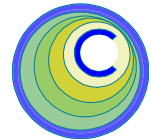


The CEDRA Corporation's COMMAND OF THE MONTH

A monthly information bulletin

February 2008

FEATURED COMMAND
Annotation Creation
and Editing



Application Description

It's been said that a map isn't a map until there's some text on the map. This adage really is true because without any text all you have is just line-work.

The question then becomes what text belongs on the map and how is it placed on the map. Regarding the first part of the question, what text belongs on the map, this really depends upon the purpose of the map and who will be looking at the map.


The second part of the question, which is what we will be focusing in on in this month's issue of Command of the Month, is how to place the text on the map.

The May 2005, June 2006 and January 2008 issues discussed various annotation commands offered within the CEDRA-AVcad software. This month's issue expands upon those previous issues by discussing the tools available within the {CEDRA-Text-Tools} toolbar.

The CEDRA Solution

To address the application of creating new and editing existing annotation features (text), the tools within the {CEDRA-Text-Tools} toolbar can be used, see Figure 1. Note that this functionality is available only for ArcGIS® users.

The tools within this toolbar enable the user to:

- create new annotation features at a specified location, 

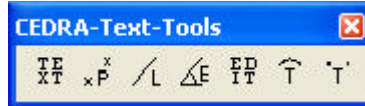








Figure 1 - CEDRA-Text-Tools Toolbar for ArcGIS Users

- center and offset existing annotation features along an implied baseline (two picked points), 
- center and offset existing annotation features along an existing line feature, 
- orient an existing annotation feature at a prescribed angle, 
- edit the text string that is associated with an existing annotation feature, 
- convert an existing annotation feature to follow the orientation or path of a polyline (curved text), 
- center and space existing annotation features within an implied rectangle, 

Command Of The Month bulletin

This month's issue discusses the process of creating and editing annotation features, including how to create curved text strings.

Text Tool #1

The Create a Text String tool,  located on the far left of the CEDRA-Text-Tools

toolbar, see Figure 1, and within the CEDRA Tool Palette, enables the user to create a new annotation feature that is positioned:

- at a user-specified location,
- centered and offset about two picked points, or
- centered and offset about a line.

Once the tool has been selected, the user:

- Makes a pick in the map area. The location of the pick is used in the positioning of the new annotation feature. The setting of the Text Positioning parameter, as shown in Figure 2(a), is used to control the positioning of the annotation feature.



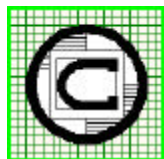
Figure 2(a)
Create a Text String Dialog Box

The Text Positioning parameter offers three options:

- "Positioned at Pick"
- "Centered about 2 Points"
- "Centered about a Line"

Depending upon which of the above options is to be selected, the pick made in this step denotes for the:

- "Positioned at Pick" option, the location where the low left corner of the annotation is to appear,



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- "Centered about 2 Points" option, the start point of an implied baseline in which the annotation is to be centered and offset about, or
- "Centered about a Line" option, a location that identifies the line feature that the annotation is to be centered and offset about.

2. Once the pick has been made, the command will prompt the user to fill-in a dialog box, similar to the one shown in Figure 2(a), after which, the user can click the *OK* button to continue, or the *Cancel* button to abort the command.

Beginning at the top of the dialog box, the user is able to control the following:

Data Line 1 - Text Size

The size of the text string in terms of points.

Data Line 2 - Text Angle

The Cartesian angle of the text string in degrees.

Data Line 3 - Text Style

From the choice list message box select one of the following options:

- "Normal"
- "Italic"
- "Bold Italic"
- "Bold"

Data Line 4 - Text Positioning

From the choice list message box select one of the following options:

- "Positioned at Pick"
- "Centered about 2 Points"
- "Centered about a Line"

Data Line 5 - Annotation Offset

Enter in world coordinate units the offset of the text string from the implied baseline or selected feature.

Data Line 6 - Text String

Enter the text string that is to be associated with the annotation feature.

