

Bucket Driver Additions

By Jerry Knisley

The Bucket driver has been modified to allow you to lay down a cap which will decrease the depth of the water within the bucket area by the user-specified amount.

This explanation assumes that the user's GEODESY is in DEPTH MODE and not ELEVATION.

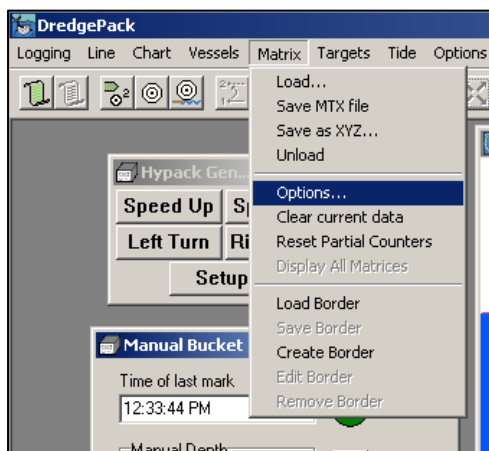
HARDWARE Settings

In the HARDWARE program:

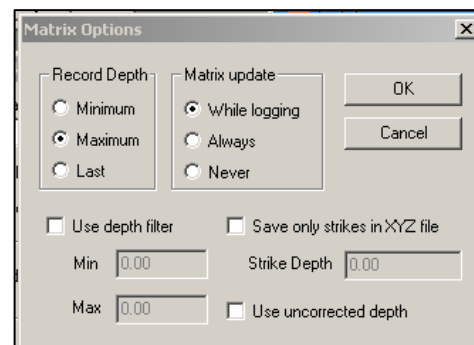
- Remove the VULCAN.DLL if it is present. This installation uses the EXCAVATOR drivers to provide the depth of the bucket.
- In the EXCAVPARSER and EXCAVSM drivers the Use for Matrix Update check must be removed.
- Add the BUCKET.dll driver to the mobile to which the excavator drivers have been assigned.

Matrix Options

DREDGEPACK® always starts off in DREDGING mode. This means that the DREDGEPACK® program is set to record *maximum* depths. For Capping the Record Depth option must be changed to *minimum*. It is rather confusing but that is because we are mixing modes.



Select MATRIX-OPTIONS from the DREDGEPACK® menu and the Matrix Options dialog will appear. This is where the Record Depth option is located.

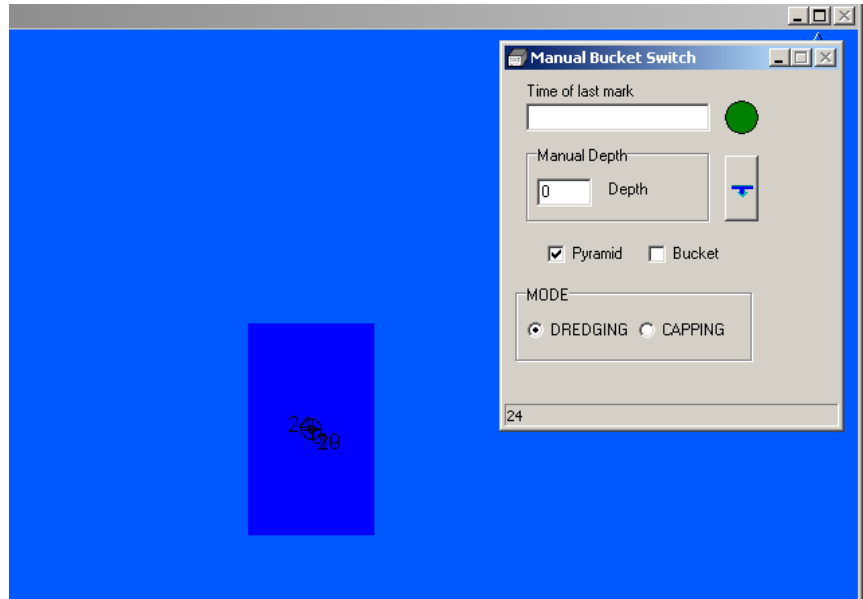


When shifting modes from CAPPING to DREDGING, change the Record Depth option to maximum BEFORE changing modes in the driver to avoid erroneous marks in the matrix. This is not normally a problem when going from DREDGING to CAPPING.

Dredging

When in DREDGING mode, the driver will act as the VULCAN driver does and spread the mobile's main depth out over the footprint of the bucket. This is so that all matrix cells under the bucket can be painted according to the depth of the bucket. The Record Depth option in the the Matrix Options dialog should be set to Maximum. Also, you set the Matrix Update option to 'While Logging', you will have more control; that would allow you to stop logging during the mode change.

