



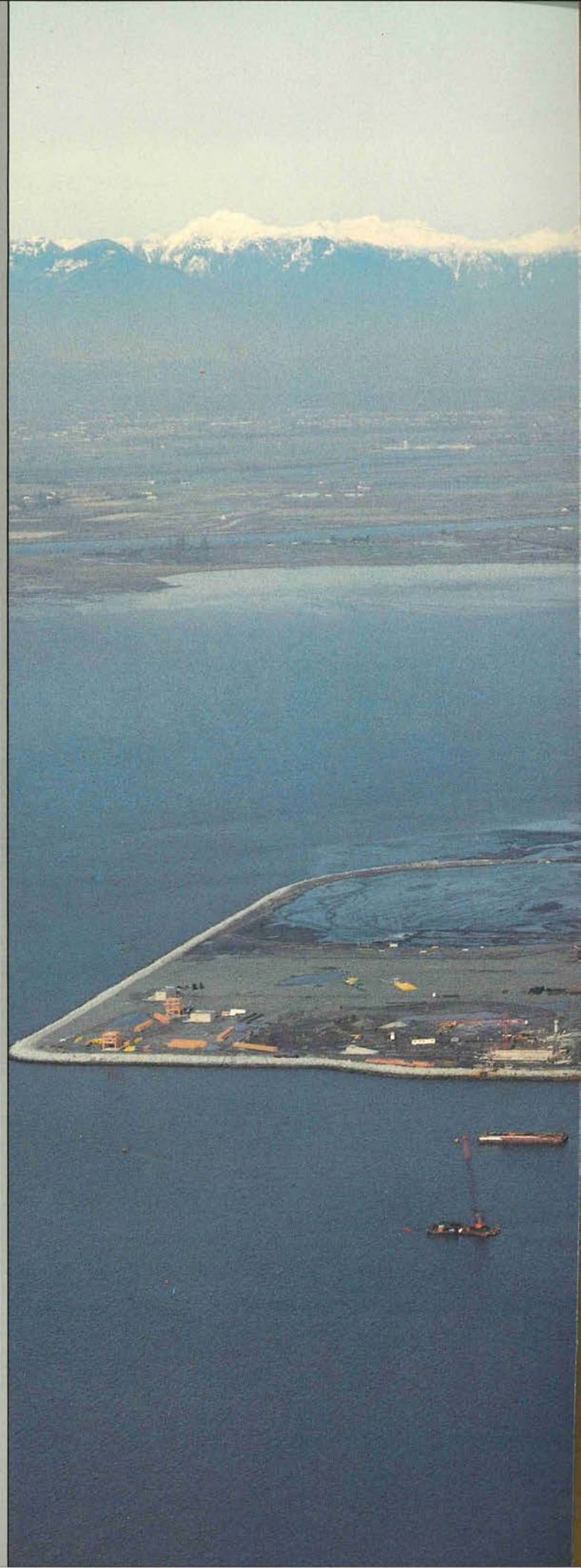
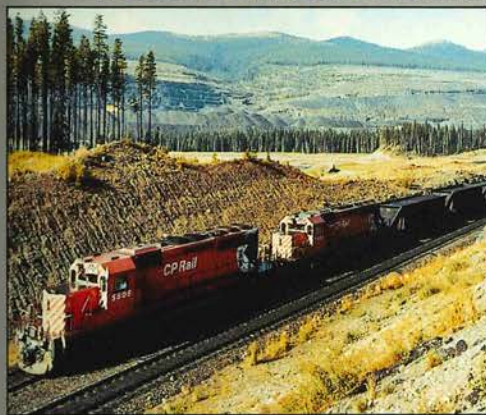
## Unit Train System

is a major world supplier of metallurgical and thermal coal. Westar Mining Ltd. (formerly Westar Coal Ltd.) has systematically developed new methods of processing, processing and transporting its coal to customers throughout the world.

A key element in Westar Mining's continued growth is the sophisticated transportation system which carries the coal from the mine site to the west coast shipping terminal.

A network of unit trains, each made up of 106 cars with a capacity of 12,000 tonnes of coal, travel in a continuous loop between the company's mines in southeastern B.C. and its port facilities, where loading and unloading operations are performed automatically.

This unit train system was developed by CP Rail in 1969 to transport bulk commodities like coal, using the most efficient and cost-effective method possible. As a result, coal from the company's mining operations in the interior of B.C. can be sold at a price that is competitive with other mines located much closer to saltwater ports. Unit trains leaving the company's mine take approximately 90 hours to complete the 2,250-kilometre round trip.



**T**he western terminus of Westar Mining's integrated transportation network is its deep-sea port at Roberts Bank, approximately 30 kilometres south of Vancouver.

The port is operated by *Westshore Terminals Ltd.*, a wholly-owned subsidiary, and is located on a 20-hectare man-made island or pad in the Gulf of Georgia. Permanent access to the island is provided by a five-kilometre rail and road causeway.

The port is the largest terminal of its kind in Canada, and currently has facilities to stockpile one million tonnes of coal and handle ships of up to 168,000 DWT in a zero-tide draft of 18 metres.

Operating 24 hours a day, seven days a week, Westshore Terminals has an annual shiploading capacity of 12.5 million tonnes. Since it began operations in May 1970, it has handled more than 100 million tonnes of coal and related products,

unloaded  
nearly 13,000  
unit trains and loaded  
close to 1,700 ships.

During the port's 13-year history, work stoppages from labour disputes have totalled only 52 hours — and that due to third party activity.

Bulk handling facilities at Roberts Bank provide an efficient and low-cost system of moving coal from unit trains onto ships. With all operations directed from a single control tower, coal can be unloaded from trains directly onto the shiploading system or routed to different stockpiling areas.

An average of 15 coal trains per week arrive at Roberts Bank. The specially-built gondola cars, equipped with swivel couplings, allow rotary dumping without uncoupling. As the train moves through the dumping station, a mechanical indexing arm positions each coal car. The operator then tips the car, along with a moveable section of the roadbed. The rotary couplings permit the car to roll over until the load is dumped into a large underground hopper. The car then returns to its original position and the next coal car is moved into the dumping station. The entire unit train is normally unloaded in five hours and returns immediately to the mine for reloading.

To keep pace with the expected increase in coal shipments during the 1980s, the Roberts Bank port is undergoing a major expansion program. The existing pad has been doubled in size, two additional pads created and the causeway widened.

In early 1982, the dumper facilities were upgraded and a second stacker reclaimer added, increasing the port's annual loading capacity to 12.5 million tonnes.

Work on stage two of the port expansion is nearing completion. This second stage expansion includes the construction of a new dock to accommodate vessels of up to 250,000 DWT, a tandem dumper — capable of unloading two rail cars simultaneously, a third

stacker reclaimer and a new ship-loader. These additions, valued at \$127 million, will increase the port's annual handling capacity to 22 million tonnes and permit the simultaneous loading of two ships.

Westshore Terminals is also considering plans for a final expansion phase, which would further upgrade equipment and raise annual coal handling capacity to between 27 and 30 million tonnes.

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