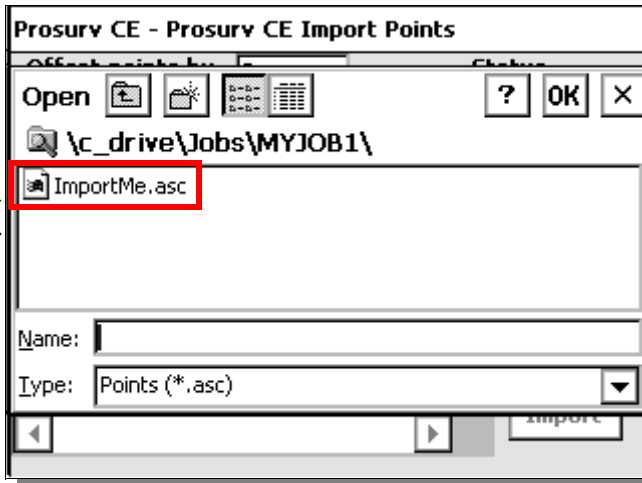
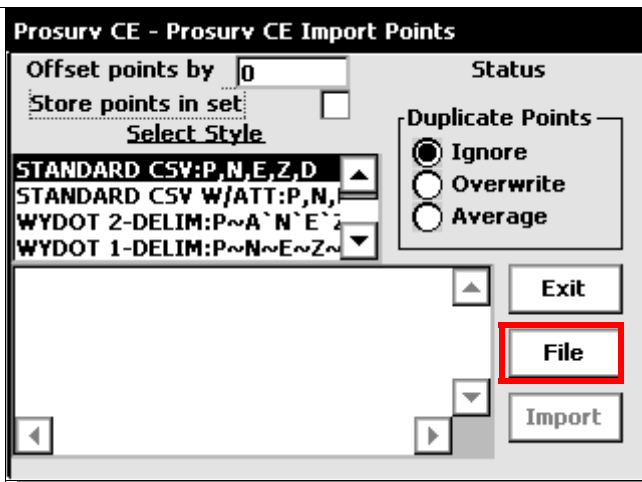
You can see that Prosurv CE always looks for your files (such as .asc files) in your job's folder automatically. So it's important that when you copy the file(s) from your PC, you place them in the folder of the job you need. **Remember—Whenever you create a NEW job, Prosurv CE automatically creates a job folder for you. That way, you always know where your other files are (Exported points for example are stored in that job's folder by default).**

Now, just double-tap the file. Prosurv CE will show you the contents of the file before you import the points, just to be sure you've got the right ones!

All you do now is tap the **Import** button!

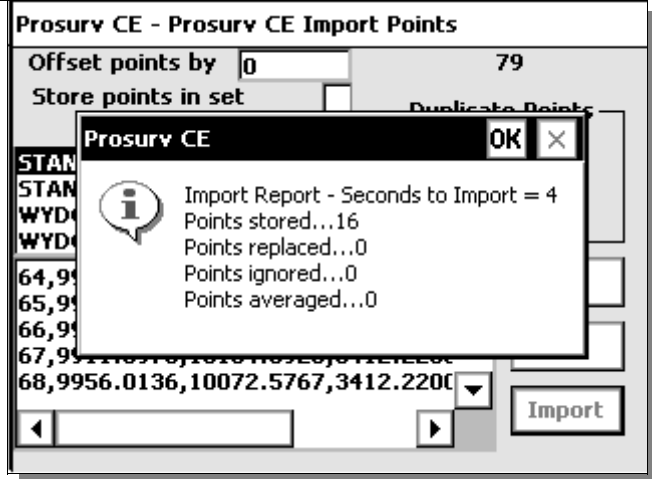
So, there's really just two steps:

1. **File**
2. **Import!**



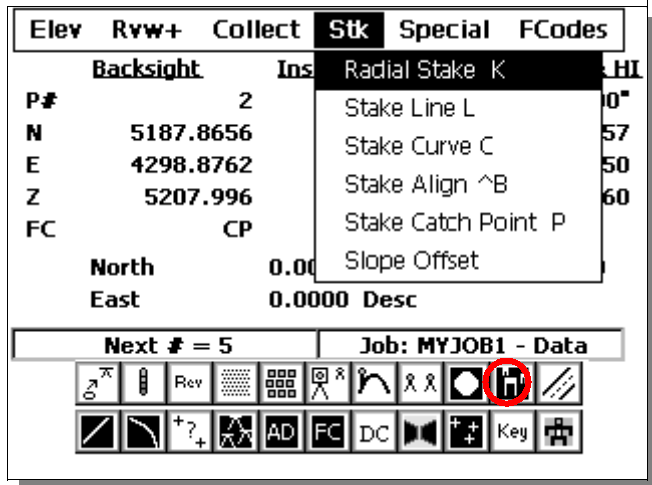
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After importing is complete, Prosurv CE shows you a handy Import Report.



