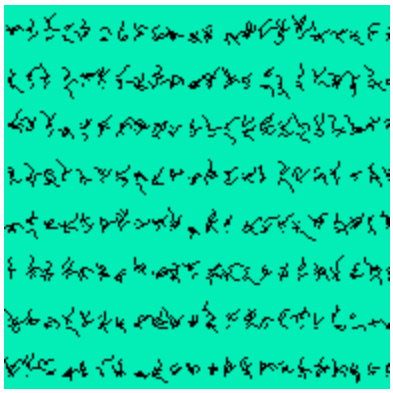
ConvertÔ

Windows Application Software

Technical Reference Manual



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1.0. Introduction

The Convert utility is used to transform data recorded on a surface or mobile station into a usable format. Convert can be used to generate a human readable text report, or a delimited data file suitable for import into a database or spreadsheet program. Convert requires MS Windows 95 or NT to run. New versions of Convert are freely available on the Desert Star web site: *http://www.desertstar.com*.

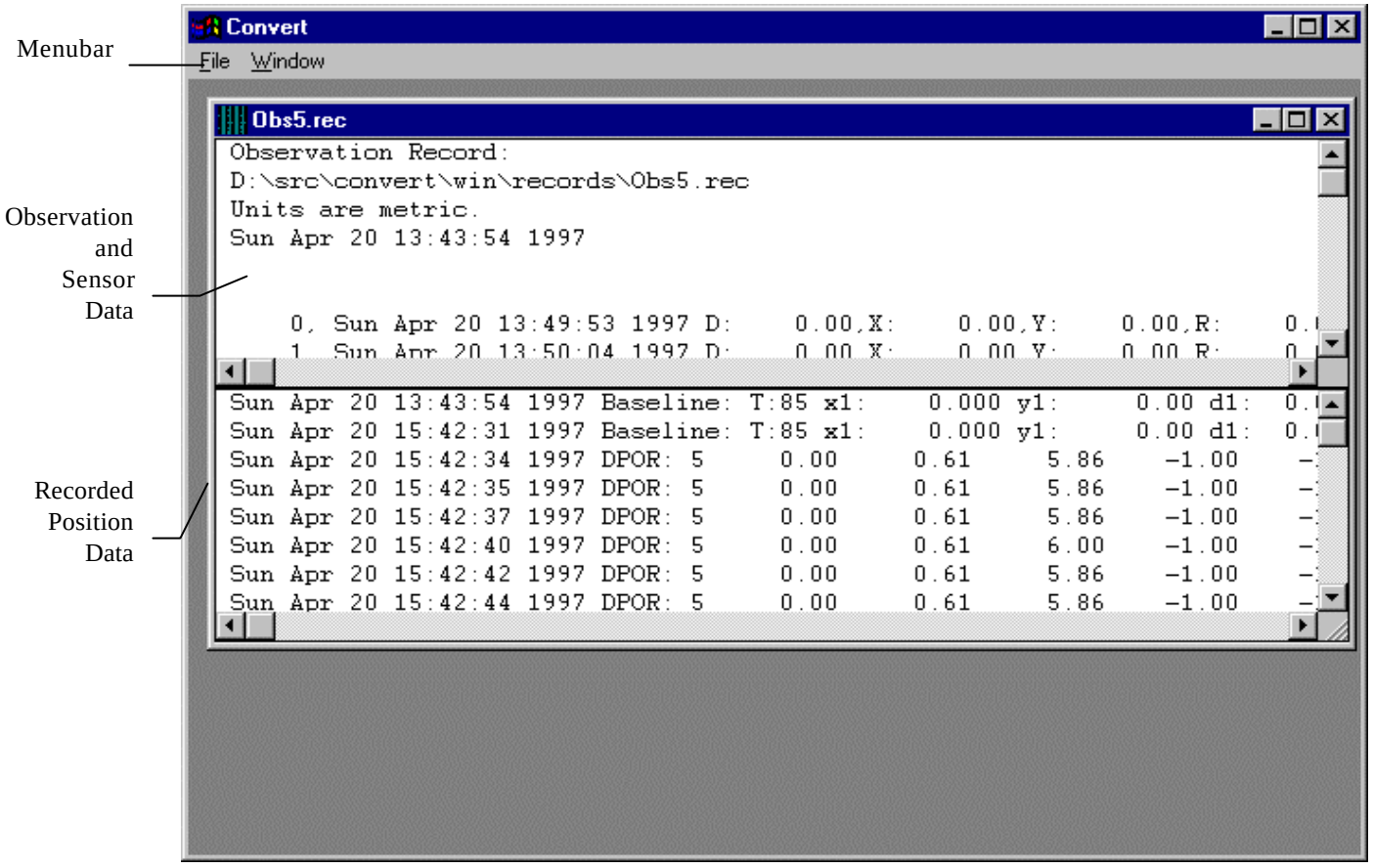

Figure 1.0: Convert Main Screens

2.0. Basic Operation

Convert is quite simple to use. The user must only specify a data file (created on, and retrieved from a station) , specify a configuration file, and perhaps set some optional fields. Covert does the rest.