The Annotation Offset parameter is only used when the "Centered about 2 Points" and "Centered about a Line" options are selected. This parameter has no effect when the "Positioned at Pick" option is selected.

Depending upon the Text Positioning parameter setting, the user may need to provide additional information.

If the "Positioned at Pick" option is selected:

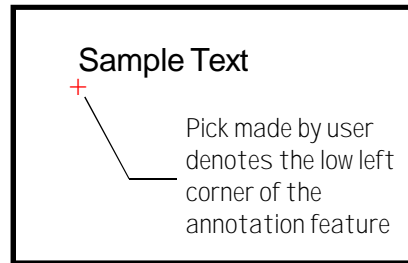


Figure 2(b)
"Positioned at Pick" Option

- 3a. The command will create and display the annotation, placing the new annotation feature in the current active layer as specified with the [Set Active Layer] command.

- 4a. The command remains active, at which point, the user can repeat the process of creating a new annotation feature by executing Step 1 or select another command.

If the "Centered about 2 Points" option is selected, the user will be asked to:

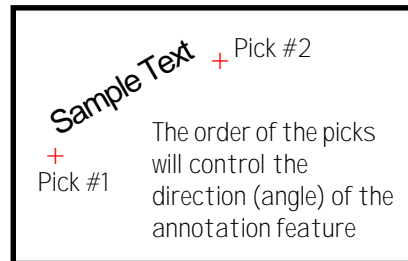


Figure 2(c)
"Centered about 2 Points" Option

- 3b. Pick the endpoint of the implied baseline. Once the pick has been

made, the new annotation feature will be created and displayed, placing the new annotation feature in the current active layer as specified with the [Set Active Layer] command.

- 4b. The command remains active, at which point, the user can repeat the process of creating a new annotation feature by executing Step 1 or select another command.

If the "Centered about a Line" option is selected, the user will be asked to:

- 3c. Confirm the selection of the feature that was found, if any. Based upon the "pick" made in Step 1, if a feature can not be found no annotation will be created and the user will be prompted to make another "pick". If a feature was found, a confirmation message box similar to that of Figure 3(a) will appear.

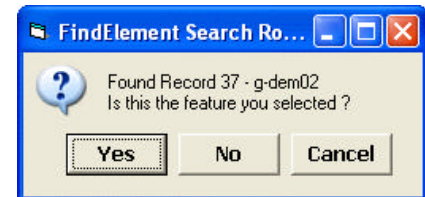


Figure 3(a)
Feature Confirmation Dialog Box

Selecting the *Yes* button results in the annotation being created and displayed, placing the new annotation feature in the current active layer as specified with the [Set Active Layer] command.

Selecting the *No* button causes the command to search for another feature within the proximity of the initial "pick". If a feature can be found, the feature confirmation query box of Figure 3(a) will reappear and the confirmation process repeated. If a feature can not be found, no annotation will be created and the user will be asked to make another "pick".

Selecting the *Cancel* button will abort the command.

- 4c. The command remains active, at which point, the user can repeat the process of creating a new annotation feature by executing Step 1 or select another command.

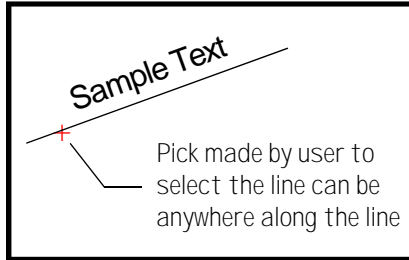



Figure 3(b)
"Centered about a Line" Option

The direction of the selected line feature will control whether the annotation appears on the left side or right side of the line. In Figure 3(b) the line proceeds from left to right in a northeasterly direction. As such, a negative Annotation Offset value places the annotation feature on the left side of the line.

Note that after the first annotation feature is created using this tool, the multi-input dialog box that is presented by this tool will contain the previous session's values as the default values.