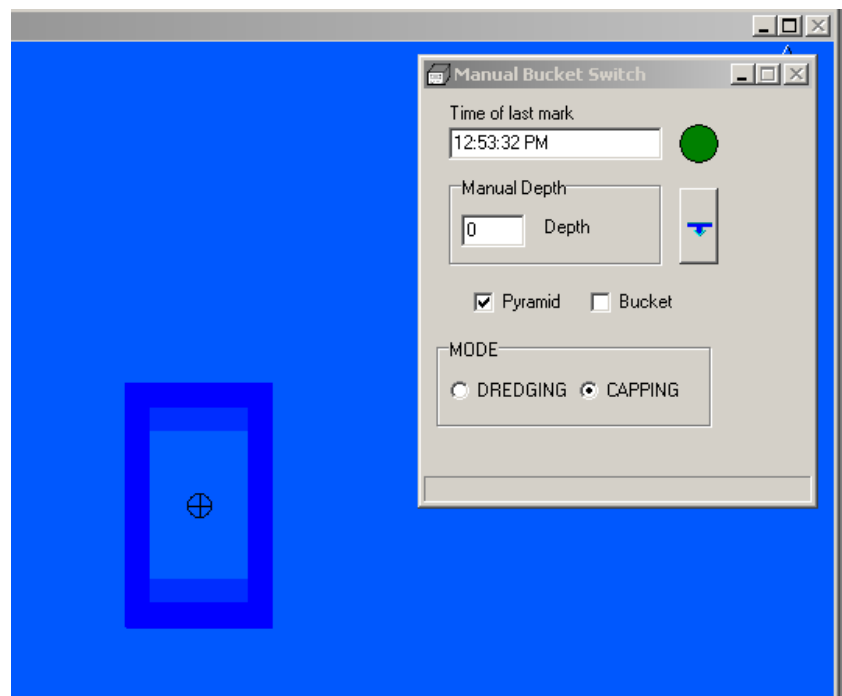
This image shows the driver dialog and a matrix in the DREDGING mode. Notice the number 24 in the bottom left corner of the driver dialog. This is the depth according to the mobile. The dark blue rectangle is the updated matrix with the depth of 24 feet.



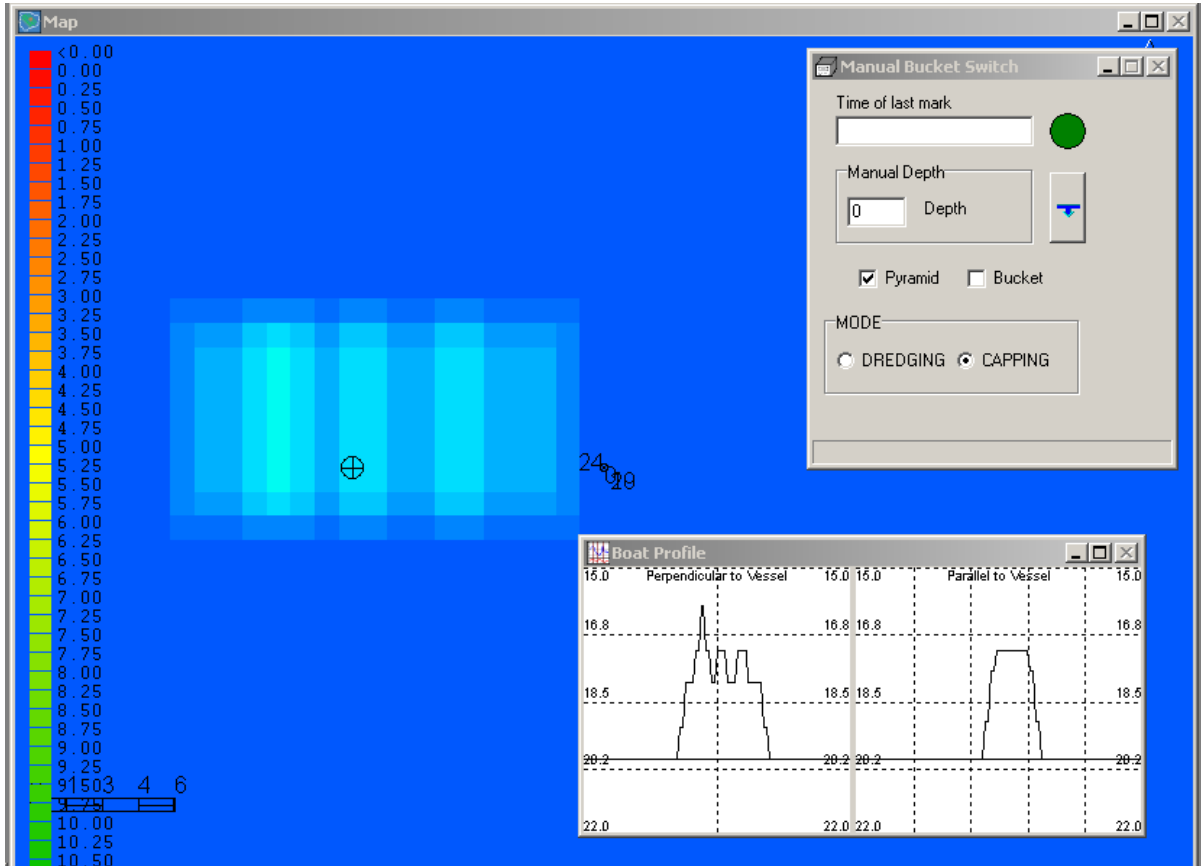
Capping

When in Capping mode, the driver will create a Pyramid above the existing bottom depth based upon the user-defined parameters. As mentioned earlier, you must shift the Record Depth option to 'Minimum' in the Matrix Options.

This screen capture is a single cap placed in the same location as that from which the bucket in



the previous figure was dug. The time of last mark is updated with the placement of the cap to provide a visual reference that the driver received the cap command. A timeout when the bucket is placed prevents the placement of more than one bucket per press of the bucket switch.



Bucket Placements After 3 Bucket Caps have been Placed

In the image above, the capping area in the matrix is clearly visible.

In the Boat Profile on the right, which is looking from stern to bow of the bucket, the pyramid is easily defined. On the left, which is a cross section of the capped material perpendicular to the bucket, the multiple pyramids are clearly visible.

Once the buckets have been placed, you will shift to the DREDGING mode, changing the Record Depth option to 'Maximum', then close the bucket and drag it across the material to even it out.