

## PART II MECHANICAL EQUIPMENT

The following section contains specific mechanical detail and information pertaining to heavy-weight equipment built new and rebuilt in company shops. This also includes betterment cars.

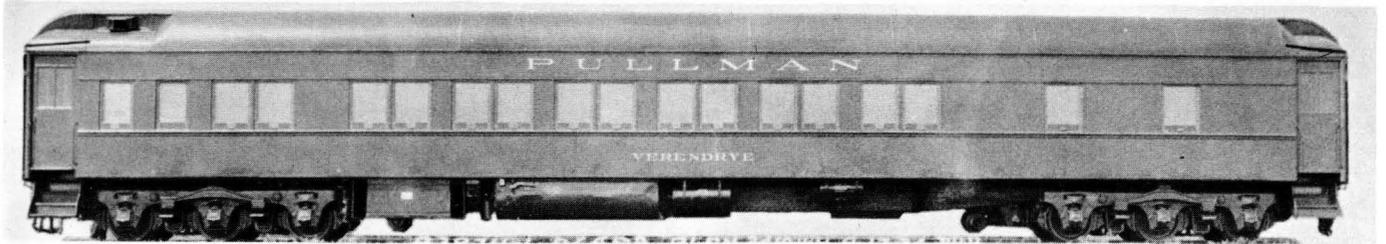
All major Pullman car systems—air conditioning, electrical, steam, air and water—are illustrated by photographs and drawings. The "A-C" portion includes underneath layouts to scale of each of the five basic Pullman air conditioning systems.

The Body Detail division includes underneath detail, windows, roof, vestibules, frame construc-

tion and other items frequently referred to in operation of Pullman equipment.

The Interiors division illustrates all Pullman special interior motifs and many of the various applications of these special motifs along with all standard interior examples including sleeper, lounge, club-baggage, diner and private car types.

The End Views section gives A and B end views of all basic types of cars also. Where ends vary from standard vestibule design, these are shown.



*Verendrye*, first Pullman mechanical air conditioned car using freon refrigerant. Ice type car *McNair* first successful general service air conditioned car (on ATSF).

This section contains all air conditioning systems applied to heavyweight equipment in regular Pullman service. For reference, a chronological listing of experimental systems is also included.

Experimental installations, including those in use as of 1941, were: Servel Electro-Mechanical applied car *Jacksonville*, Pullman Works, April 4, 1927. Removed August 8, 1927 and replaced with further system October 2, 1929, system being removed before car left shop.

Ice Cooling System applied car *McNair*, Pullman Works, June 10, 1929. Replaced with Standard Ice System, Calumet, July 13, 1937.

Ammonia Mechanical System applied car *Jacksonville*, Pullman Works, July 16, 1929. Pre-cooling revamped, Pullman Works, August 13, 1930. Car modified Pullman Works September 17, 1931, for third rail operation, eastern lines. System replaced by Pullman Mechanical, Buffalo Shop, December 17, 1934.

B&O Gas Engine Drive applied car *Lincoln Memorial*, Mt. Clare Shops, April 2, 1931. Converted to generator operation, Mt. Clare Shops, March 29, 1932.

Water Evaporation System applied car *Gloucester*, Calumet, August 24, 1931. Replaced with Standard Ice System, November 16, 1936.

Pullman Mechanical System applied car *Matanzas*, Pullman Works, December 31, 1931.

Frigidaire-Mechanical Electric Drive applied car *Lake Hiawatha*, Calumet, May 26, 1932. Parke Ice System applied cars *Wayfarer*, *Rambler*, *Clara Morris*, *Helena Modjeska*, Calumet, June 29, 1932.

Standard Pullman Mechanical (Westinghouse Generator) applied cars *Monmouth*, *Baron Rochambeau*, Pullman Works October 6, 1932. Westinghouse equipment removed, Pullman Works, July 1, 1933.

Electro-Mechanical, Electric Drive applied car *Black Diamond*, Pullman Works, June 19, 1934.

Ice Splash System applied car *Manitoba Club*, Calumet, July 30, 1935.

Rail-Vane Cooling System applied car *Hatfield*, Calumet, December 23, 1936.

Waukesha-Mechanical Gas Engine Drive applied car *Everson*, Calumet, July 13, 1937. Car sold CNW as lounge 7331.

Pullman Mechanical Dynamotor System applied car *McKeon*, Pullman Works, April 14, 1938.

Standard Systems in use are: *Steam Ejector*, applied car *Yakima*, Pullman Works, March 10, 1932.

*Standard Ice System*, applied car *Bald Eagle*, Buffalo Shop, April 26, 1933.

