

The move into deeper water has increased the enthusiasm of the oil companies for DP vessels, including drill ships, which under the best circumstances do not need to be supported by any other marine vessels. In addition, the development of satellite navigation systems, especially GPS (the Global Positioning System) has made their operation as DP vessels much more viable. They can move from place to place under their own power, leaving a location and positioning themselves at a new one using GPS, and so require the minimum of outside intervention.

To service this market, a number of very large drill ships have been constructed, and some of them can test the results of their work and store the produced oil in tanks on the ship, then return to port to discharge.

These vessels and other DP units are able to carry the vast quantities of equipment required to carry out the drilling operation. They can drill holes 30,000 feet under the sea and in water depths of 10,000 feet. To do this they will have to carry the 10,000 feet of riser (the tube connecting the vessel to the seabed) as well as the drill pipe and other chemicals and equipment.

Deep Water Semi-submersibles

In addition to the operation of DP vessels in deep water, the industry has developed means of mooring semi-submersibles in depths of up to 10,000 feet. This system uses suction anchors and fibre ropes connecting the ends of the ropes to the mooring systems of the rigs. The particular advantage of using a mooring system is that it ceases to be totally dependent on the rig, and the actual operation of mooring the rig takes no more than 24 hours.

The technique used is to lay a set of moorings, using either a patent form of drag embedment anchor or else suction anchors, and then disconnect the rig from its current set of moorings and move it to the new position and connect it up to the new set of moorings. The ships will then be sent back to the previous set of moorings, now buoyed off, and move them to a new location to await the arrival of the rig. This technique is being used both in the Gulf of Mexico and off the coast of Brazil and is being contemplated in the deep waters off the coast of the UK.

In addition to the use of fibre moorings, there are semi-submersibles being moored using their own mooring systems in water depths of up to 7,000 feet.



Casing being discharged at a jack-up. Over the duration of a drilling programme thousands of feet of tubulars will be discharged to the rig. Picture: David Styles.