

The CEDRA Corporation's COMMAND OF THE MONTH

A monthly information bulletin

January 2012

FEATURED COMMAND
Custom Formatted
Station Strings



Application Description

In last month's issue we discussed the Format Bearings command which provides the ability to create custom formatted bearing text strings using an existing bearing text string or the geometry of the line feature being processed.

This month we thought we would discuss the ability to create custom formatted station text strings using the Format Stations command. **Stations** are used in roadway design, the layout of pipelines and projects where positioning along a path needs to be defined.

A raw station value will appear as 4750. Depending upon the units (US or SI), a simple formatted version of the above station value would be 47+50 or 4+750. More complex formatted versions would involve the use of prefixes and/or suffixes as well as the specification of the number of digits to the right of the decimal point.

Since the Format Stations command is in the same toolbar as the Format Bearings command and involves the generation of a formatted text string, we thought it would make sense to discuss the command at this time.

The CEDRA Solution

As mentioned above, the [Format Stations] command is located within the CEDRA-AVland-FormattingMenus Toolbar, see Figure 1, within the CEDRA-StationFormat Commands ComboBox, see Figure 2. This command operates in a similar fashion as the For-

mat Bearings command so that if one knows how to use the one command, utilization of the other is very straightforward.

Format Stations Overview

The *Format Stations* menu command in the CEDRA-AVland-FormattingMenus toolbar enables the user to convert a station value into a formatted station value, storing the formatted station value in a user-specified attribute field. For example, the station value of 2250 can be converted into a text string such as 22+50, storing the text string in a specific attribute field. In performing this conversion, the user has the ability to:

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This month's issue discusses how to create a custom formatted station text string from an un-formatted or raw station value.

- include a prefix and/or suffix,
- control the number of digits to the right of the decimal point, and
- specify a station multiplier.

In using this command, the user must first activate in the Table of Contents (TOC) of ArcMap the layer or table to be processed. If no layer or table has been activated, the error message of Figure 3 is displayed. If more than one layer or table have been activated, the error message of Figure 4 is displayed.

Because of the way alignment stations are saved during the design process,



Figure 1
CEDRA-AVland-FormattingMenus
Toolbar



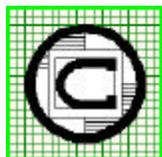
Figure 2
CEDRA-StationFormat Commands
ComboBox

CEDRA-AVland has no way of knowing whether a station data field to be converted is a station data field or not. Therefore, the user must be cognizant of which layer or table is activated. Conversely, this may be taken advantage of to modify any attribute field of any layer or table containing a distance and change it into a string in a new attribute field.

In addition to activating the proper layer or table in the TOC, the user has the option of selecting features in the ArcMap display, or selecting records in the table to define which features or records are to have their raw station values formatted. If no features or records have been selected, then all features or records of the layer or table will be formatted.



Figure 3
No Layer Selected Warning



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Figure 4
Too Many Layers Selected Warning

Format Stations Operation

Having activated the desired layer or table in the TOC and optionally selected any desired features or records, and having invoked the subject menu command, the multi-input dialog box of Figure 5 is displayed.

- 1 **Scroll** down in the *Attribute containing Station Values*: data field, and **select** the attribute field that contains the raw station value that is to be formatted.
- 2 **Scroll** down in the *Attribute to be Populated*: data field, and **select** the attribute field to contain the new formatted station value. Note that the default choice list in this data field contains the *Create the STA_TEXT field* option followed by certain other data fields that are chosen by the program. Unless there is already an attribute field containing formatted station values, the user should select the **Create the STA_TEXT field** option.

When the *Create the STA_TEXT field* option is selected, the command will create a field called *STA_TEXT* that is of the string/text type with a field width of 20. That is, the maximum number of characters in this field will be 20. If the user requires a field width greater than 20, then native ArcMap functionality should be used to create a field of the desired width.

