HYPACK Mechanical Dredge DQM driver

By Christian Shaw

As we move into a new year, we now move into a new driver that is to provide Dredge Quality information to management that monitors bucket dredge activities for dredge contract.

The new DQM driver provides many features to track the dredging operations as per USACE DQM specifications.

DQM SETUP IN HYPACK® HARDWARE

The first part of this driver is the setup in HYPACK® HARDWARE. Here, you set the parameters for your system. We have provisions for Weeks, Manson, User -Defined and a HYPACK Crane system.

FIGURE 1. DQM General Settings

Bucket Marks Switch is used for a momentary switch that the operator presses to make a manual bucket mark. Specify its COM port. When the operator presses the button, pins 4 and 6 on the serial line short, closing the CTS line.
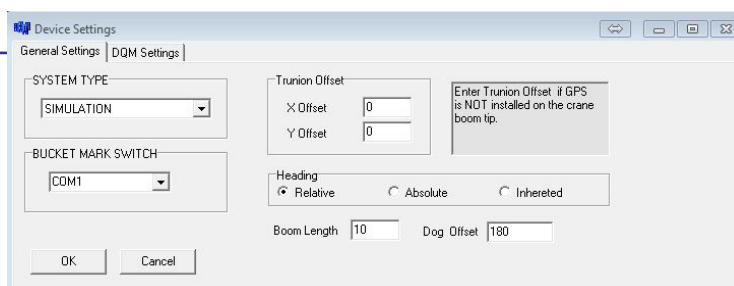
Trunnion Offset: If GPS is *not* installed on the crane Boom tip, enter a Trunnion Offset. Specify the trunnion offset to the location of the GPS.

Heading: Where the bucket receives its heading. Choose relative to another mobile, absolute heading, or inherited from another mobile.

Boom Length: The length of the boom from Trunnion to top sheave.

FIGURE 2. DQM Settings Tab

In the DQM Settings tab, specify the scow offset from the boat shape origin. Specify Starboard and Port offsets relative to the corners of the barge as measured.

DQM IN DREDGEPACK®

The last part of this driver is the DREDGEPACK® interface real time. Upon launching DREDGEPACK®, the DQM Mechanical window will give position, Depth and Heading for the

bucket and its bucket marks relative to the scows position. This is used by the driver to determine if the dredge is in the digging mode or if the bucket is dumping.

The scow shape is in the Map display and is used for calculation of digging and dumping. The bucket position over the scow and its depth is used for this calculation.
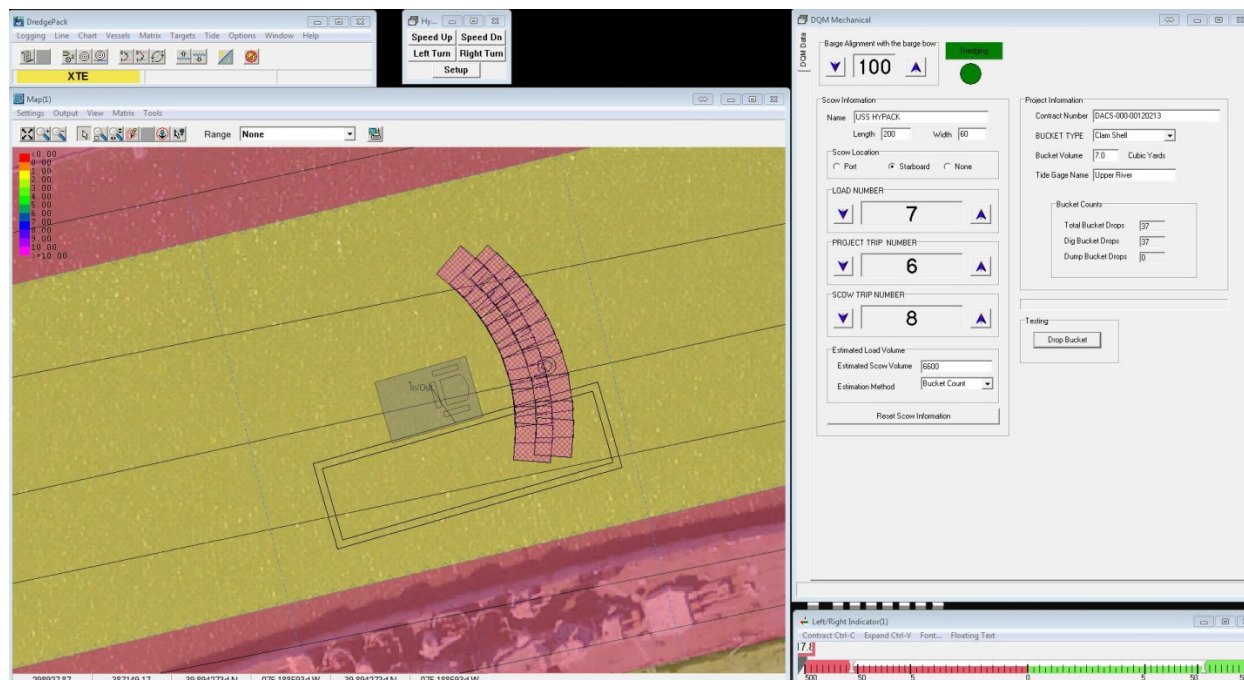
Barge Alignment to the Barge Bow: Most times the scow is pulling along winches on deck fore and aft to place material evenly in the scow. Specify its location relative to the Dredge's Barge

Scow Information: Properties of the scow for length and width and port and starboard location.

Load number, **Trip Number** and **Scow number** is manually changed by the operator.

Estimated Load Volume is still a work in progress. The idea is that, based on the number of dumps in the scow and the dimensions of the bucket we can estimate the amount of material in each scow.

Project Information will go into the Header of each DQM file that is saved for each bucket mark. This is to identify the contract, bucket type and volume. It will also identify the total number of bucket drops, dig drops and dump drops within the file. It will automatically keep track of these buckets in the DREDGEPACK® DQM interface.

Drop Bucket is a test option to test the size and the position of the buckets in the Dig Area and the Dump Area. This will create a BKT file for each press.

If you would like to have this driver for your bucket system you have two options. You can either request this through help@hypack.com or wait for HYPACK® 2013 where this driver will be standard in HYPACK® HARDWARE.