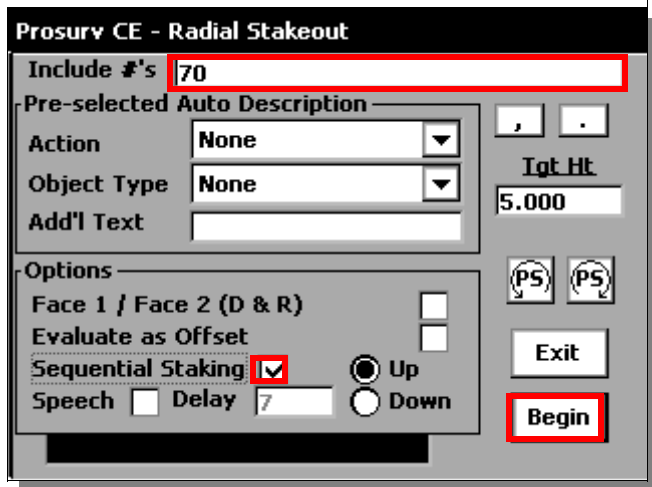
**7. Now we're ready to Stake some Points!**

Go into Data Collection and select **Radial Stake** from the Stk pull-down menu, or tap the **Stakeout Icon** as shown.



To begin staking points, simply enter the point numbers of the points you need to stake. This example shows just one point to be staked, point #70. Note that down below, we've checked the Sequential Staking check box, and we'll be staking sequentially **up**. So after you set (and record) #70, Prosurv CE automatically goes to #71 and so on.

Again, there's a lot more we can do here, but for now, just press **Begin**.

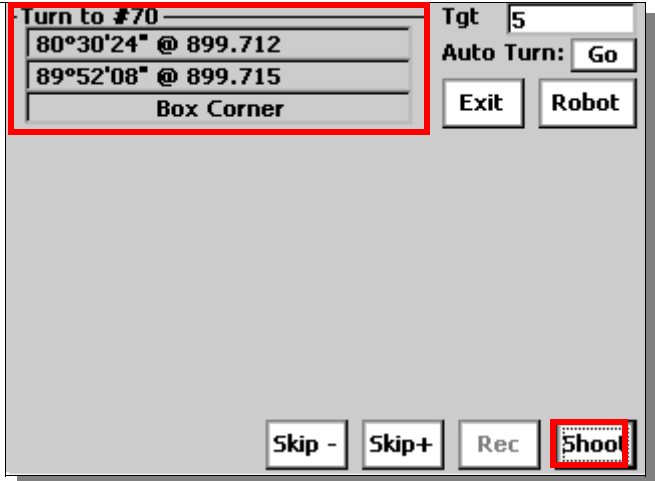


**?** For more info on **point entry**, such as entering point lists or using pre-defined **SETS** of points whenever you see the **Include #'s** box, see the **FAQ** at the end of this review.

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The box at the top left of the screen shows the Horizontal Angle, Horizontal Distance, Zenith (Vertical) Angle, and Slope Distance to get to the staked point. It also shows the descriptor of the point being staked.

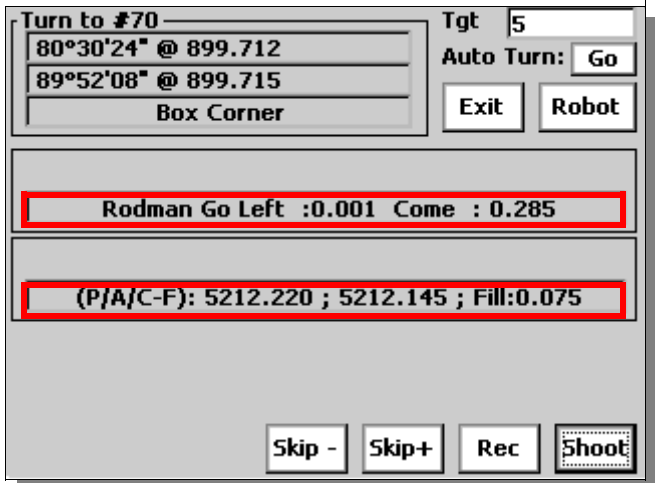
When the rod person is ready, you can take the shot by tapping the **Shoot** button.



