

THE SOUTHERN ELECTRIC POWER COY.
GILBERT PLACE, ADELAIDE.

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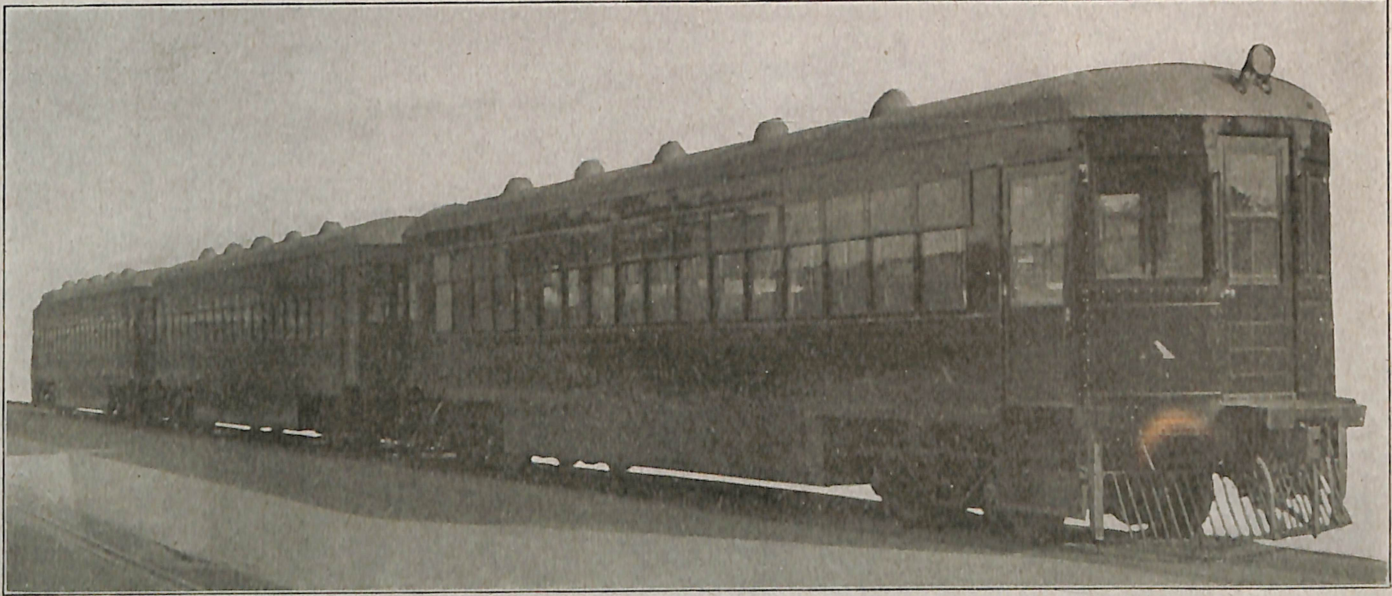
Storage Battery Cars for Mexican Railroad

THE THREE CARS shown in the illustrations have just been delivered to the United Railways of Yucatan by the Railway Storage Battery Car Company, New York. The cars are driven by motors geared to the axles and power is supplied to the motors by Edison storage batteries. The cars are designed to be operated singly or in multiple unit. The schedule as laid out for service to be performed,

cars are fitted for passenger service and are able to draw a trailer carrying baggage and express matter.

Construction

The car is constructed according to M. C. B. standards and the car body and its appliances are all steel with the exception of doors and inside fittings. The over-all length of car body is 56 ft., the extreme width is 8 ft. 6 in., and the extreme height is 12 ft. Reversible seats upholstered with rattan are used and the seating capacity of the car is



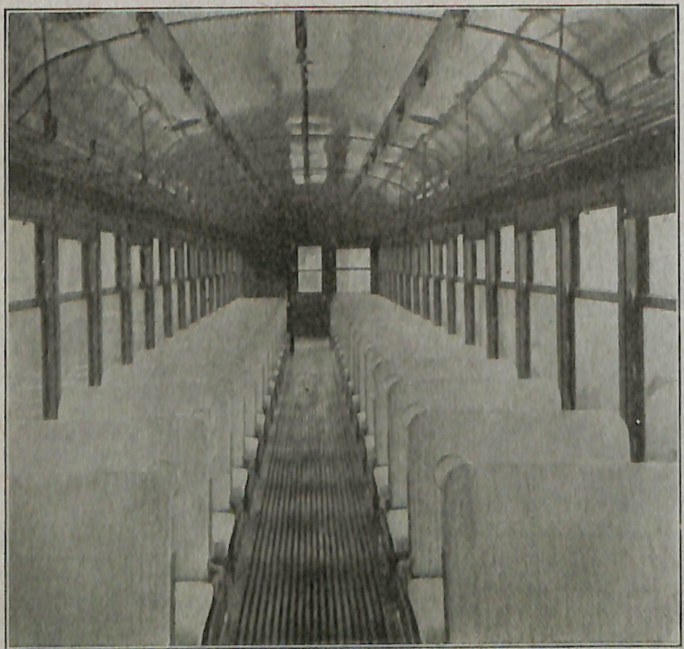
Three Storage Battery Cars Just Shipped to the United Railways of Yucatan

