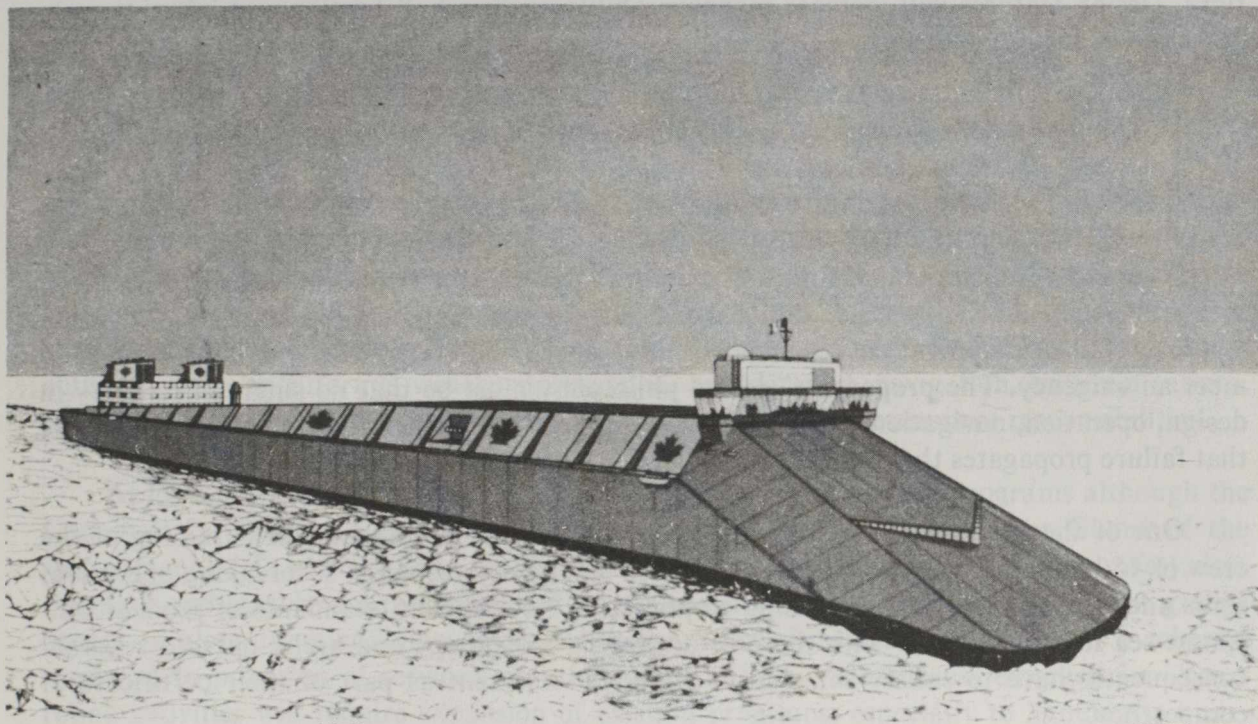


Figure 10: Arctic Tanker



The tankers being proposed to transport oil through the Arctic seas will be ice Class 10, double-hulled vessels with an oil-carrying capacity of 200,000 tonnes (approximately 1.5 million barrels).

Source: *Hydrocarbon Development in the Beaufort Sea-Mackenzie Delta Region, EIS*, Dome Petroleum Limited, Esso Resources Canada Limited and Gulf Canada Resources Inc., Vol. 1, 1982, p. 1.22.

If you look at the progressive technology of icebreaking, there are really only four important factors, namely, the hull form, the friction, the propulsion and the strength . . . in most cases icebreakers have been designed for either temperate waters or arctic summer operation, and very few icebreakers have taken into account multi-year ice. If you want to operate in the Arctic on a year-round basis, you have to take into account the multi-year ice. (Mr. B. Johansson, Dome, Issue 21:62-63, 31-3-1982)

Severe and variable ice and climatic conditions, 24-hour darkness, and a fragile environment set the Arctic apart from conventional tanker operating areas. While there is a huge body of data and expertise available worldwide for conventional open-water tanker operations, there is relatively little for arctic operations. Thus, although the safety record of tankers is quite good worldwide, operating a ship of this size in the severe arctic conditions presents a technological challenge. Operating year-round is an innovation in itself.

Appropriate tanker design, an understanding of environmental conditions and a sophisticated predictive capacity — both of the tanker's performance and of the setting in which it operates — are all prerequisites to operating safely in the Arctic.