While it is difficult to place emphasis on a particular development, one innovation—a versatile plastic temperature-controlled container—has been received with such enthusiasm both in Canada and abroad that its distinctive Canadian character is noteworthy. The idea for such a container arose out of the need for a method of shipping perishable commodities at temperatures adhering to quality control codes both in Canada and abroad, expediting movement of such commodities in transit and, ultimately, reducing handling procedures and costs.

Railway researchers assessed and decided to use a design of the English firm, Mickleover Transport Ltd.—a frameless all-plastic insulated container, the largest one-piece reinforced plastic moulding ever produced, made of a rigid foam core (Polyurethane) sandwiched between an inner and outer skin of polyester resin-bounded fibreglass laminate, in which a series of stiffening webs bonded to the core blocks and the inner and outer skin are incorporated. Production techniques and structural properties of the container provide great rigidity and high impact resistance. It is immune to corrosion and its plastic panelling is contamination-proof. This container, therefore, was considered to be the most suitable replacement for traditional materials (such as steel) for equipment in intermodal transportation subject to stress, vibration and rust.

The refrigeration power pack includes evaporator, condenser, compressor, air-cooled diesel-electric generator, sea water heat exchanger, fuel tank and all automatic controls. It uses the air-cooled diesel-electric generator when operating over the highway, on piggyback, or on the deck of a ship. It is also capable of running off a ship's electric power and when below deck the condenser can be cooled by means of the sea water heat exchanger. These arrangements permit perishable traffic to be handled from origin to destination by highway, rail or ship, at evenly maintained specified temperatures.

Exterior hardware adds flexibility to the container: a highway bogie may be attached to the bottom of a container for road or piggyback movement; a fifth wheel assembly permits hook-up and movement of container by road tractor; the coupling feature permits two similar containers to form a 40-foot trailer; lifting lugs permit the wheel assembly to be removed at the wharf and the container to be loaded into a ship's hold; and securing and stacking arrangements permit the container to be locked to a ship's deck and to containers loaded on top of each other.

The system of reverse airflow envelope cooling installed in the container was perfected at the request of the Department of Fisheries by the Division of Applied Biology of the National Research Council for use in highway transport refrigerated trailers. It is considered to be the only sure method of maintaining proper temperatures for frozen foods as prescribed by the Canadian Food Processors' Association voluntary code for handling frozen foods as well as the ARDOFS code of the United States which is now mandatory in certain States.

The highway transport refrigerated trailers were introduced by Canadian Pacific in 1963. Initially, 25 were placed in service, carrying fresh meat and meat products by highway or rail piggyback between the meat processing centres of Alberta and Winnipeg, Toronto and Montreal. These trailers proved so efficient that Canadian Pacific ordered an additional 28 and extended the service to Vancouver. Each trailer is capable of handling between 30,000 and 40,000 lb. of meat. They are operated by a relatively new traffic department of the Canadian Pacific called Merchandise Services (CPMS). This department has taken over and consolidated the functions in Western Canada of less-than-carload (l.c.l.) freight, express and Canadian Pacific Transport. It serves from Victoria to Port Arthur, linking with piggyback throughout the system and with Canadian Pacific Express, l.c.l. freight and Smith Transport in Eastern Canada.

CPMS operates several large terminals, the largest of which was completed late in 1963 at Winnipeg at a cost in excess of $1,000,000. It is possibly the most modern package freight terminal in the world. Operating methods in these terminals are fascinating as well as functional. So efficiently have they been designed that a package can be unloaded from