

OFFSHORE TESTING OF BOOMS AND SKIMMERS

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INTRODUCTION

These offshore trials of oil spill containment and recovery equipment came about in order to meet several needs identified by various agencies. Foremost was the desire to find out whether or not offshore containment and recovery equipment presently stockpiled by the Canadian Coast Guard was suitable for use on spills of oils typical of the waxy crude oils discovered on the Grand Banks. These oils exhibit atypical spill behaviour (S.L. Ross and DMER 1987) and may not be amenable to recovery with conventional oleophilic or weir-type skimmers (S.L. Ross and Hatfield 1986). As well, the operating characteristics of the RO-BOOM and Vikoma Ocean Pack boom were to be compared to determine whether or not one best suited the needs of Coast Guard. In addition there was a desire to field test a novel skimmer developed for the Coast Guard for heavy, viscous oils (Canpolar 1986) on waxy crude oil. Coincidentally, the Oil and Hazardous Materials Environmental Test Tank (OHMSETT) Interagency Technical Committee (OITC) had a need to verify at sea, with oil, a boom testing protocol intended to correlate a boom's ability to contain oil with its seakeeping ability. If successful this protocol would preclude the need for most offshore testing of booms with oil. Trials with a specially instrumented boom had been conducted in the OHMSETT tank with oil and offshore without oil; these trials were to be the final component of the test program: tests offshore with and without oil.

Objectives

The objectives of the offshore trials were to document and quantify:

- * the sea-keeping and waxy oil containment capabilities of the Vikoma Ocean Pack and RO-BOOM in seas representative of Grand Banks conditions;
- * the waxy oil recovery capabilities of the Framo ACW-400 type skimmer and the experimental Heavy Oil Skimmer; and
- * the sea-keeping and oil retention capabilities of a specially instrumented offshore oil boom in seas representative of offshore conditions.

This paper documents the methodology, results, conclusions and recommendations arising from the study pertaining to the first two objectives noted above. A separate paper is being written on the final objective of the study by OHMSETT staff (McKowan and Borst 1987).

Test Site Selection

The proposed test area was selected in consultation with the Regional Ocean Dumping Advisory Committee (RODAC) based on the following criteria:

- * any minor oil losses must drift out to sea (SSW currents and westerly winds)
- * at least 100 m water depth