2.1. Creation and Retrieval of Data

Creating Data:

Data is created using an application running on a station, such as SmartDive™. Please see the specific application literature for information on recording data.

Retrieval of Data:

A data file is created when you retrieve(download) the data from a station. The DiveTerm™ utility is used for retrieving data from the station. Please see the *DiveTerm Technical Reference Manual* for more information.

2.2. Converting a Data File

Once your data has been retrieved you can convert it into a useful form.

Select ***Load a New Record*** from the ***File*** menu. A file browser will appear, choose the data file that you wish to convert. The ***Settings*** screen will now appear:

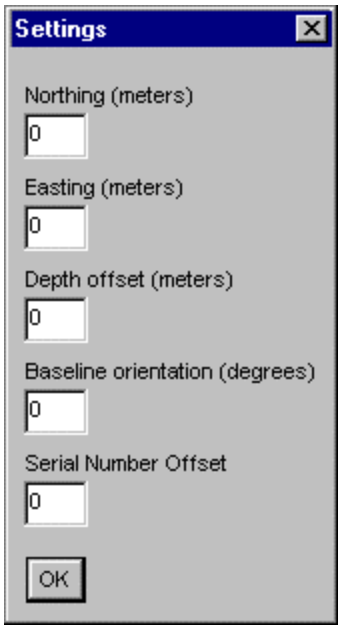

Figure 2.0: Settings Screen (using Metric units)

The settings allow you to apply various conversions to the data in the file. The units are specified for each field. To change between units you must select the desired units from the ***Options*** menu **BEFORE** load the data file.

Serial Number Offset:

Enter a value to be added to all serial numbers. This is allows you to more easily integrate data from multiple surveys.

Depth Offset:

Enter a value to be added to all depth values. This is essentially a correction factor for tidal offsets.

Northing:

Enter the Northing of the zero point for your data file.

Easting:

Enter the Easting of the zero point for your data file.

Baseline Orientation:

Enter a value to used as orientation of the baseline with regards to North.

The Northings and Eastings of each data point are calculated in the following way:

Northing **=** Northing of Zero point **+** Y **x** Sin(baseline orientation) **+** X **x** Cos(baseline orientation)
Easting **=** Easting of Zero point **-** Y **x** Cos(baseline orientation) **+** X **x** Sin(baseline orientation);

Press ***Ok*** to use the settings you chose.

Convert will now display another file browser. Select the configuration that was used on the station from which the data was retrieved.

Convert will now begin processing the data.

3.0. The Data Screens

Convert will display two scrollable screens for each data file that has been loaded. The top screen will contain data from observation recordings and autonomous data acquisition. The bottom screen will contain data from automatic position recordings.

3.1. Observation and Sensor Data Screen

This is the top scrollable screen. It displays data from observation recordings or autonomous sensor acquisitions.

3.1.1. Observation Data

Observation data will be displayed with one record per line. The fields are shown in the order they are defined in the configuration file. Please see the documentation on the configuration file for more information.

The first column is always the Serial Number.
The second column is always the Time Stamp.

All other columns reflect data that you defined in the configuration file to be recorded. Each field is of the form :

label: Data Value

The units of each data field is dependent upon the system of units that you selected in the ***Options*** Menu.

Below is a key to the labels and units that convert uses for observation records.

Key:	X	Y	D	R
Meaning:	**X Position of observation**	**Y Position of observation**	**Depth of observation**	**RMS Error of observation recording position**
Metric Units	**Meter**	**Meter**	**Meter**	**Meter**
American Units	**Inch**	**Inch**	**Feet**	**Inch**

Key:	f	I	s	L#
Meaning:	**Float Field: A floating point number. A number possibly containing a decimal point.**	**Integer Field. A whole number without a decimal point.**	**String Field. Alpha-numerical data entered.**	**User Defined List, where # is the number of the list.**
Metric Units	**None**	**None**	**None**	**None**
American Units	**None**	**None**	**None**	**None**

Key:	N	E
Meaning:	**Northing of observation**	**Easting of observation**
Metric Units	**Meter**	**Meter**
American Units	**Inches**	**Inches**

3.1.2. Sensor Data

Sensor data will be displayed with one record per line. Each field after the Time Stamp contains the data for the corresponding sensor channel. The raw sensor values are displayed, Convert does no manipulation on the sensor data at this time.

3.2. Recorded Position Data Screen

This is the bottom scrollable screen. It displays data from automatic position recordings. Two types of records are displayed on this screen. Baseline data and Position data.

The number of fields are constant for both types of records.

Each new baseline record overrides the previous baseline records for navigation purposes.