Text Tool #2

The Set Text Angle 1 tool, , located in the CEDRA-Text-Tools toolbar enables the user to center and offset an existing annotation feature from an implied baseline. An implied baseline is defined by the user making two picks in the map area. Once the command has been activated, the user should:

1. Make a pick to identify the annotation feature to be processed.



Figure 4
Feature Confirmation Dialog Box

2. Based upon the initial "pick", if a feature can not be found the user is prompted to make another "pick". If a feature was found, a message box similar to that of Figure 4 will appear.

Selecting the *Yes* button results in the command to continue processing.

Selecting the *No* button causes the command to search for another feature within the proximity of the initial "pick". If a feature can be found, the feature confirmation query box of Figure 4 will reappear and the confirmation process repeated. If a feature can not be found, the user will be asked to make another "pick".

Selecting the *Cancel* button will abort the command.

3. Pick the start point of the implied baseline.
4. Pick the endpoint of the implied baseline.


Once the pick has been made, the existing annotation feature will be centered and offset from the implied baseline, see Figure 2(c).

5. The command remains active, at which point, the user can repeat the process of centering an existing annotation feature by executing Step 1 or select another command.

The Annotation Offset parameter within the [Change Text Properties] command can be used to control the offset of the annotation from the implied baseline.

If the user is not pleased with the positioning of the annotation feature, the {Edit} [Undo Transformation] command can be selected to revert the annotation feature to its previous location.

Text Tool #3

The Set Text Angle 2 tool, , located in the CEDRA-Text-Tools toolbar enables the user to center and offset an existing annotation feature about a selected line feature. Once the command has been activated, the user should:

1. Make a pick to identify the annotation feature to be processed.
2. Based upon the initial "pick", if a feature can not be found the user is prompted to make another "pick". If a feature was found, a message box similar to that of Figure 4 will appear.

Selecting the *Yes* button results in the command to continue processing.

Selecting the *No* button causes the command to search for another feature within the proximity of the initial "pick". If a feature can be found, the feature confirmation query box of Figure 4 will reappear and the confirmation process repeated. If a feature can not be found, the user will be asked to make another "pick".

Selecting the *Cancel* button will abort the command.

3. Make a pick to identify the line feature that the annotation feature is to be centered and offset about.
4. Based upon the "pick", if a feature can not be found the user is prompted to make another "pick". If a feature was found, a message box similar to that of Figure 4 will appear.

Selecting the *Yes* button results in the command centering and offsetting the existing annotation feature about the selected line feature, see Figure 3(b).

Selecting the *No* button causes the command to search for another fea-

ture within the proximity of the initial “pick”. If a feature can be found, the feature confirmation query box of Figure 4 will reappear and the confirmation process repeated. If a feature can not be found, the user will be asked to select another annotation feature for processing.

Selecting the *Cancel* button will abort the command.


5. The command remains active, at which point, the user can repeat the process of centering an existing annotation feature by executing Step 1 or select another command.

The direction of the selected line feature will control whether the annotation appears on the left side or right side of the line. In Figure 3(b) the line proceeds from left to right in a northeasterly direction. As such, a negative Annotation Offset value places the annotation feature on the left side of the line.

The Annotation Offset parameter within the [Change Text Properties] command can be used to control the offset of the annotation from the selected line feature.

If the user is not pleased with the positioning of the annotation feature, the {Edit} [Undo Transformation] command can be selected to revert the annotation feature to its previous location.

Text Tool #4

The Set Text Angle 3 tool, , located in the CEDRA-Text-Tools toolbar enables the user to explicitly set the text angle for an existing annotation feature. Once the command has been activated, the user should:

1. Make a pick to identify the annotation feature to be processed.
2. Based upon the initial “pick”, if a feature can not be found the user

is prompted to make another “pick”. If a feature was found, a message box similar to that of Figure 4 will appear.

Selecting the *Yes* button results in the command to continue processing.

