

## International team builds paper mill in Malaysia

The government of Sabah, Malaysia has given the final guarantees for a \$420-million contract with Klockner Stadler Hurter Ltd. of Montreal to build a pulp and paper mill in that country.

Otmar Franz, chairman of the Canadian branch of the multinational engineering company, made the announcement recently while giving further details of the contract announced in January by International Trade Minister Gerald

Regan during his trip to Asia.

Klockner's Canadian branch, formerly Stadler Hurter Ltd., is heading the consortium. It is a small operation with only 85 employees but has 50 years of experience in pulp and paper companies. The other partners are Klockner Industrie Anlagen GMBH of West Germany and Voest-Alpine AG of Austria.

The federal government is supplying \$143.7 million in the project, through

the Canadian Export Development Corp. and the rest is coming from Austria and Germany in similar state-guaranteed investment.

Otmar Franz, a member of the board of the parent company, which employs some 70 000 people in 40 countries, said the contract is "a splendid example of the advantages of an international consortium". He said that the consortium could pick the best equipment from each participating country, and the investment capital was less affected by currency fluctuations because it comes from three different sources.

The Montreal firm is doing the total engineering services for the plant, to be located on the northern part of the island of Kalimantan, formerly Borneo.

The mill, expected to be in operation in early 1987, will produce 125 000 tonnes a year of writing and printing paper, using mixed tropical hardwood and softwood pulp.

## Company makes waves to help stabilize ships

Making waves is helping an Ottawa engineering firm cruise to world prominence in high-technology research and development.

W.R. Davis Engineering Ltd. has just signed an \$800 000 contract with MTS Systems Corp. of Minneapolis, Minnesota, US to design and install a wavemaker, also known as a wave generator, for studying the effects of various ocean conditions on Arctic ships.

MTS is the prime contractor for the National Research Council's (NRC) new Arctic Vessel and Marine Research Institute being built in St. John's, Newfoundland, where the wave generator will be used.

Wave tanks, like the NRC's new one, help engineers design safer and more efficient ocean vessels and semi-submersible structures, such as offshore drilling rigs. In the same way a wind tunnel is used to see how buildings will react to wind of varying speeds and intensities, a wave tank tests the strength and movement of vessels in different "sea states".

The wave tank at the NRC laboratory

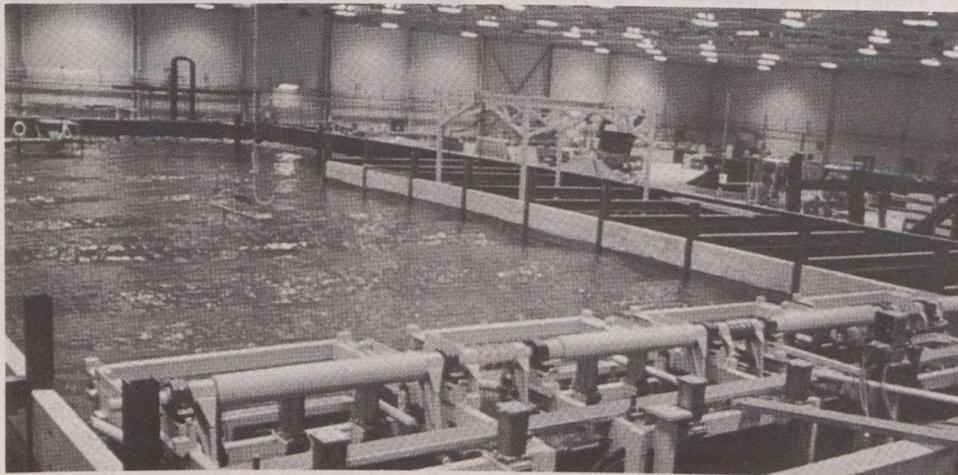
in St. John's is about 12 metres wide, 200 metres long and five metres deep. Scale models of different types of vessels are towed through the tank and subjected to waves of different heights, angles and intensity.

Engineers then measure how much stress is put on the model under different wave conditions, as well as how much the model vibrates or changes course because of the waves. They use these results to design safer, more stable vessels.

The Davis wavemaker is a steel plate, 12 metres wide and five metres high, hinged horizontally so it can make a flapping motion.

It is placed at one end of the tank, and generates waves of different types and heights according to a computer-generated schedule.

Davis Engineering has already designed and built a wavemaker for Ontario Hydro and several for the NRC, including one used to figure out what went wrong with the *Ocean Ranger*, which sank in the North Atlantic off Newfoundland two years ago, killing 84 crew members.



Wave tanks help engineers design safer and more efficient ocean vessels.

## Safety on the job

Labour Minister André Ouellet has announced an additional \$8.2-million grant over three years for the expanded operation of the Canadian centre for Occupational Health and Safety in Hamilton, Ontario.

The institution, which was created in 1978, promotes the right of all Canadians to a healthy and safe working environment by providing free information on health and safety issues related to the work place and job hazards.

In announcing the funding, Mr. Ouellet referred to his recent presentation to the Macdonald Royal Commission in which he described the impact that health and safety issues have on Canada's productivity: "Safety and health in the work place will be one of the vital social and economic concerns of the decade. It is also a key element in the search for productivity improvement. Apart from the obvious human consequences of industrial accidents, the record of working days lost due to such occurrences remains a national disgrace. Even though the economic impact differs greatly, the records of days not worked due to industrial disputes pales by comparison."

Mr. Ouellet added that since 1978 the Hamilton centre has been instrumental in ensuring that Canadian workers have access to the most complete and up-to-date information related to job hazards and safety at the work place.