Drill Ships

The first offshore drilling was done from ships, and ships still do much of the initial exploration.

They are very much like other ships, although the crews wear hard hats.

They are held in position by a circle of steel cables attached to 30,000-pound anchors, and they bob and roll but usually not enough to interfere with drilling.

A towering derrick rises from the deck and directly below it is a large, square hole cut through the centre and bottom of the ship, called the "moonpool." The drilling "string" is dropped down through it, to the bottom of the sea.

The Rigs

The first offshore rig was built in 1947—a small drilling platform in twenty feet of water in the Gulf of Mexico.

By the early 1960s rigs were drilling in water 1,000 feet deep. Today, there are huge ones that can drill through 6,000 feet of water and 20,000 feet into the bottom of the icy sea.

All ocean drillers use essentially the same approach. A crane lowers a section of steel pipe through a square hole in the bottom of the ship or rig. Other sections are added until the riser, as it is called, reaches the floor. In northern seas a shallow valley, called the glory hole, is dredged in the sand to protect the wellhead equipment from ice keels that might scour the bottom.

Drillers on Sedco 709 in the Hibernia field.

A CANMAR blow-out preventer for use in the Beaufort Sea.

The riser is reinforced with a cement inner wall, and "the drill string," sections of steel pipe attached to a round steel bit, is dropped inside to the wellhead. The string and the bit—fitted with moving steel teeth—are rotated by an engine. Drilling mud, a precise mixture of clay, water and chemicals, is pumped down the drill pipe to keep the bit cool and the string turning freely. It lifts pieces of rock cut by the bit and sends them up to the platform where geologists can analyse them.

The derrick pulls the string up every twenty-four to thirty hours so the bit can be replaced. It may take a full day to complete this operation.

A blow-out preventer, a complex of valves that can be opened and closed hydraulically from the surface, is fixed at the wellhead to prevent sudden powerful surges of oil or gas from rushing up the pipe.

High Life in the Northern Waters

Canada's great oil and gas reserves are in the North Atlantic and the Arctic.

The men who keep these cold water stations eat well and are well paid. They have frequent vacations.

The ones on the huge semi-submersible rigs in the North Atlantic live orderly, twelve-hour, four-meal days. The work is demanding, fall and winter winds fierce, the weather cold. One shift