DEVELOPMENT OF A GREAT RATE OILY WATER SEPARATING SYSTEM

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To treat the oily water mixture below the skimmers that are generally considered not sufficiently selective at sea, IFREMER has developed an oily water separating system with the two French companies Neyrtec and Serep.

Neyrtec has first developed a 200 m^3/h vortex separator and has run tests on a 60 m^3/h prototype.

To get automatic working of this separator with a variable percentage of oil into the mixture inlet and to get a better final separation, SEREP has planned a 4 m^3/h gravity separator to treat the oil outlet of the vortex unit.

The two associated kinds of equipment make up an automatic separting system, the size and weight of which are not prohibitive, which are able to treat a mixture containing between zero and 20 percent oil at a 200 m^3/h maximum flow rate.

A 60 m^3/h prototype of the complete system has been tested by CEDRE and IFREMER. The unit has been fed up with mixtures containing between 1.7 and 21 percent oil in sea water at between 33 and 56.8 m^3/h flow rates.

80 percent of the oil contained in the mixture inlet is effectively separated from water and recovered.

The quantity of oil in the water outlet of the unit is generally less than 2 percent.

LONG-TERM DRIFT IN THE BEAUFORT SEA

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Since 1979, the U.S. Coast Guard Research and Development Center and Canadian Marine Drilling, Ltd. (CANMAR), have been releasing satellite-tracked buoys in the southern Beaufort Sea. The purpose of this study has been to determine the probable direction that spilled oil may travel along the Arctic coast. These buoys were either released to the northwest of the Tuktoyaktuk Peninsula or to the north of Prudhoe Bay. The long-term drift of these buoys exhibited considerable interannual variability. This movement has been compared to calculated geostrophic surface winds to determine if these calculations can be used to predict the general long-term movement of spilled oil.

In general, these drifters responded to the forcing of a geostrophic wind only during significant wind event. When a significant wind event occurred, an average lag of approximately two days in the response of the drifters was observed. This lag appears to occur whether the buoys are in open water or locked into the pack ice. During light or variable geostrophic winds, these buoys did not respond significantly to changes in the winds. This pattern is assumed to be due to a combination of the underlying surface currents in the Beaufort Sea and the forcing from local wind events.
