

In addition we are investing approximately a million dollars in a training program for some 2,600 employees in all categories of service. This is in cooperation with the Departments of Labor and the Department of Health, Education, and Welfare which are supplying an additional half million dollars to assist in the training of employees for the Metroliner service.

We are experimenting now with a new dining service on our regular trains in which parlor car passengers are served meals in their seats. This airline style food service will be a feature of the Metroliner service and has been extremely well received by our customers.

The new Metroliner cars will be the finest passenger cars in the world for this type of service. We are employing the best of the tried and proven components combined with the latest developments in all fields of technology.

The performance characteristics of the new Metroliners far exceed those of the cars on Japan's new Tokaido line, the world's only true high-speed service in daily operation. The Metroliners have an accelerating rate of 1 mile per hour per second from zero to 100 miles per hour compared with 0.68 mile per hour per second for the Japanese trains. Motors produce a maximum of 2,560 horsepower per car versus only 1,120 per car on the Tokaido line. Many of the freight locomotives in service today on the major railroads have 2,500 horsepower so you can compare the power in these passenger cars.

The Japanese trains have reached 159 miles per hour in testing, but in production operate at speeds up to 130 miles per hour. Our specifications call for a maximum speed of 160 miles per hour with a six-car train, and we have already exceeded that figure and reached a speed of 164 miles per hour with two cars.

Because of our high strength and higher performance requirements and our different electrical supply system, the Metroliners are somewhat heavier than the Tokaido cars. To complement such safety features as the strongest car body, sturdy cast steel trucks, the largest passenger car axles, and the absence of any flammable fuels aboard the train, we have also insisted upon a superior braking system. In fact, there are three braking systems: dynamic (electric braking), electro-pneumatic which is a combination of electric and air, and straight pneumatic in the air brake system. We specified these systems not only to make these high-speed cars safe, but to provide the high rate of deceleration essential to our reliability meeting the proposed operating schedule.

Another development is the new hook-type coupler, designed especially for this service. It represents a complete departure from anything ever before used in long-distance intercity railroad operations. We were able to specify such a coupler because the equipment is not being interchanged with other railroads. The new design gives us a strong, tight, self-locking coupling between cars. Instantaneously, it makes or breaks the mechanical, electrical, and pneumatic connections. There are 102 contacts in the couplers which provide passage for the various electrical circuits between the cars.

One of the two propulsion systems employs a silicon controlled rectifier system using thyristors for phase-shift voltage control. This is the first time that such solid state devices have been employed on