FIELD NOTES

CEASER NEWSLETTER

Contents   **March 2015**

Welcome to CEASER Fieldnotes

Many ancient structures like the pyramids, the acropolis and the Roman road infrastructures have survived for over 2000 years. This is testament in part to the successful application of surveying techniques, no matter how crude their methods might seem by today's standards. From its ancient roots to now, surveying has become and will always be, an integral part of a society striving to apply some order to its existence.

During my career I have been fortunate enough to witness meteoric-like progress in the field of surveying. We have moved on from tools like upside down theodolites, steel tapes, log tables and slide rulers to state of the art computers and surveying equipment.

During the 1990s Psion introduced us to the Organiser, a portable handheld computer, which was programmable and robust. Not wanting to be left behind, we very soon started developing software to assist us in our work and this was a major step forward in our quest to become truly mobile and free from the shackles of the office desk.

Psion, in their ongoing development, gave us next the Workabout MX and soon thereafter the Workabout Pro, which was one of the first rugged Windows Mobile based units. Soon other makes of rugged units followed, which were robust enough to withstand the conditions that surveyors are often exposed to. The progress has been such that the only limiting factors are no longer the tools, but the ability of the person using these tools.

The same progress that we have witnessed in the advancement of our surveying equipment can be compared to the progress of the Ceaser program. From a one man operation Ceaser has grown to a fully-fledged company with numerous programmers and backup staff supporting the program on an international basis. The program has also been re-written with the latest development platforms and techniques assuring that the software will continue its reputation as a leader in the surveying software market.
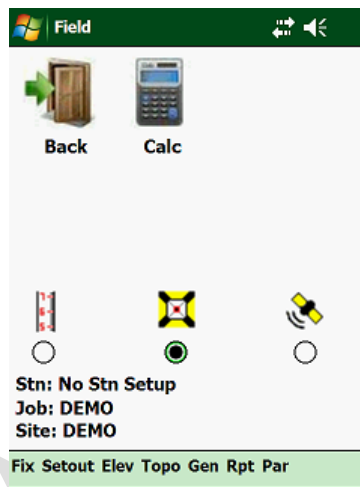
Program Features:

A survey project is hardly ever restricted to the use of one type of survey equipment. You will find yourself in situations where you need to change to a different survey instrument to accomplish your different tasks on site. You might find yourself on site levelling in benchmarks using your Digital Level, then you need to place Bolt positions for which you will use your Total Station and after that you must put in Batterboards for the bulk Earthworks operations for which you will use the GPS.

It is for situations like these that we have made CEASER_*field* flexible and it is now possible to swap between different types of surveying equipment by merely tapping on the required type of equipment without any issues or loss of data. CEASER_*field* will remember the setup parameters for each instrument fixed and use the appropriate setup info according to the instrument selected.
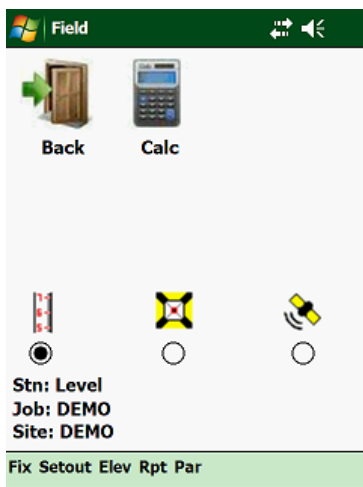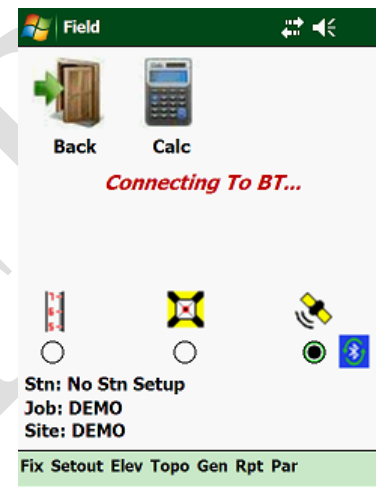
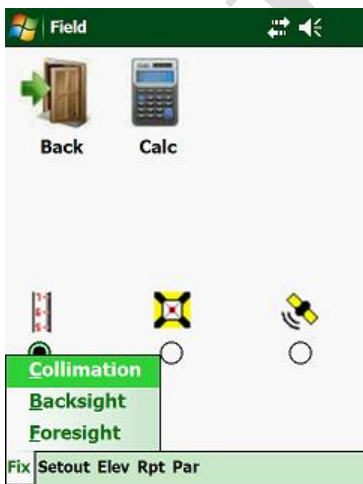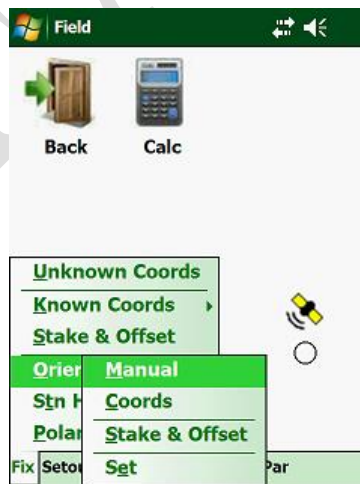| Use your Level	then your Total Station	or maybe your GPS