Selecting the *No* button causes the command to search for another feature within the proximity of the initial “pick”. If a feature can be found, the feature confirmation query box of Figure 4 will reappear and the confirmation process repeated. If a feature can not be found, the user will be asked to make another “pick”.

Selecting the *Cancel* button will abort the command.

3. Once the pick has been made, the command will prompt the user to fill-in a dialog box, similar to the one shown in Figure 5, after which, the user can click the *OK* button to apply the user-specified text angle, or the *Cancel* button to abort the command.

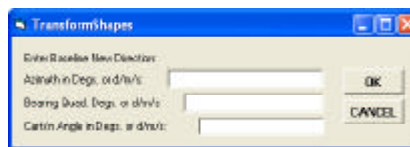


Figure 5
Feature Confirmation Dialog Box

Note that there are three data fields presented in Figure 5, the user has the ability to specify the text angle in one of three forms:

- (a) as an azimuth (225 43 21.2),
- (b) bearing (NE 14 39 12.1), or
- (c) a Cartesian angle in degrees, minutes and seconds or decimal degrees.


As such, the user should enter only one value (in the desired format) in the appropriate data field.

4. The command remains active, at which point, the user can repeat the process of setting the text angle for

an existing annotation feature by executing Step 1 or select another command.

If the user is not pleased with the positioning of the annotation feature, the {Edit} [Undo Transformation] command can be selected to revert the annotation feature to its previous location.

Text Tool #5

The Edit Text String tool, , located in the CEDRA-Text-Tools toolbar enables the user to modify the text that is associated with an existing annotation feature. Once the command has been activated, the user should:

1. Make a pick to identify the annotation feature to be processed.
2. Based upon the initial “pick”, if a feature can not be found the user is prompted to make another “pick”. If a feature was found, a message box similar to that of Figure 4 will appear.

Selecting the *Yes* button results in the command to continue processing.

Selecting the *No* button causes the command to search for another feature within the proximity of the initial “pick”. If a feature can be found, the feature confirmation query box of Figure 4 will reappear and the confirmation process repeated. If a feature can not be found, the user will be asked to make another “pick”.

Selecting the *Cancel* button will abort the command.

3. Once the desired annotation feature has been confirmed for processing, the command will prompt the user to fill-in a dialog box, similar to the one shown in Figure 6(a), after which, the user can click the *OK* button to apply the modification, or the *Cancel* button to abort the command.

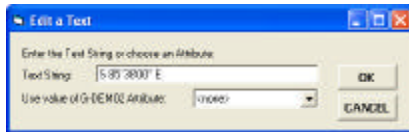


Figure 6(a)
Feature Confirmation Dialog Box

In reviewing Figure 6(a), the user has the option of:

- a. explicitly entering the revised text string by entering the desired string in the first data field, or
- b. using the value for a specified field to serve as the revised text string. When the user selects the annotation feature to be modified, the command also searches for a line feature that is within proximity of the pick made in Step 1.

If a line feature can be found, the command will display in the second data field a list of the attributes that are associated with the line feature. If no line feature can be found, the command will display a list of the attributes that are associated with the selected annotation feature.

The default option in the second data field will be <none> indicating that no attribute value is to be used, but rather, the value in the first data field contains the revised text string.

Select the *OK* button to apply the revision to the existing annotation feature, or

select the *Cancel* button to abort the command.

Note that the low left corner of the annotation feature is maintained during the editing process. So that, the overall text string width will either increase or decrease depending upon the text revision.

4. The command remains active, at which point, the user can repeat the process of editing the text string

for an existing annotation feature by executing Step 1 or select another command.

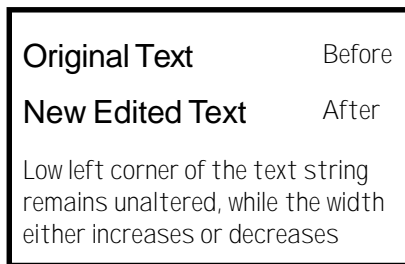



Figure 6(b)
Result of Edit Text String Tool

If the user is not pleased with the editing of the annotation feature, the {Edit} [Undo Edit Text] command can be selected to revert the annotation feature to its previous state.

