

When Boeing gets into the streetcar business

Late deliveries, technical problems plague both commuters and company

Like the passengers who ride Boston's antiquated streetcars, transit officials in some 40 U. S. cities are waiting impatiently for the promised arrival of sleek, modern light-rail vehicles (LRVs), once heralded as the space-age answer to urban transit problems. But for Boston's Massachusetts Bay Transportation Authority, the first transit system to order the LRVs in 1973, the new cars have brought more trouble than hope.

Technical problems have put the contractor, Philadelphia's Boeing Vertol Co., which normally makes helicopters, more than a year behind schedule—only 32 of the 175 cars ordered have been delivered, and of these only about 16 are running daily. Last April the MBTA refused further deliveries because the cars derailed on the storage yard's tight curves, and the doors would not work during passenger operation. While these startup problems are being solved at great cost by the subsidiary of Boeing Co., the storm signals in Boston are raising doubts that the LRVs—touted as bridging the gap between subways and buses—will ever be more than a curiosity in U. S. mass transit.

"Transportation is a technology-conscious industry," says Richard S. Page, Urban Mass Transportation Administrator in Washington. Page thinks that UMTA, which provides 80% of the funds for cities' transit improvements, should back away from space-age technology as a solution for urban transit problems. He would like to see cheaper and simpler European-style streetcars brought into production.

Indeed, the technology used by Boeing has yet to prove itself on the ground. "The LRV has not performed anywhere the way we expected it would," says Cleveland S. Peeke, superintendent of LRV operations at the new MBTA storage facility in Newton, Mass.

Two failures. The most bothersome problems on the list of hardware and electrical failures were in the mid-car wheels, where the car is articulated to negotiate curves, and the doors. De-

down a straight line," observes Peeke. "Combine that with any defect in the track and the wheel goes off." The doors, since redesigned by Boeing with considerably fewer than the original 1,300 parts, would not close properly or would give a false signal and halt operations.

Peeke estimates that the LRVs, which cost about \$293,000 each, will eventually run about \$400,000 to \$500,000. Boeing is picking up the bill for modifications.

Despite the LRV's problems, Boston commuters are delighted when a quiet, air-conditioned LRV glides into a station, instead of a rattletrap, grimy PCC (Presidents' Conference Committee) car, vintage 1940s. And last week nearly 600 representatives from federal, state, and local governments and transit agencies, who assembled in Boston during a heat wave for an LRV conference, were equally pleased. Boeing officials assured delegates that the LRV technical wrinkles are being ironed out. But as transit officials traveled home, they still have to ponder the major obstacle to the LRV: its cost.

Expensive needs. Only 10 U. S. cities, including Cleveland, Philadelphia, Pittsburgh, and Newark, N. J., currently run systems that can be adapted for light-

advantage when a separate right of way has to be constructed," UMTA's Page adds, "There are some more improvements to existing equipment that cities will have to look at before choosing the light-rail alternative."

In preparing their alternative cost estimates, cities must also look further down the line to LRV life-cycle costs, such as maintenance and support equipment. Industry observers complain that Boston, supposedly the LRV showcase city, cannot provide clear or timely figures. "It's too early to estimate our operating expenses," says David L. Gunn, director of MBTA operations. "Any results we have now would be atypical of what the long term will be." MBTA officials estimate that maintenance costs per passenger in five years will be the same as they are now for old PCCs. Gunn says that the LRV now takes more than three times the manpower to service, compared with the 25- and 35-year-old PCC cars, but each LRV car holds two-and-a-half times as many people.

Boeing Vertol admits that the future of LRVs in the U. S. is "confused." Says Arthur E. Hitsman, general manager of surface transportation systems for Boe-



Negotiating a curve in Boston where light-rail vehicles have gone off the track.

rail transit. LRVs can operate alongside cars and buses on surface-street rails, on reserved rights of way, such as median strips, or on private rights of way with low-level or high-level loading. Cities such as Buffalo, Dayton, and Miami, now mulling transit improvements, must take these expensive requirements into account in their comprehensive alternative analyses for UMTA, comparing LRV

ing: "Realistically, a lot of people are waiting to see how the new equipment performs in Boston and in San Francisco." Boeing plans to deliver two test trolleys to San Francisco in October, the first of an order of 100 LRVs made in tandem with the Boston order.

The critics. While no one in Boston denies that Boeing is working hard to correct the LRV problems, the concept of

man, president of Gellman Research Associates, a Jenkintown (Pa.) consultant in technology utilization and transportation. "Every time an American aerospace company has gotten into surface transportation, the result was a financial disaster. It's apparent that technological solutions and markets in surface transportation are far different than aerospace companies have anticipated." The other major aerospace company to fall on its face in transit projects was Rohr Industries Inc., contractor for the heavy rail cars in the new San Francisco/Oakland and Washington subway systems.

Gellman also questions the appropriateness of the government's urban

Despite the problems, Bostonians like the smooth, air-conditioned vehicles

transit spending policies. The government should be using its resources to promote competition at the same time it comes up with a standard design to promote high-volume, low-unit costs, he says.

The standard design idea for streetcars to hold down costs goes back to 1929 when the presidents of the 25 largest street railway companies in the U. S., then engaged in their last battle against the automobile, banded together in a group called the Electric Railway Presidents' Conference. According to *Trolley Car Treasury*, the definitive work on the subject, published by McGraw-Hill Inc., the group hired as its chief engineer "a man without prior experience in trolley car design on the theory that this was one way to avoid perpetuating untested past assumptions." After five years of pooling ideas and the expenditure of some \$1 million, the PCC car came into being. It continued to be produced until 1952.

The concept of standardization is a much-debated issue in transit circles. Says Leonard Bronitsky, an economist at the Transportation Dept.'s Transportation Systems Center in Cambridge, Mass.: "Economic forces push to standardization, but cities' individual needs do not."

Still, Gellman points out that Cleveland put out specifications for an LRV that were "wild in terms of the number of seats per door." Boeing's Hitsman notes that his company made three bids to Cleveland for three different car configurations ranging from \$720,000 to \$850,000 per car.

While the LRV controversy rages around it, the MBTA is still optimistic about its LRV fleet. "Although the LRVs have had their problems, they still carry a lot of people, and that is the criterion we have to go by," says Gunn. "We just wish there were a lot more of them." ■