covers the run from Merida to Progreso, a distance of 23.6 miles. There are six stops between terminals and the running time over the line is 45 minutes. The city of Merida has a population of 70,000, while that of Progreso is 8,000. The grade between the two cities is practically level and the total service per day is three round trips. The

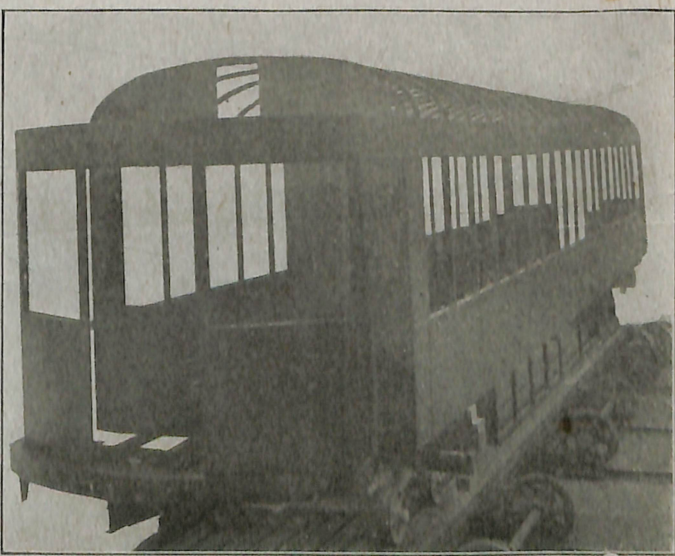
66 persons. Brill 69E trucks are used and the couplers, draft gears, and wheels conform to M. C. B. standards. The total weight of car without load is 28.3 tons; the batteries alone weigh 6.3 tons and the total weight of the motors and control equipment is about 3 tons. This makes a total weight per passenger of about 500 lb.

Motor and Control Equipment

Each car is equipped with four General Electric, No. 261,



Interior of Car Showing Seating Arrangement



The Car Bodies and Their Appliances Are All Steel, Except for the Doors and Inside Finish

250-volt, direct current motors. There is one motor for each axle and each motor is connected to the axle with a single reduction gear. These motors were supplied to meet the requirements of supplying a single car with 88 mechanical horse-power during acceleration and 28 mechanical horse-power when running free and to supply a car and trailer with 166 mechanical horse-power during acceleration and with 39 mechanical horse-power when running free. The motors are protected by Condit instantaneous, automatic, overload circuit breakers. Double end multiple unit control is used and the cars are connected with a seven-point cable when used in multiple units. The cars are equipped with General Electric straight and automatic air brakes.

Battery

Each car is equipped with a battery of 248 Edison type A-12 cells; 240 of these cells are used for the power circuit and eight for the lighting circuit. While the battery is being charged all of the cells are connected in series. A Sangamo ampere hour meter is installed in the charging circuit to insure the batteries the proper amount of charge.

Performance

These cars are capable of developing a speed of 45 miles an hour on level tangent track. It is possible for them to negotiate grades of from 8 to 10 per cent and to haul loads

of from 30 to 35 tons at a fair maximum speed. They may also be used to spot and drill loads up to 150 tons. Under ordinary service conditions their range of operation on one charge of the battery is about 120 miles.

The particular advantage of this type of car as presented by the maker lies principally in the characteristic of the alkaline storage battery. As the battery is comparatively light in weight, the total weight of the car is not excessive and as the battery is strongly built and not affected by ordinary vibration and shock it lends itself particularly to this class of service. The only attention required for this class of storage battery is to keep it charged and filled with water.

A storage battery, of course, represents a loss of efficiency, but it does away with line losses and where 24-hour service is not required the cost of keeping power on the line with no cars running is eliminated. Furthermore, it is usually possible to charge batteries during an off-peak period and thereby obtain a lower charging rate.

Similar cars are in use on the Cambria & Indiana, the Lorain, Ashland & Southern, the Atlanta, Birmingham & Atlantic, the Chattahoochee Valley, the Long Island and the Pennsylvania. During the mechanical conventions to be held at Atlantic City next June a demonstration car of this type will be operated between Atlantic City and Ocean City.