Different setup (fixing) options are available depending on the type of instrument selected:

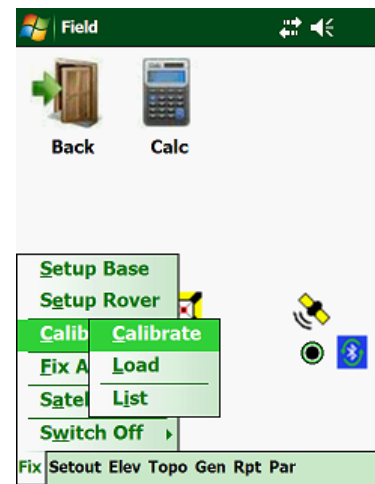| Level	Total Station	GPS

Fix your instrument once, irrespective of which instrument you are using and CEASER *field* will remember each instrument setup parameters:

Backsight		ok
⦿ Local ◯ Site ◯ Global		
Select Pt:	A	▼
Pt Name:	A	
Level:	157.114	
B\Sight:	0.000	
Coll:	157.114	
☐ Inverse		
	OK Calc Exit	

Free Station Setup		ok
☑ Calc Hgt	☑ Orient	
Inst Hgt:	0.000	
Inst Face:	Left ▼	
⦿ Local ◯ Site ◯ Global		
Select Pt:	B	▼
Pt Name:	B	
Target:	0.000	?
	HVS HV Exit	

Setup Base		ok
PDOP:	1.6	Sat No: 12
Fix:	AUTONOMUS	
Sdy:	3.229	
Sdx:	2.918	
Sdz:	5.236	
Y Coord:	3516.753	
X Coord:	3731855.702	
Z Coord:	158.317	
	Stop Prev Exit	

The program uses the same Design Database and stores the Field results in the same Database irrespective of the instrument used.

Let us take the case where you have to place Profile Pegs for the Design Surface. By selecting a different type of instrument, you will have a different screen layout, but it is still the same Profile that you are setting out.

Level   Total Station   GPS

Design Width		ok
Stake:	20.000	<
Side	Left ▼	>
Offset:	-2.000	
Crossfall:	-2.000	
B\Design:	96.893	<>
Staff:	0.332	
Diff:	0.080	
	Calc Exit	

Setout Design Width		ok
Stake:	20.000	<
Side:	Left ▼	>
Offset:	-2.000	
Crossfall:	-2.000	
Bear:	37.0139	
Dist:	21.190	
	Next Calc Exit	

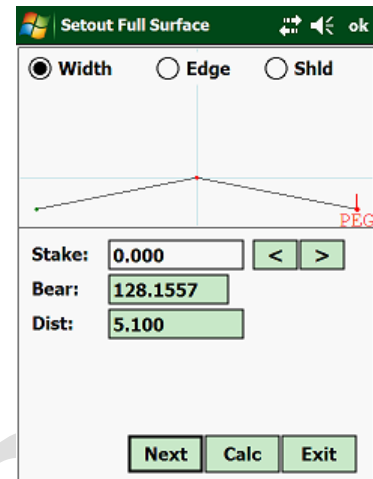| GPS Setout		ok
W: 24631.1	S:	26822.4
Dn:	55.488	
Ant:	2.000	
Sat: 13 PDOP: 1.5 Fix:		Save
⦿ NS ◯ Ref ◯ Sun		Prev

Irrespective of the type of instrument used, it's the same profile peg, but with different screen layouts to suit the instrument used. All recorded field information is also stored in the same Database from any one of the instruments used.

What happened?   They didn't use CEASER!
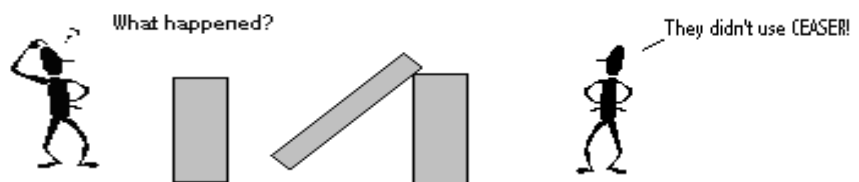
An additional advantage with the GPS is that you can trace your design parameters in real time. Results will be displayed in real time as you move your Rover along the selected design feature.

Design Features are:

- Batters
- Earthworks Check
- Design Widths
- Edge Shifts
- Shoulders
- Pivot Points
- Appendages
- Layer Checks
- Strings
- Terraces
- Rehabilitation
- ……………………………….etc.

