

DART

– Dallas Area Rapid Transit –

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Designing Department

Kinki Sharyo delivered articulated cars (each consisting of two bodies) to DART. These were the first LRVs to be operated by DART. At inauguration in June 1996, 40 LRVs were assigned to Blue and Red Lines with a total length of 45 miles (72 km) and with 35 stations.

Subsequently, the Lines were extended and grew in terms of the number of passengers. To meet this increasingly high demand for transportation, DART gave us a second order for 34 units in 1997, a third for 21 in 1998, and a fourth for 20 in 2003. Currently, the Lines operate as many as a total of 115 units.

Both Lines extend from downtown Dallas in the north-south direction. In the downtown, the Lines are located in parallel with each other, with train cars running slowly on tracks adjoining general roads. In the suburbs, they dart on elevated roads at a speed of 100 km per hour. Most suburban stations have a parking space to enable “park and ride,” which has been promoted also in Japan in recent years. Thus, the train cars play a role in mitigating traffic congestion in the downtown.

Buildings in Dallas tend to have an elaborate design, and the design of the station building matches this overall tendency. Regarding the vehicle design also, customer specifications require a “futuristic” one. Such a design harmonizes well with the appearance of the station building and the streets, contributing to an artistic cityscape. Up to four units can be linked together, and this feature allows our vehicles to flexibly meet an increase or decrease in demand for transportation.

Vehicle Characteristics

The vehicle is designed as an articulated LRV consisting of two bodies; either part (A or B) is equipped with a cab at its end. With a length of about 27 m and a maximum width of about 2.7 m, the vehicle is one of the largest LRVs in North America. Since the platform height is as low as about 200 mm, a three-step entrance is provided to the vehicle side.



For the present project, we adopted a method involving the insertion of partly low-floor body C between bodies A and B that compose an already delivered unit. DART proudly refers to this new vehicle as “SLEV” (Super LRV). Their pride is understandable, in view of the many advantages of the vehicles: they can meet an increasing social demand for low-floor vehicles facilitating passenger movements into or out of a car, without any modifications on existing A/B bodies. Also, they can be adapted to a need to reinforce transportation capacity according to expected demand.

The most significant characteristics of SLRV comprise an improved convenience for passengers using wheelchairs for movement, and the ease of bringing a bicycle into a vehicle. In the case of an A/B body vehicle, a wheelchair user has to move through a slope to a special stand at the end of a platform, which is elevated to the same height as that of the vehicle floor; and has a gangplank set over the entrance steps to bridge between the stand and the vehicle floor. On the contrary, there is no level difference between a platform and the entrance of the low-floor C body in case of SLRV. Therefore, all a wheelchair user needs to do is simply moving into the vehicle when the door is opened. Though the gangplank of an A/B body vehicle can be set automatically by pushing a button, the motorman still needs to take some labor to help a wheelchair user into or out of the vehicle. SLRVs, for which no help is needed other than opening a door, will make the handicapped more positive regarding the use of transport.

The C body of SLRV is equipped with a bicycle rack, a feature unavailable in an A/B body vehicle. Since there are many hobby bicyclists in the U.S., many train cars and buses have a feature that enables these people to ride with their bicycle. The introduction of SLRVs will facilitate train trips for bicyclists, and an increased train use by them will help Dallas in its efforts to get rid of emission and traffic jams. All these considerations justify SLRV to be called a “Super” one.

Currently, work is under way at a final assembly plant in Dallas to insert C bodies into existing A/B body vehicles, and thus transform them into SLRVs.

Some SLRVs have already been put into operation since the summer of 2008; they are now running the lively streets of Dallas at a “Super” speed.