Once the shot is taken, you'll see information that tells you how far you need to come or go, or to go left or right, to get to the point. You'll also see a Cut/Fill based on the proposed elevation (the elevation of #70).

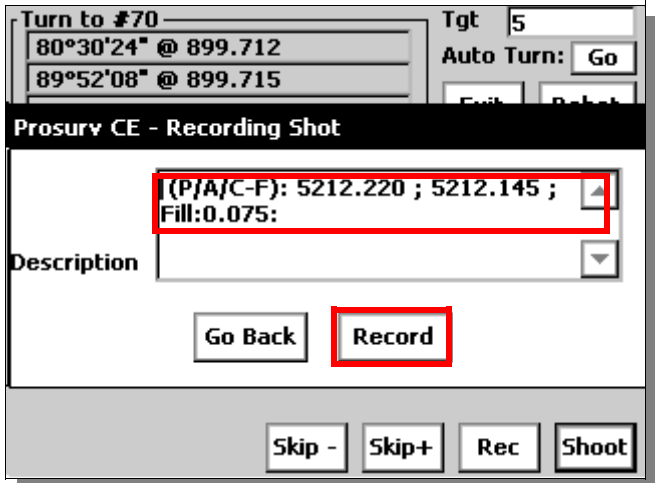
Note: **(P/A/C-F)** stands for **Proposed/Actual/Cut-Fill**.

Now, you can keep shooting by tapping the **Shoot** button (or pressing Enter—since the button has the 'focus'). Or, if the shot is to your liking, you can Record the shot by tapping the **Rec** button.



Prosurv automatically places the grading information in the descriptor for you. When you tap **Record**, the shot point is saved automatically.

Prosurv now moves up to #71 and is ready for the new shot.



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One neat feature in Prosurv's stakeout routine is the ability to pre-select descriptors that will pop up automatically when you record the shot.

The example on the right would result in "Staked #70:Hub & Tack:(P/A/C-F)..."

