

[Texte]

terms of about a ten-month operation. In a ten-month operation one is going to have to contend with 100 per cent ice cover where the new ice is of a thickness of five to six feet and where you encounter heavy ridging, tremendous pressure generation under the influence of winter gales and, of course, the appalling conditions of trying to operate in a ship in an ambient temperature of 40° below, blowing snow, total darkness and this kind of thing.

I think it might be useful here to take the Humble Oil project as an example to show what things might be like and what they envisaged. After they had completed their trials and had done all their calculations, they felt a ship of something like 250,000 tons deadweight, which is the cargo capacity, a total of about 300,000 tons displacement and with about 150,000 to 180,000 horsepower should be able to cope with year-round Arctic conditions on passage from the East Coast of North America around to the north slope of Alaska, 12 months a year.

Again I go back to the philosophy that I mentioned earlier, that this kind of ship must be able to cope with normal ice conditions on its own. It is impossible economically to contemplate an ice-breaker-escorted operation for every ship. To move the amount of oil that they wanted to move, which was one million rising to two million barrels a day they were going to need something in the order of twenty-six ships on the route. On any one day there would be something like eight ships in the Canadian section of the Northwest Passage.

Obviously, under those circumstances, it was impossible to contemplate an ice-breaker-escorted operation. These enormous ships would be over 1,000 feet long, 120-odd feet beam, massive things of tremendous power; the combination of that kind of displacement and that power, of course, generates a tremendous energy and creates tremendous momentum which is very hard to stop. But once stopped they are very hard to get moving again.

This kind of ship, in order to cope with these conditions, is of such strength that I think the risk of ice damage can be ignored. The experience of the Manhattan was that on the strengthened parts of the ship there was no sign of ice damage of any kind whatsoever in any of her trials. The damage she did receive was in those parts of the ship where they had not thought there was going to be ice impact and where they had just left the old mild steel hull.

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However, there is a danger of these gigantic ships being stopped and then because the whole body of the ice is frequently under movement, a ship can be carried bodily for miles and miles and miles in a different direction. It could be carried out of the safe passage. These are very deep ships; and 80-foot draft ship could be carried out of the safe passage into shallow water or even onto rock where it then could go aground and could be damaged, with resulting oil spills.

The Humble Oil philosophy of this whole movement envisaged the presence of icebreakers on the route to act as rescue vessels in the event that one of these things got stuck and was in danger of being pushed aground. In spite of the fact that these ships would be able to cope

[Interprétation]

tonnes à vide, de 300,000 tonnes de déplacement d'eau d'une force de 150,000 à 180,000 chevaux-valeur devrait pouvoir passer toute l'année de la côte-est nord-américaine jusqu'en l'Alaska.

Et encore une fois, j'en reviens au principe que j'ai invoqué tout à l'heure pour ce genre de bateau. Il doit être en mesure de faire face aux conditions de l'Arctique seul. On ne peut pas, économiquement, envisager qu'un brise-glace escorte chaque navire. D'après le projet il faudra environ 26 pétroliers pour transporter les presque 2 millions de barils de pétrole produits quotidiennement. Chaque jour, il y aurait 8 bateaux naviguant dans la section canadienne du passage nord-ouest, et dans ces circonstances, il est bien évident qu'il est absolument impossible d'envisager une opération d'escorte de la part d'un brise-glace. Ces bateaux auront 1,000 pieds de longueur, 120 pieds de largeur et ces masses auront une puissance considérable et la combinaison de ce déplacement et de cette puissance engendre une énergie considérable et il est difficile de les arrêter, mais lorsqu'ils s'arrêtent, il est difficile de les remettre en marche. Et ce type de navire, est d'une telle résistance que je pense qu'on peut ignorer le risque de bris causé par la glace. L'expérience du *Manhattan* nous montre que les parties renforcées du bateau n'ont pas subi de dégâts causés par la glace et les dégâts sont survenus sur les parties les plus faibles du navire où on ne croyait pas qu'il y aurait impact.

Il est vraiment un danger que ces navires s'arrêtent car les champs de glace se déplacent pendant des milles et des milles et le bateau pourrait être entraîné hors de sa direction première. Les bateaux d'un tirant d'eau de 80 pieds pourraient être entraînés vers des eaux peu profondes et pourraient alors s'abîmer sur des fonds rocheux, perdre du pétrole et polluer la région.

Selon la *Humble Oil*, on avait envisagé de se servir de brise-glace comme bateaux-secours. Malgré tout, il arrivera qu'un de ces bateaux s'enlise un jour ou l'autre. Il est impossible de construire un bateau qui puisse répondre à toutes les exigences et si c'était le cas, le coût de construction ne permettrait plus aucun profit.

Je ne saurais dire quel est le pourcentage des condi-