

Expedition Log for IODP Expedition 325

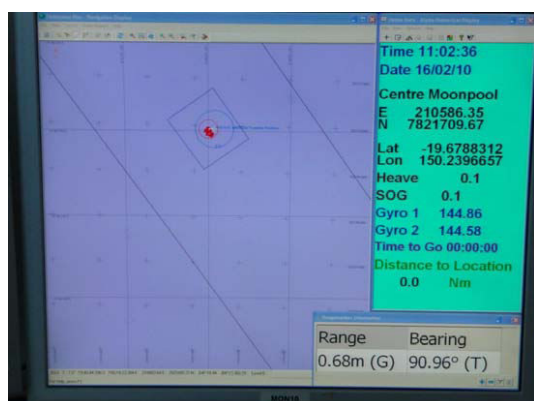
Week 1

Great Barrier Reef Environmental Changes

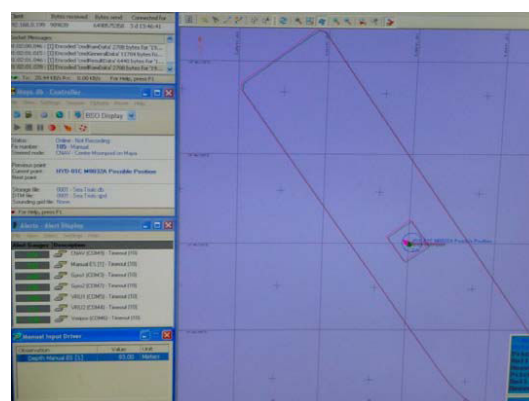
16th February 2010

Carol Cotterill, Staff Scientist tells us the role of the surveyors on board the *Greatship Maya*

In short the role of the surveyors onboard the *Greatship Maya* is to position the vessel so that drilling takes place at the proposed location.



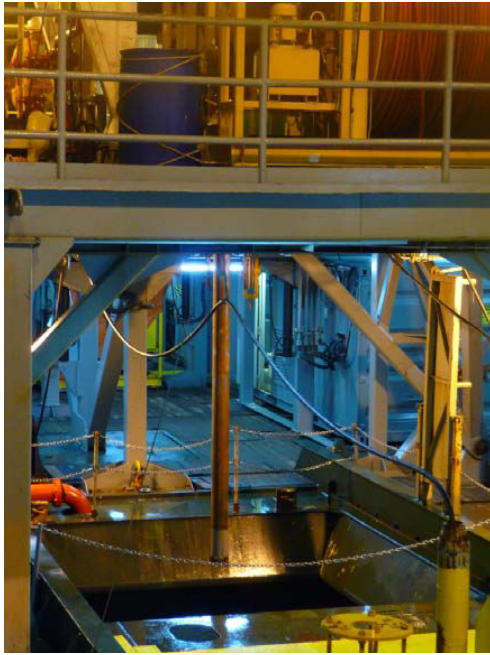
C_Cotterill@ECORD_IODP: Screen tracking vessel position and relative motion whilst we are on station and coring.



C_Cotterill@ECORD_IODP: Screen monitoring roll, pitch and heave of the vessel, and the effect on maintaining station at the core site.

Positioning the vessel is performed with DGPS, Gyro compasses and motion sensors; and there are two independent systems of each on board to provide redundancy. All these instruments are used to accurately calculate the topside drill string position. These instruments are interfaced into the online computer which provides real time position information so that the DP (Dynamic Positioning) operators can manoeuvre the ship onto location then keep it fixed there whilst the drill is in operation. Prior to departing Townsville calibrations were undertaken on gyrocompass and GPS observations to independently verify the accuracy of the instruments.

On a typical drilling job beacons are attached to a subsea frame which when lowered to the seafloor is acoustically positioned by a listening device attached to the hull of the vessel in a method commonly known as USBL (Ultra Short Baseline) positioning. However on this particular job measures are in place to reduce the impact of drilling operations on the environment and so the subsea frame is not being used. Instead the centre of the drill is positioned directly above the proposed location and the only the drill stem itself is lowered to the seafloor.



C_Cotterill@ECORD_IODP: Photo of the drill string going through the moonpool, which is tagged as the vessel's centre of gravity for this project, enabling us to accurately locate and monitor the drill string position.

Upon contact with the seafloor the position of the drill stem is logged for a short period and an 'as-drilled' position is obtained for the drill hole location.

Note from the staff scientist – they are easily startled!



C_Cotterill@ECORD_IODP: Blake, one of the EGS Surveyors, looking slightly startled!