Text Tool #6

The Curved Text tool, , located in the CEDRA-Text-Tools toolbar enables the user to change the shape of an existing annotation feature such that it follows the shape of an existing polyline feature. In so doing, the user is able to create curved text. Once the command has been activated, the user should:

1. Make a pick to identify the annotation feature to be processed.
2. Based upon the initial “pick”, if a feature can not be found the user is prompted to make another “pick”. If a feature was found, a message box similar to that of Figure 4 will appear.

Selecting the *Yes* button results in the command to continue processing.

Selecting the *No* button causes the command to search for another feature within the proximity of the initial “pick”. If a feature can be found, the feature confirmation query box of Figure 4 will reappear and the confirmation process repeated.

a feature can not be found, the user will be asked to make another “pick”.

Selecting the *Cancel* button will abort the command.

3. Make a pick to identify the line feature that the annotation feature is to be reshaped about.
4. Based upon the “pick”, if a feature can not be found the user is prompted to make another “pick”. If a feature was found, a message box similar to that of Figure 4 will appear.

Selecting the *Yes* button results in the command reshaping the selected annotation feature and displaying the multi-input dialog box of Figure 7(a).



Figure 7(a)
Feature Confirmation Dialog Box

Selecting the *No* button causes the command to search for another feature within the proximity of the initial “pick”. If a feature can be found, the feature confirmation query box of Figure 4 will reappear and the confirmation process repeated. If a feature can not be found, the user will be asked to select another annotation feature for processing.

Selecting the *Cancel* button will abort the command.

5. The user is now able to modify the location of the annotation feature by entering different values for the various parameters listed in Figure 7(a).

If the *OK* button is selected, the command will modify the shape of the annotation feature accordingly.

The multi-input dialog box of Figure 7(a) is re-displayed and the user is able to enter new values, if so desired. This process repeats until the Cancel button is selected.

If the *Cancel* button is selected, the command terminates leaving the annotation feature in the position as it was last displayed.

6. The command remains active, at which point, the user can repeat the process of modifying the shape for an existing annotation feature by executing Step 1 or select another command.

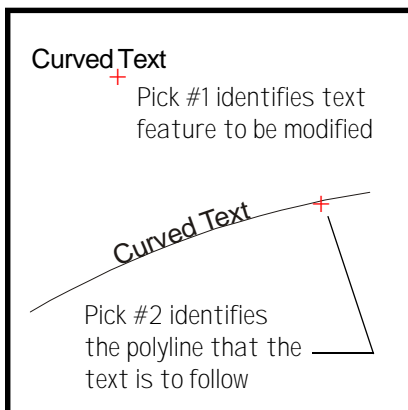


Figure 7(b) - Annotation Feature modified with the Curved Text Tool

If the user is not pleased with the editing of the annotation feature, the {Edit} [Undo Curved Text] command can be selected to revert the annotation feature to its previous state.

Note, if the user wishes to convert an annotation feature which follows a polyline path into a straight-line annotation feature, the Set Text Angle 1, Set Text Angle 2 or Set Text Angle 3 tools can be used. All three of these tools will eliminate the polyline path, if any is detected, from the annotation feature being processed.

Text Tool #7

The Center Text String tool, "T", located in the CEDRA-Text-Tools toolbar enables the user to center and offset one or more existing annotation features about two picked points. These picked points represent a:

- a. horizontal rectangle,
- b. vertical rectangle,
- c. horizontal line,
- d. vertical line, or an
- e. inclined line.

Prior to selecting this command, the user should select the annotation feature(s) to be processed. If there are no selected annotation features, when the user makes the first pick, the error message of Figure 8 will be displayed, at which point, the user should select the OK button and then select the appropriate annotation feature(s).

