Abstract

The progressive introduction of the High Speed during the last years has meant a very important rest for the railroad, which was involved in a slow process of decay. Suffering for the last years of a bad image among the users, its market share had kept coming down gradually, at the same time as that of its competitors grew: the airplane and the car. The concept provided by the High Speed means an authentic revolution in the world of transports, introducing a new concept of management and functioning that joined the incredible improvement of the services received by the travellers, allows again the railroad to compete with the airplane in the best conditions.

The railroad of High Speed has aroused an enormous interest in all Europe, especially among its rulers, who consider it ideal as the community transport system for Europe. Besides helping integrate and cohere the different territories that form it, its leaders consider it as the best solution to the severe problems of congestion that experience nowadays the different existing transport modes in the continent (road, airplane and conventional train).

Due to this great interest rose in 1996 the project of the TEN-T, a big train network of High Speed in the European area, that at present it is already being in construction in different sections, and that will allow establishing, by 2020, the fast connection among the main European cities using high-speed trains.

The entry in service of this network can mean a re-launching of the international nocturnal services, whose situation it is still worse than the one experienced by the railroad in general. The use of this new infrastructure by the traditional nocturnal rolling stock and/or for a new totally exclusive nocturnal rolling stock of High Speed, could allow the establishment of nocturnal connections among the furthest European cities, crossing most of the continent for that.

The present dissertation aims to evaluate the possibilities that the nocturnal services in this new field will have, detecting those relations that can be more interesting and checking how it will react its market share in the face of the other transport modes, fundamentally the airplane transport, its main competitor. This should clarify the competitiveness of these new nocturnal services.

To obtain it a rigorous study of the existing nocturne services has been carried out, determining for the main companies (Elipsos, Artesia, DB NachtZug, CityNightLine...) the schedules, fees and accommodations offered for the trains operated on in each of the routes. The analysis of these information has allowed to carry out a complete image of this type of services.

A description with great detail of the future European network of High Speed has also been made, indicating which are the performances that are considered basic for its vertebration and what are intended to reach with them.

Having analysed this, the characteristics of the different conventional nocturnal rolling stock and of High Speed that are available have been compiled and analyzed. It has been proved that nowadays there are not High-Speed trains adapted to the need individuals of a nocturnal service.

Furthermore, some new nocturnal services have been suggested. The suggested routes are grouped together in three types, depending on the used rolling stock: conventional nocturne, of high services, and the “theoric” of High Speed. For each of these groups a model of rolling stock has been chosen. Besides this, the different routes have been organized in trains, to which a schedule has been assigned.

To evaluate the competitiveness of the posed services it has been tried to adjust a model of LOGIT-type modal distribution between the nocturnal train and the airplane. After calibrating it with observed data it has been applied to the suggested routes. The model alone works correctly for the group of routes served with conventional material (the same range of distances that those of the calibration), where the the fee average estimated for the train is 12,5%, close to the current ones which oscillate over the 16%. For the rest of groups (where the tours of the routes are very superior to those of the routes) the model fails.

Finally, the results allow stating that the applied model LOGIT presents limitations, since it can not extrapolate results to very different routes from the ones used in the calibration.