



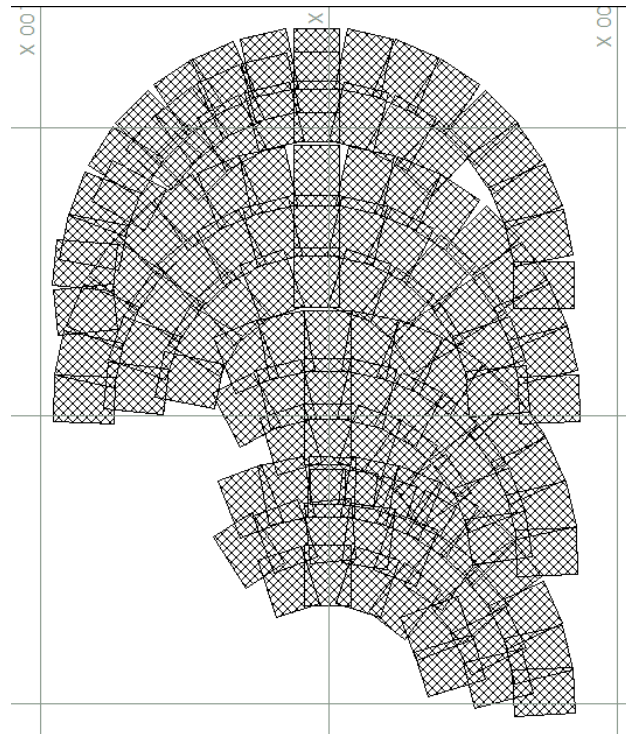
Changes to the CRANE PATTERN Driver

By Bob Glover

Recently, a dredge was converted to DREDGEPACK® from another dredging software. When they converted, one of the tools that they wanted to see was the CRANE PATTERN driver.

In DREDGEPACK® a lot of the features that are built into the other software are available, but they are drivers that must be loaded in HYPACK® HARDWARE. The CRANE PATTERN driver falls into this category.

FIGURE 1. *Sample Crane Pattern*



The idea behind the CRANE PATTERN driver is to provide the operator with a 2D template from which the buckets should be taken. If they follow the pattern, there should be no gaps. When the barge moves, so does the digging pattern. It is a fixture associated with the mobile that is designated in the driver.

Figure 1 shows the bucket prints from a simulation. In this case, there are four different rig moves from the bottom of the image to the top.

The original driver could make changes to radius and cutoff angles, but the pattern always used the reference point on the mobile as its center point. With the new changes implemented, you can nudge the center point around. This is important because the operator can be as good at driving a ship as anyone, but it is damn near impossible to line the barge up perfectly every time.

FIGURE 2. *Nudge Pad.*

To do shift the center point, we have added a NUDGE PAD to the Device window.

The number in the center is the value that is used by the buttons.

- The up, down, right and left buttons will shift the center of the radius that number of survey units.
- The two rotation buttons rotate the radius that number of degrees.

The button at the top right of the NUDGE PAD is the reset button. This button resets the offsets (X, Y, Rotation) to 0.

There are several settings you can configure. If you open the driver page up to see all of the items, the image above was sized to hide them, you will have an opportunity to see everything that can be done to make bucket patterns as you wish.

Figure 3 shows the full driver.

FIGURE 3. *Full Crane Pattern Dialog*

Crane Pattern Display

NUDGE PAD

Center Easting: 0
Center Northing: 185

RADIUS

Radius #1: 0
Radius #2: 60
Radius #3: 80
Radius #4: 100
Radius #5: 0
Enter 0 to disable a radius.

Display Options

☒ Center Point
☒ Bucket Square
☒ Transparent Fill

Bucket Mobile

Mobile 2

Bucket Pattern Direction

☒ Barge Heading
☐ Fixed Azimuth

Bucket Size

Length: 21
Width: 16

Transparency

Less: [Slider] More

Bucket Overlap

☒ Percentage: 3
☐ Distance

Target Distance

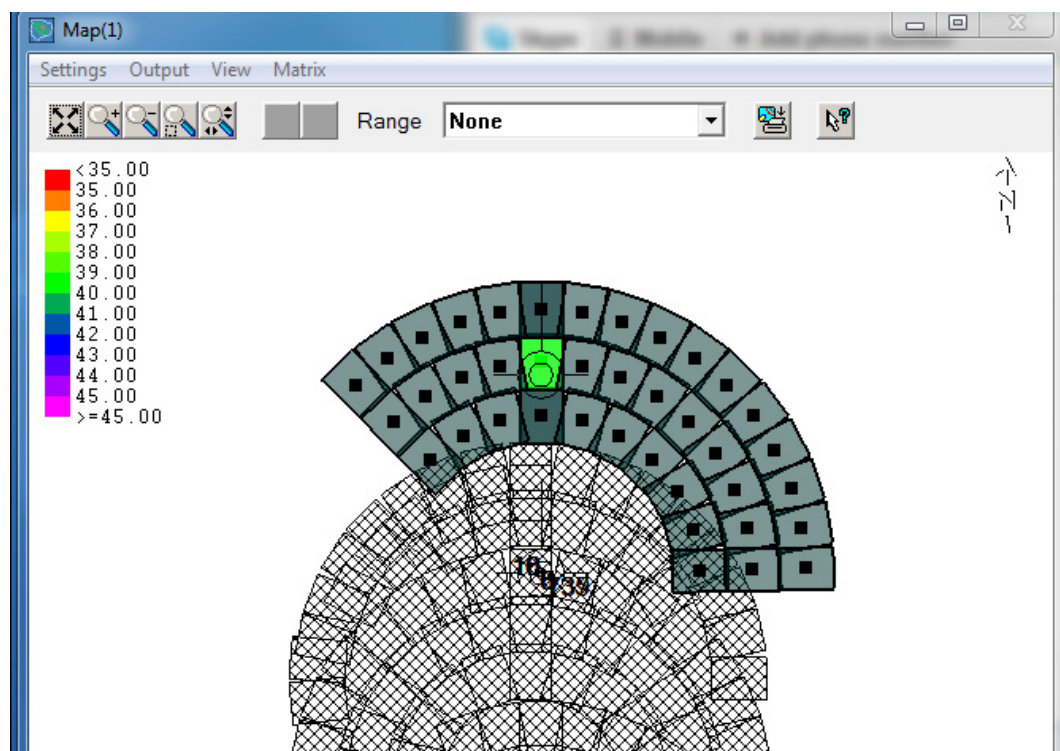
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Apply

- **Radius:** You can display up to five rows. By entering a zero in any of the radius values, that radius is disabled.
- **Angular limits** control the cutoff angle. It is most useful when a barge is pulled up alongside and you cannot dig that side of the barge.
- **Transparency** is quite simply how much you want to see through the pattern.
- **Bucket Overlap:** The number of units along the arc or the percent of the bucket width.
- **Display options** enable different drawing objects to the map.
- **Bucket Mobile and Target Distance:** The Bucket Mobile is the mobile that will be placing the bucket marks on the screen. It is used in conjunction with the Target Distance to determine when the bucket is close enough to the cell center to be considered in the correct location. When the distance between the bucket and the cell center is less than the Target Distance the cell will change to the color green as in Figure 4.
- **Bucket Pattern Direction** is used when the barge heading is unavailable.
- **Bucket Size** is used to make the pattern match the size of the bucket in use.

In Figure 4, the bucket is directly out in front of the crane within the specified target distance so there is a cell that is green.

FIGURE 4. DREDGEPACK® Map Display



The driver is relatively new so if anyone has a suggestion to make it better, please email me at Help@HYPACK.Com.