More screen shots:
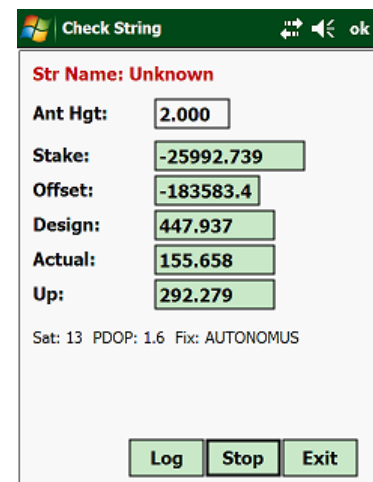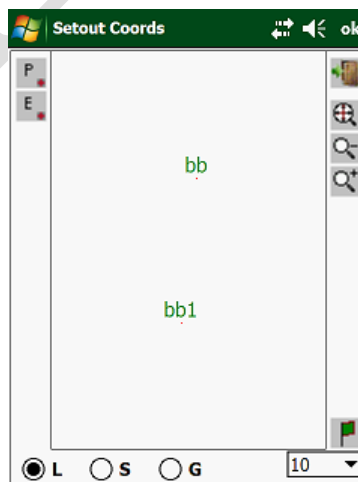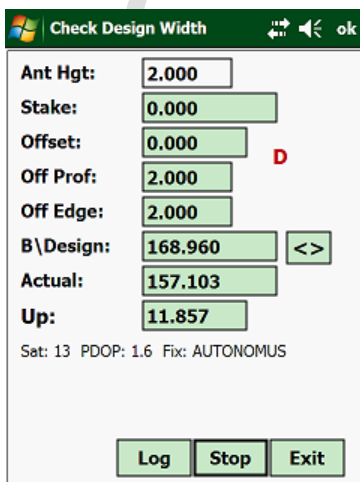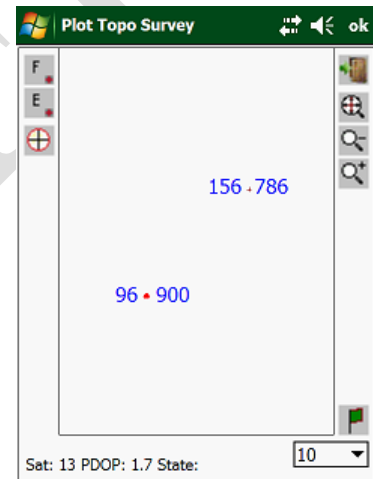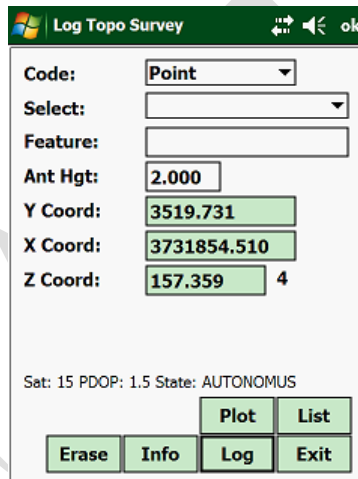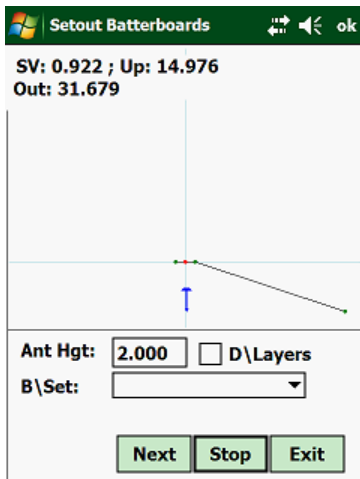
New GPS Setout Feature:

For some or other reason some Surveyors do not know where North or South is and the existing display, when setting out, showed the Surveyor how many meters he or she had to move in each direction to reach the setting out point. The correct method is that you have to orientate yourself so that you face north and then follow the direction and distances displayed on your screen.
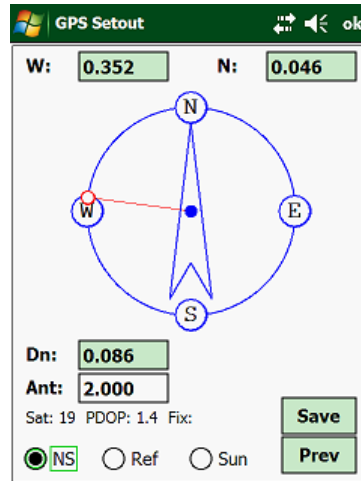
It is for this reason that we have added two new methods:

- Reference Line: with this method an imaginary line is drawn from the Base Setup to the point to be placed. The program will then guide the Surveyor with directions and distance in relation to this imaginary line.

- Shadow Method: the program knows what time of the day it is and because of this it can calculate the position of the sun and the direction of your shadow. Using the direction of your shadow the program will guide the Surveyor to the setting out point in relation to the shadow that is being cast by the User.