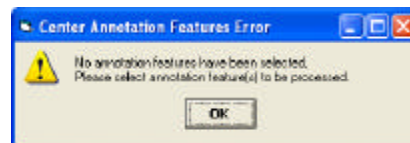


Figure 8
Feature Confirmation Dialog Box

Once the command has been activated and the annotation feature(s) identified for processing, the user should:

1. Pick the start point of the implied baseline.
2. Pick the endpoint of the implied baseline.
3. Once the second pick has been made, the command will display the multi-input dialog box shown in Figure 9. The user should enter the appropriate information and then,

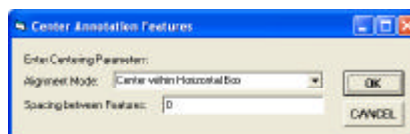


Figure 9
Feature Confirmation Dialog Box

click the *OK* button to apply the centering, or the *Cancel* button to abort the command.

In reviewing the parameters listed in Figure 9, the first data field contains a choice list enabling the user to specify the orientation of the picked points. Figure 10 contains a list of the available options.

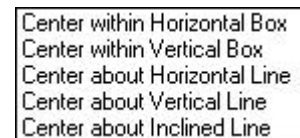


Figure 10
Feature Confirmation Dialog Box

The second data field enables the user to explicitly define the spacing between the annotation features. The value specified in this data field is used only when the following options are employed:

- "Center about Horizontal Line"
- "Center about Vertical Line"
- "Center about Inclined Line"

For these options, if a value of zero is specified, the tool will maintain the position of the annotation feature(s) and simply center the annotation feature(s) with respect to the implied baseline.

If a nonzero value is specified in the second data field, the tool will evenly space the annotation features beginning at the implied baseline and proceeding to the left, if a positive value is specified, or to the right of the implied baseline if a negative value is specified.

The value that is entered in the second data field should be in world coordinate units.

For the first two options shown in Figure 10:

- "Center within Horizontal Box"
- "Center within Vertical Box"

the tool computes the appropriate spacing value to properly center and space the annotation feature(s) within the given picks.

- The selected annotation features remain selected and the command remains active, at which point, the user can select two new points to center the selected annotation features by executing Step 1 or select another command.

If the user is not pleased with the repositioning of the annotation feature(s), the {Edit} [Undo Center Text] command can be selected to revert the annotation feature(s) to the previous state.

Note that after the first group of annotation features are processed using this tool, the multi-input dialog box that is presented will contain the previous session's values as the default values.

Figures 11 through 15 contain samples illustrating "before" and "after" conditions for the various centering options shown in Figure 10.

For Figures 11 and 12 the spacing between the selected annotation features is computed by the tool, since the centering within a horizontal and vertical box options have been selected, respectively.

For Figures 13 through 15, the samples shown assume a spacing value of zero for the Spacing between Features parameter. As such, the relative position of the annotation features are maintained and the annotation features are only repositioned to be centered with respect to the two picks. If a nonzero spacing value was specified, the spacing of the annotation features would begin at the implied baseline and proceed either to the left or right of the implied baseline, depending upon the sign of the spacing value.

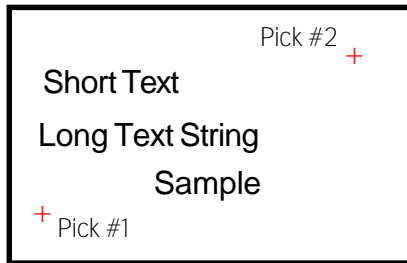


Figure 11(a)
Centering Features using the "Center within Horizontal Box" Option Before Transformation

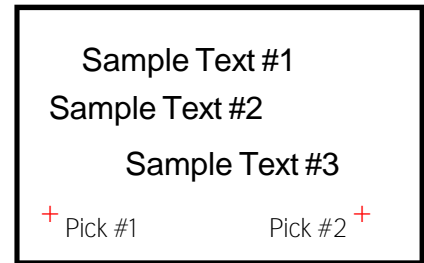


Figure 13(a)
Centering Features using the "Center about Horizontal Line" Option Before Transformation