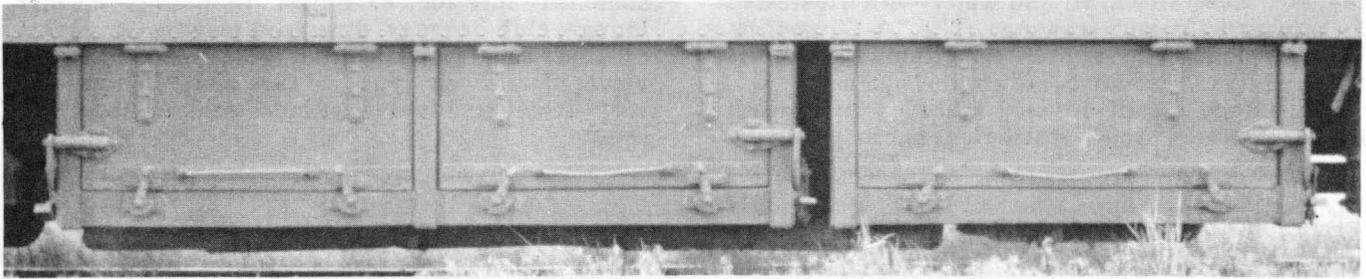
*B&O York Generator Operation System* applied car *Grace*, Mt. Clare Shop, March 4, 1932.

*Standard Pullman Mechanical (Mechanical Drive) System, applied cars Mary Washington, Ferry Farm, Monticello, Monmouth, American Revolution, Williamsburg, Yorktown, Ashland, Pullman Works, April 14, 1932.*

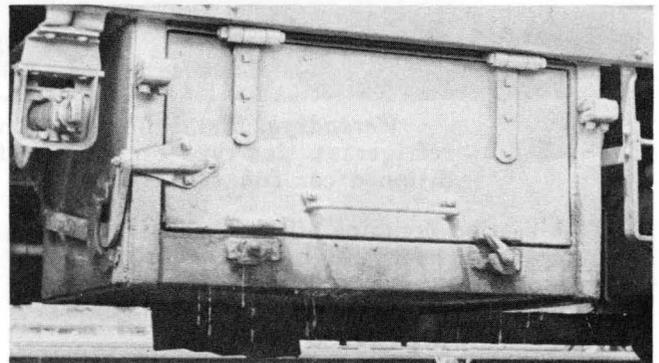
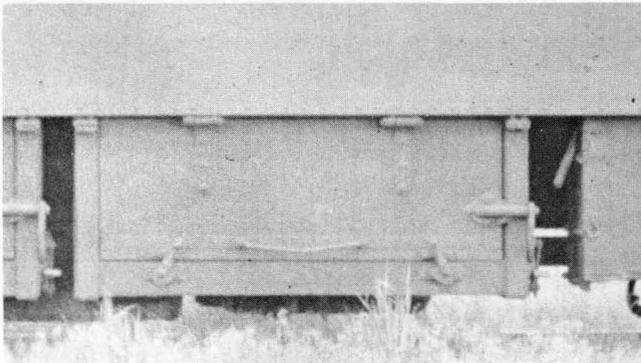
*Standard Pullman Mechanical Brine System applied car Utica, Pullman Works, April 10, 1934. Mechanical Brine System (Angle Drive) applied cars Clover Highlands, Clover Gate, May 15-19, 1936.*

### Ice System

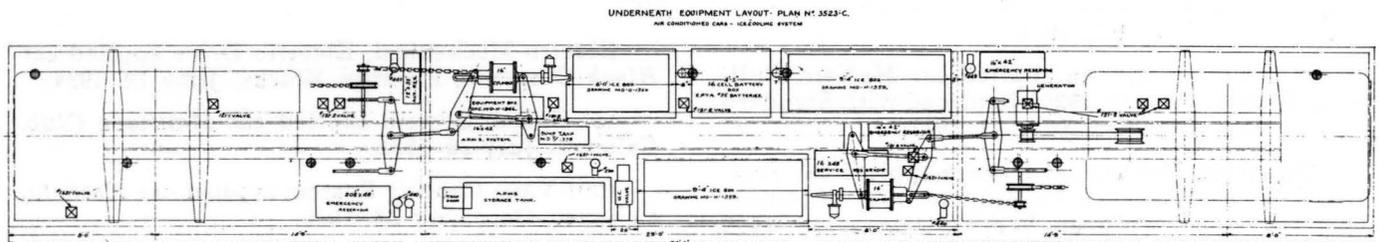
General Operation—Electric fan blows through evaporator of cold water from melting ice. Cool air circulated by blower. Bunkers hold 5100 to 5400 pounds ice (17 cakes, 300 lbs.). Ice activated cars in normal temperatures require re-icing each twelve to fourteen hours. Pennsylvania, New Haven, SP largest number of ice activated equipment.



Double ice bunkers and 6' single ice bunker. Standard types.



Single ice bunker showing bunker door safety latch. Diner installation. (right) General ice system plan.



Underneath layout, ice activated cars.

### Steam Ejector System

General Operation—Train line steam forced through jet creating vacuum. Water is refrigerant and action of boiling water through jet drops temperature to fifty degrees, thus creating cold for cooling.

Steam ejector applications are varied including roof and underframe refrigerating unit locations. Type RA is the standard heavyweight design and

designed for roof application. Type RBA is useable in either heavy or lightweight equipment, particularly the latter, and designed for low center of gravity equipment. The air conditioning units also supplied in various styles for various types of equipment. Club-baggage cars generally use ACD design without ducts. On skirted betterment cars, the air inlet and outlet screens are in the skirts.