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Cold comfort

How railways are beating the winter blues

European metros

Asia's rail expansion

Sunny outlook for Canaries rail

The Spanish Canary Island of Tenerife's first foray into rail transport, in the form of a light rail line in the capital, has been so successful that it is already being extended and a mainline railway is planned, reveals **David Briginshaw.**

TENERIFE's first light rail line - a 12.6km route linking the capital Santa Cruz with La Laguna - opened in June 2007 and is already a success, with traffic running two years ahead of the original target. The line carried 27% more passengers last year than in 2007, and by October 2008 was running at around 50,000 riders on weekdays.

"The buses that ran before the tram started are still running, so we are in competition with them, but 55% of our passengers have not come from bus transport," says Mr Andrés Muñoz, director general of Metro Tenerife (MTSA). The attitude of the population has switched from scepticism before the line opened to wide acceptance as soon as people could see the benefit of leaving their car at home to take the tram. Tenerife has acute traffic congestion, with 500,000 cars for a population of 1 million. To make



European transit

matters worse, Tenerife has 5 million tourists a year, many of whom rent a car during their stay.

Muñoz cites several reasons for the success of the light rail project. Santa Cruz has 339,000 inhabitants and 55% of them live within 500m of a light rail stop, so the line has a very good catchment area. It also serves two hospitals, which are important traffic generators. The tracks are segregated from other road traffic wherever possible, and LRVs have priority at all road intersections to maintain a high average speed. "We provide a 24-hour service at weekends and during public holidays," says Muñoz, which means passengers can depend on the service to get them home after a night out.

The line cost €340 million to build

Technology to the fore in Tenerife

METRO Tenerife is proud of the close working relationship and good cooperation it achieved among its suppliers involved in providing some of the latest technology for the light rail project.

A consortium of Efacec, Portugal, and Ikusi, Spain, was responsible for the main systems contract for the project covering automatic vehicle location, video surveillance, passenger information, communications, Scada, and the integrated control centre. Efacec was also responsible for traction substations and catenary and electrical installations.

The two companies were also responsible for the fare collection system. This was one of the few areas where it was not possible to deploy the latest technology because Tenerife is planning an island-wide smart card system, so MTSA had to adopt a more traditional magnetic ticket system.

Transdata, a subsidiary of Transdev, France, supervised the implementation of the information system and linked together software provided by eight different suppliers. Another French company, Carl Software, was responsible for the maintenance management system, while Atos Origin supplied an executive management system to monitor such things as reliability, punctuality, and fraudulent travel. Lumiplan, France, supplied MTSA with its Heurès route planning, scheduling, and daily planning system.



One of Metro Tenerife's colourful Alstom Citadis LRVs at Weyler in Santa Cruz.

and equip and, according to Muñoz, is performing well financially. "It earns enough to cover the operating and maintaining costs and there is a surplus which we are using to pay off some of the loans," he says. "Our maintenance costs are low because we do the maintenance ourselves."

There are other factors which help to keep operating costs to a minimum. The line rises 600m from its starting point at Santa Cruz on the coast to La Laguna, which means the steepest gradients range from 8.5% to 9.5%, with an average of 5%. While the traction system of the Alstom Citadis LRVs had to be strengthened by having three motorised bogies, the vehicles are able to regenerate considerable quantities of power on the downward run. The roof of the depot is fitted with 3680 solar

panels which generate 10.3% of annual energy needs. The number of solar panels is now being increased to meet 16.5% of energy requirements in the future.

MTSA is a public-private partnership which is owned 80% by the island government, 14% by Transdev (the operator), Somague, and Ineco, and 6% by a local bank. MTSA has a 35-year concession to build and operate the light rail line. It also has a performance contract with rewards and penalties allied to targets for such aspects as reliability and headways, which it is currently meeting.

Work is underway on the first extension: two short branches totalling 2.26km are being built to form a second line from La Cuesta to Tincer, which is due to open in June.

Santa Cruz: light rail network



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