Figure 11(b)
Centering Features using the "Center within Horizontal Box" Option After Transformation

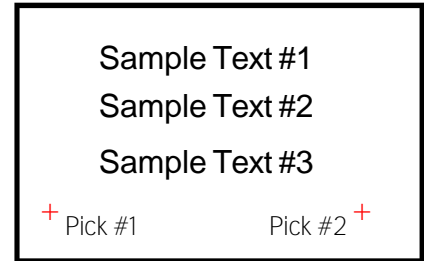


Figure 13(b)
Centering Features using the "Center about Horizontal Line" Option After Transformation

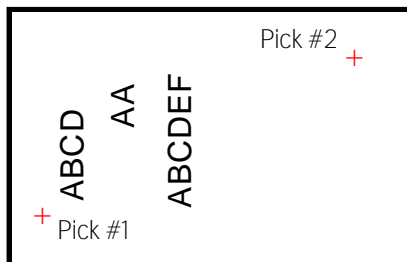


Figure 12(a)
Centering Features using the "Center within Vertical Box" Option Before Transformation

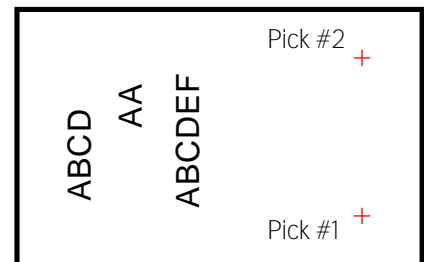


Figure 14(a)
Centering Features using the "Center about Vertical Line" Option Before Transformation

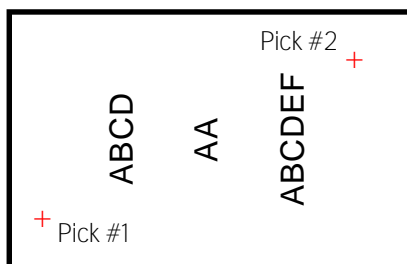


Figure 12(b)
Centering Features using the "Center within Vertical Box" Option After Transformation

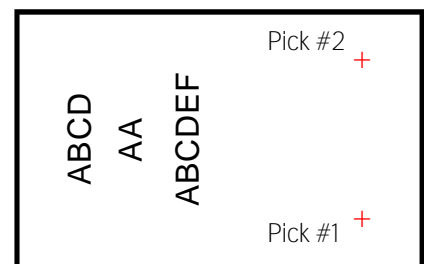


Figure 14(b)
Centering Features using the "Center about Vertical Line" Option After Transformation

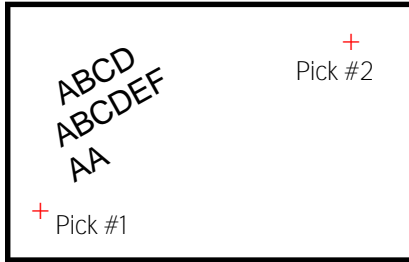


Figure 15(a)
Centering Features using the
"Center about Inclined Line" Option
Before Transformation

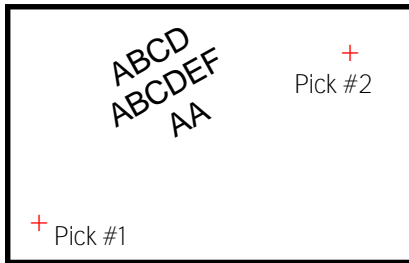


Figure 15(b)
Centering Features using the
"Center about Inclined Line" Option
After Transformation

Summary

User who deal with annotation will find this toolbar extremely helpful. The Center Text String tool in particular is really useful when drafting sheet borders where you have to deal with title blocks and other areas where multiple lines of text need to be centered and aligned.

Note that the Curved Text and Center Text String tools have recently been added to the software. So that, users wishing this new functionality should inquire about getting an upgrade to their existing software.

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