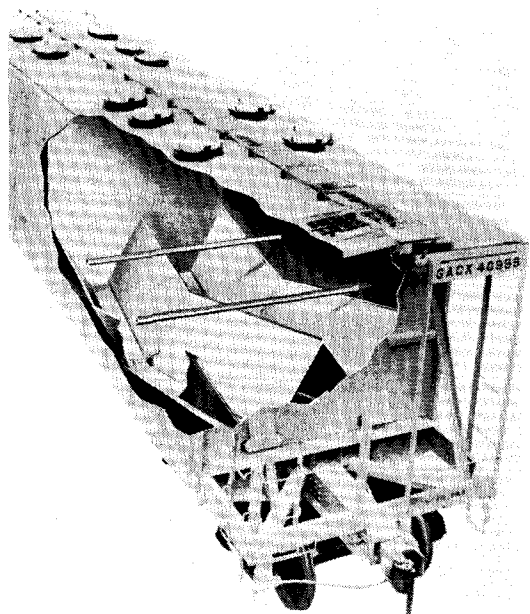


## Freight Car Transports Dry, Powdered Materials in Bulk

Development of a freight car for transporting dry, powdered materials in bulk, not considered practical or economical previously, has been announced by General American Transportation. Secret of the car is the Airslide principle by which the materials are fluidized during unloading, permitting minimum retention of the product in the car. General American says the car can handle such materials as feedstuffs, starches, and many chemicals.



Cutaway view of GATX car shows compartmented bins, slop sheets, and Airslide trough

The essential part of the Airslide system, a development of the Fuller Co., is a fabric of special design stretched over a U-shaped shallow steel channel. The channel below the fabric forms a plenum chamber into which air is introduced at a pressure of approximately 1 lb./sq. in., and in varying quantities, depending upon the material to be transported. The Airslide slopes toward the center of the car at an angle of 15°, and as air is forced through the fabric, slowly permeating the commodity above the fabric, the lading is aerated and fluidized, causing it to flow like water to the discharge outlets.

Loading of the car is done by gravity through roof hatches. The lading may be moved from the car by either gravity or pneumatics into any conventional

conveying system. The only essential piece of equipment which the shipper requires is a small, low-pressure blower, capable of delivering 200 cu. ft. or more of air per minute.

The car can be built in sizes of 2000, 2600, and 3600 cu. ft. to cover a wide range of powdered commodities of varying densities. The 2600-cu. ft. car is expected to offer a great advance because of the large variety of commodities having bulk densities in the neighborhood of 40 lb./cu. ft.

The Airslide car is of all welded construction and the sheets slopping toward the trench are at an angle of 60°. A nontoxic wax lining, with good corrosion resistant properties, can be incorporated to provide the interior of the car with a smooth surface.

The car is expected to lease for about \$150 per month. **E 1**

## Electronic Temperature Control for Batch Processes

A newly designed electronic temperature control for batch processes has been introduced by Thermo Electric Co., Inc.

This instrument, with 12 standard scale ranges for controlling temperatures from 0° to 3000° F., is said to combine the measuring accuracy of a null balance potentiometer circuit with the sensitivity and speed of an electronic control system. A magnetic control relay, the only moving part, throws positively when the process calls for a change of heat. Detection of temperature deviations is simultaneous with the measurement in the potentiometer circuit; the control signal is amplified electronically and the control relay is operated electrically. **E 2**

## Instrument for Measuring Radiant Heat

Beckman & Whitley, Inc., has introduced a radiometer for total-hemispherical or net-exchange radiant-heat measurements by direct electrical means.

Called the Model 188 hemispherical radiometer, the unit is comprised of a thermopile heat flow meter mounted adjacent to a slotted orifice attached to the discharge of a small air blower, which is said to eliminate convection effects at the heat flow transducer.

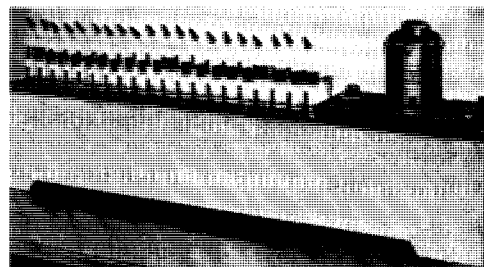
Response is claimed to be relatively

independent of wave length in the incident energy by use of a surface-blackening substance with linear characteristics and by the absence of windows, filters, or mirrors which would absorb radiation selectively. The instrument reaches 95% of steady-state conditions within 12 sec. after sudden exposure, the manufacturer claims.

Among practical applications of the instrument are: freezing of crops in winter; sterility or death of farm animals from overheating; snow melting rates; soil temperatures; and length of growing season. **E 3**

## Fat Stability Apparatus For Higher Temperatures

E. H. Sargent & Co. has redesigned its original fat stability apparatus to provide higher operating temperatures with a consequent reduction of test times. The new design, Sargent says, also makes it easier to assemble the air distribution system. The fat stability apparatus employs the active oxygen method for determining the relative keeping quality of lards, fats, and oils.



The electrically heated mineral oil bath is circulated by an immersed centrifugal pump. Temperature is adjustable over the range of 95° to 115° C. with regulation to  $\pm 0.1^\circ$  C. The suspended cover rack will accommodate 20 aeration tubes. **E 4**

## Cabinets for -95° F.

A line of horizontal utility cabinets for temperatures to -95° F. is announced by Hudson Bay Division of Refrigeration Systems, Inc. The chest-type unit is used for environmental testing of equipment and materials, predrying preparation of biologicals, and other purposes.

Units are available in 3-, 6-, and 9-cu. ft. sizes. All units are 17 in. wide and 22 in. high inside. Interior lengths vary between 15, 30, and 44 in. high. **E 5**

► Use coupon, page 342, for further information ►