- 3 **Enter** in the *Prefix, <none> denotes no prefix*: data field the

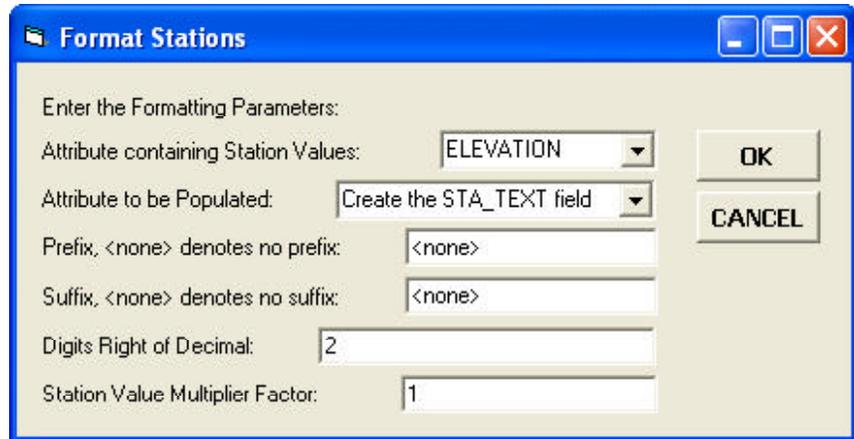


Figure 5 - The Default Station Formatting Parameters

desired character string to denote the **prefix** of the formatted station value,
or
accept the default **<none>** entry to denote that no prefix is desired.

- 4 **Enter** in the *Suffix, <none> denotes no suffix*: data field the desired character string to denote the **suffix** of the formatted station value,
or
accept the default **<none>** entry to denote that no suffix is desired.

An example of a prefix could be the entry of A1 to format a station value of 2250 to be A1 22+50 denoting station 22+50 of alignment A1, while a similar entry in Step 4 would append at the end the specified entry.

- 5 **Enter** in the *Digits Right of Decimal*: data field the desired number of digits to the right of the decimal point to be included in the formatted station value. This value must be zero (0) or greater. It cannot be negative.
- 6 **Enter** in the *Station Value Multiplier Factor*: data field the desired factor by which the raw station values are to be multiplied before they are formatted.

59 features in OG1_PRO were processed...

Figure 6
Completion of Station Formatting

If a value of 1 is specified, the raw station value is used as is. A value of zero results in the display of an error message. In this case click at the OK button to acknowledge and remedy the condition.

- 7 **Click** at the **OK** button to continue,
or
click at the **Cancel** button to abort the command.

Having clicked at the *OK* button, the command processes the selected features/records in the active layer/table. If there are no selected features/records, then all features/records in the layer/table are processed. A progress bar is displayed in the status bar area indicating the percent completion of the conversion.

Once the command has completed the station formatting process, a message similar to that of Figure 6 is displayed in the status bar area informing the user of how many features or records have been formatted.

In formatting the raw stations, or the raw stations after they have been multiplied

by the multiplier factor, they are divided by (a) 100, if the *Data Entry Units* property is set to US, or (b) by 1000 if said property is set to SI, and a plus (+) sign is inserted replacing the decimal point resulting from said division.

Shown in Figure 7 and Figure 8 are a "before" and "after" image of a table that was processed with this command. In this example, the prefix 'STA=' was used. Note that the user can include blank characters in the prefix, as well as in the suffix. There was no suffix used in this

example so that the suffix parameter was set to <none>. The number of digits to the right of the decimal point was set to 3, and the station value multiplier factor was set to 1.

Note

If the user wishes to not keep the new formatted station text strings, the {Edit} [Undo Format Stations] command can be invoked. This is extremely useful in the case where the same field is being used for extraction and storing.

Summary

Those users who require the ability to create a custom formatted station string will find the [Format Stations] command extremely useful.

As always, users who have a need for functionality that is not presently available in CEDRA software should feel free to forward these requests to CEDRA, as well as, any other comments or suggestions you may have.

OID	ID	STATION	ELEVATION
51	0	2200	535.533909
52	0	2225	534.917848
53	0	2250	534.967592
54	0	2252.463522	534.980121
55	0	2275	535.159126
56	0	2300	535.312354
57	0	2325	535.226755
58	0	2341.909028	534.973616

Figure 7 - Raw Stations to Be Formatted

OID	ID	STATION	ELEVATION	STA_TEXT
51	0	2200	535.533909	STA = 22+00.000
52	0	2225	534.917848	STA = 22+25.000
53	0	2250	534.967592	STA = 22+50.000
54	0	2252.463522	534.980121	STA = 22+52.464
55	0	2275	535.159126	STA = 22+75.000
56	0	2300	535.312354	STA = 23+00.000
57	0	2325	535.226755	STA = 23+25.000
58	0	2341.909028	534.973616	STA = 23+41.909

Figure 8 - Formatted Station Values stored in the STA_TEXT field

If you have a request for Command Of The Month, feel free to phone, fax or e-mail your request to The CEDRA Corporation.