Prosurv CE - Radial Stakeout

Include #'s 70

Pre-selected Auto Description

Action Staked #

Object Type Hub & Tack

Add'l Text Hub & Tack

Options Stake

Face 1 / Face Rebar

Evaluate as Rebar & Cap

Sequential St Monument

Speech  D Alum Cap

Brass Cap


Tgt Ht 5.000

PS PS

Exit

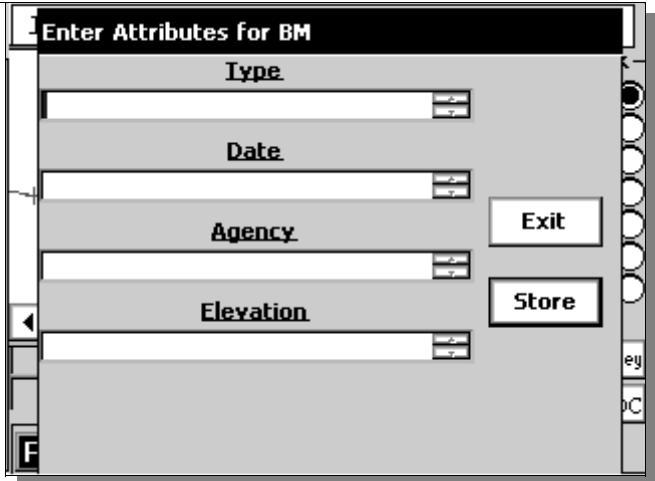
Begin

## FAQ's Answered Here!

- **How do I open a previous JOB?** In the Main Menu, you'll see a  pull-down with the current job's name in the box. The last 10 jobs are 'stored' in this pull-down. To open any of your last 10 jobs, simply pull down the tab, and select the job you need. A prompt will verify that you want to open that job. **Or, you can simply use Open Job from the Jobs pull-down Menu.** *If you use the Open Job routine, remember that Prosurv created a job folder for that job, so you need to go 'into' that folder, then select the job, which will be shown as a .cdb file.*
- **Where are my Prosurv jobs stored, and WHY?** When you install Prosurv CE, one of the files that is automatically installed is called *ProsurvCE\_Defaults.txt*. This file contains all of your *unique* defaults that are used every time you create a new job. Defaults such as instrument type, units, decimals, com port, and much more are stored in this file. Chances are, your defaults file was pre-configured for you based on the instrument(s) that you own, and the device you're using. If you have an Allegro CE device, the first line in the defaults file will be:
  - **DefaultFolder=\c\_drive\Jobs\**  
So, when you give the name for a new job, Prosurv will create a folder with that name, and then creates the actual job (database), or .cdb file. In this example, the job path will be \c\_drive\Jobs\MyJobName\MyJobName.cdb. On the Allegro, the C\_Drive is non-volatile memory, that is files stored here can't be lost due to a power failure.  
The *ProsurvCE\_Defaults.txt* file is located in \Program Files\Prosurv CE HPC\.
- **How does Prosurv CE know what my 'Default' instrument is?** See the question directly above. Your default instrument is defined in your *ProsurvCE\_Defaults.txt* file as:
  - **Instrument=14**
- **Please explain Control Codes, Feature Codes, Attributes, and Pop Up Quick Codes?**
  - **Control Codes** are codes used by your CAD to define the start of a new line, end of a line, etc. Common codes are BL for begin line, EL for end line, and CF for close figure. Prosurv CE allows you to collect control codes with your feature codes. An example is: **BL\* TC1** where the BL\* is the control code (as defined in your CAD). **To Prosurv, the control code is actually part of the feature code.**
  - **Feature Codes** are the description of the point being collected. In times past, the description included everything you wanted to know about the point being shot. Now, it usually represents a short, pre-defined code for the point, such as **BM** for a benchmark. With the advent of Attribute collection, the name, elevation, and other markings can be entered as attributes for the point. By using short, pre-defined feature codes, CAD programs can be easily set up to perform automated linework (or mapping) of your Topo shots.

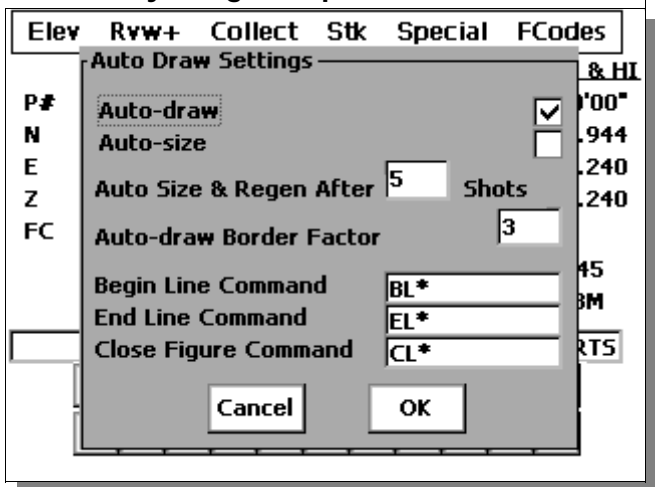
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- **Attributes** can be answers to pre-defined questions for each feature code, or they can simply be any text that further describes the point being shot.
- The **Pop Up Quick Codes** window allows you to select from a short list of feature codes, without having to go through the entire feature code list. This list is limited to your favorite 16 feature codes. While in Pop Up Quick Codes, you can hand-enter attributes as well. You can set up the list so that all 16 codes always stay the same, or, you can set it so that each new code appears at the top of the list (and the 16th code is dropped).



- **Pop Up Quick Codes and Attributes can be turned on/off in either the Decimal/Units routine in the Main Menu, or in Data Collection in the Feature Code/Quick Code settings.**
- **Please see Chapter 15 of the *Surveying With Prosurv CE* manual for a full discussion on Feature Codes and Attributes, including detailed instructions for using your own Feature Code and Attributes lists by using a simple text file.**

- **How do I have Prosurv CE automatically draw my linework while I shoot?** First, your Feature Code list defines which codes are line codes and which are point codes (see Chapter 15 of the manual). So, as you long as you use codes that are defined as line codes, all you need to do is **turn Auto-draw ON and shoot your points.** Prosurv CE has *smart* line numbering, so you can go ahead and use TC1, TC2, TC3 and so on. Prosurv CE will know which lines to connect by their line numbers!



- **What does *Include #'s* mean, and how do I enter point lists? Also, What Are SETS?** Anytime you see *Include #'s*, you can enter points in a point list, or you can enter a pre-defined SET of points. A **comma** means "**and**", while a **period** means "**through**". Acceptable entries are:

- **2.25,1259.1275,10009.10025**
- **79.59** (note that reverse order *is* allowed)
- **3500,3503,3512,3529.3575**
- **\*15** (in stakeout, this would mean stake the points that are defined in SET #15)
- **:22** (same as \*, this would indicate SET #22)
- **\_49** (same as \*, this would indicate SET #49)
- The underscore **\_** was added specifically for the Allegro, for ease of entry (rather than having to use a "shift" button on the keyboard for \* or :
- **SEE Chapter 6 of the *Surveying With Prosurv CE* manual for a full discussion on creating and using SETS of points!**