Baseline Data:

Field (key)	1 (N/A)	2 (Baseline)	3 (T)
Meaning:	Time Stamp	Record Identifier. Lets you know this is a baseline record.	Temperature
Metric Units	None	None	Degrees C
American Units	None	None	Degrees F

Key	X#	Y#	D#
Meaning:	X position of baseline station with an Id of #	Y position of baseline station with an Id of #	Depth of baseline station with an Id of #
Metric Units	Meters	Meters	Meters
American Units	Feet	Feet	Feet

Position Data:

Field	1	2	3
Meaning:	Time Stamp	Record Identifier. Lets you know this is a Position record.	Station Name
Metric Units	None	None	None
American Units	None	None	None

Field	4	5	6
Meaning:	Range to Surface Station	Depth	Tank Air Pressure
Metric Units	Meters	Meters	Bar
American Units	Inches	Feet	Psi

Field	7	8	10	11
Meaning:	Range To Baseline Station 1	Range To Baseline Station 2	Range To Baseline Station 3	Range To Baseline Station 4
Metric Units	Meters	Meters	Meters	Meters
American Units	Inch	Inch	Inch	Inch

Note: A Range value of -1 denotes that the data was not available.

4.0. Saving the Data

Convert has two formats in which it can save data. ***Save as Text*** writes data to a file exactly as it appears in it's respective data screen. ***Save For Import*** saves data in a delimited text file that can be easily imported into most databases and spreadsheets for analysis.

Save as Text:

Choose ***File/Save Observations as Text*** from the ***Main Window Menubar*** to save the Observation/Sensor Data screen as a human readable text file.

Choose ***File/Save Position Data as Text*** from the ***Main Window Menubar*** to save the Position Data screen as a human readable text file.

Save For Import:

Choose ***File/Save Observations For Import*** from the ***Main Window Menubar*** to save the Observation/Sensor Data screen as a delimited file.

Choose ***File/Save Position Data For Import*** from the ***Main Window Menubar*** to save the Position Data screen as a delimited file.

The ***Save For Import*** screen will then appear. Check the fields that you wish to go into the saved file. You can also change the ***Delimiter*** character. The ***Delimiter*** character is what separates each data element in the saved file. The file will be stored with one record per line containing the data fields that you selected.

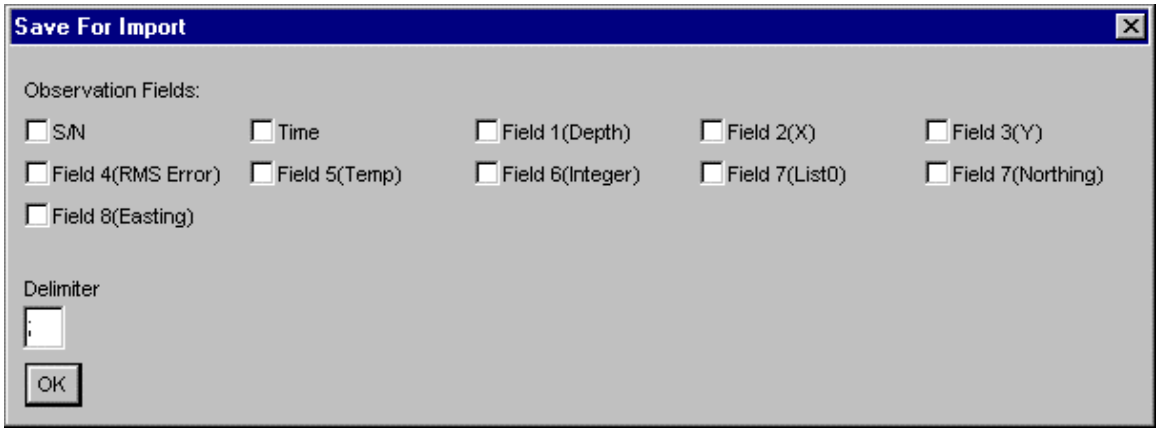

Figure 2.0: Save for Import Screen (Observation records)

Advise:

When saving Position Data for import only the Position records will be saved. The Baseline records will not be saved to the delimited file.

5.0. Other Controls

Use Metric Units:

Choose ***Options/Use Metric Units*** from the ***Main Window Menubar*** to enter data on the configuration screens in metric units (meters, degrees Celsius, etc.)

Use American Units:

Choose ***Options/Use American Units*** from the ***Main Window Menubar*** to enter data on the configuration screens in American units (ft, inch, degrees Fahrenheit, etc.)

Window Menu Items:

Cascade:

Arranges open windows so they overlap and you can see each title bar.

Tile:

Arranges open windows one above the next so that they do not overlap.

Arrange Icons:

Arranges minimized window icons so that they all line up.

Next:

Selects the next window in the window list as the current window, and brings it forward.

There is also list of open windows. You can select the active window here.