



CAR N. 6

RESTORATION OF THE HISTORIC CARRIAGE



100 YEARS HISTORY

To celebrate the 100th anniversary of the Trieste-Opicina railway line, the local transportation company at that time called Azienda Consorziale Trasporti S.p.A. and now Azienda Mobilità Territoriale S.p.A., organized the restoration of the historic car n. 6, which, together with car n.1, is an integral part of Trieste's transportation history, being a unique and inestimable European heritage.



PECULIARITIES

Car n. 6 was built in 1902 by Grazer Waggon und Maschinen Fabriks in Graz. The electric equipment was supplied by AEG Union of Wien. The length measures 9,9m, the width 2,25m and the height is 3,3m. The car's weight 11.400 kg when unloaded; 14.750 kg when loaded. The two electric engines, which are fed by 600 Volt direct current, deliver a 40kW power. The top speed is about 15 km/h

The car type-tested to carry 32 seated passengers and 12 standing passengers on the platforms. The gauge is metric-type.



PREVIOUS RESTORATIONS

After being used as working tram for a certain period of time, therefore totally emptied in the inside, the external part of car n. 6 was restored, gaining its original aspect, thanks to the hard work of the volunteers of the Railway Museum of C.M., where the car has been exhibited from 1990 to 2002.

SPONSORSHIP

The restoration was completed thanks to a consistent and indispensable financial support given by institutions and companies which strongly believed and invested in such project since the beginning. Special thanks go to that time's transportation company, Azienda Consorziale Trasporti

S.p.A. (now A.M.T. S.p.A.), Trieste Trasporti S.p.A., Regione Friuli Venezia Giulia, Fondazione CRT, and Officina Navale Quaiat S.r.l. Many institutions and persons took part in the outcome of this operation and in particular:

Ing. Nobile, Sig. Buzzi e Sig. Goruppi
Trieste Trasporti S.p.A.

Sig. Koffler e Sig. Broy
Sad Ferrovia del Renon

Sig. Puccioni, Sig. Rusin e Sig. Di Matteo
Museo Ferroviario di C.M.

Ing. Heinloth
Siemens AG Transportation System

MT Eisenbahnbedarf, Wien
Wiener Tramway Museum, Wien

Grazer Museum, Graz

Archivio Storico e Fotografico di Cesare Quaiat

Archivi fotografici Puccioni e delle aziende coinvolte.



THE RESTORATION

First of all the work has been previously planned and each component has been designed in order to proceed in an organized way and to carry out an accurate work in all details.

The first operation was extremely delicate and requested absolute precision work to separate the steel chassis from what remained of the centenarian wooden cabin.

WOOD CARPENTRY

The original wooden cabin of the carriage was transported to the Labora carpentry in Banne (Trieste), which used it as 1:1 scale model to build the new tram carriage.



Initially the wood was submitted to rough-shaping, followed by a period of natural weathering before the finish.

The wooden essences employed were the same as the original wood: larch, mahogany and oak. The cabin's structure is composed by a chassis in which are shaped all openings, manufactures and joints needed for the assembly of further parts.



The floor was realized with larch wood staves 35 millimetres thick, whereas for the construction of the benches mahogany wood was employed and then covered with oak wood. The support basis were made of polished brass.

Once the covering has been completed a further lamellar dressing was applied and fixed with water resistant glue, like on a boat hull, to make the surface water resistant, sturdy and at the same time elastic. The lower part of the sides of the car have

been covered with mahogany wood panels and fixed to the chassis one by one with brass screws, whereas the upper parts have been covered with mahogany red painted metal sheets, on which golden Greek ornaments were reproduced, exactly as they were on the original carriage.

CARPENTRY AND MECHANICS

The chassis has been completely overhauled and all damaged parts have been replaced. The conjunctions between the parts were restored using hot riveting like a hundred years ago, when electric welding between metals had not yet been invented.

The original rims and axels have been tested and regenerated. Same procedure was applied to the leaf suspension of the frame. The transmission gears were also kept original: they are composed by two half gears, joint by screws.

After being built with the tool machine, the axel bushings have been covered in the contact area by wear-proof fused white metal.



The brass lamps inside the car, designed by the architect Otto Wagner in 1900, have been reproduced exactly the same in all details by Woka Lamps of Wien.

The castings of the stop bells' bronze parts were made out of stamps which had the exact shape of the original bells.

All sound's mechanical components have been designed and reconstructed.

The reflecting parables of the central lights on the external front side of the car were made of inox steel fruit bowls.

The service brake is performed by the driver who pulls a bronze hand lever which, through a complex system of tackle levers, acts directly on the wheels by means of cast iron brake-blocks that close up and stop the car.

The contact trolley or pantograph was built arch shaped, as the original model. This was kindly lent by the Renon-Rittner Bahn railway of Bolzano, which employs

on its railway aged carriages built in the same factory in Graz.



ELECTROMECHANICS

The original electric engines were recovered in the deposit of Trieste Trasporti in S. Sabba (Trieste). They were accurately overhauled and tested so that they have been assembled on the new car, thus maintaining the original traction system.

The U22 A6 electric engine models were built by AEG Union and are fed by 600 Volt direct current with a 20 kW power each.

The original running controllers have been completely overhauled and reassembled. Besides controlling the riding direction, they allow the driver to increase or decrease the speed plugging in or disconnect opportune electric resistances from the electric engine circuit.

The emergency brake is the electromagnetic type. Under the tram chassis there are four sliding blocks which are activated by the switch near the controllers. Once they are magnetized they drag on the railway to decelerate and finally stop the car.

THE FINAL ASSEMBLY

It took 144 working days, 8000 labour hours, 5 cubic meters of various kinds of wood, a couple of tons of iron, hundreds of meters of electric wire, thousands of screws and bolts, glues, pains, and many sleepless nights, but in the end, thanks to passion and perseverance of the people who helped out in this project, car n. 6 has been brought back to its original deposit in Opicina, exactly 100 years since its first official run.



CONTACT



info@quaiat.it - marino.quaiat@quaiat.it (general manager)
gaia.benvenuti@quaiat.it (marketing & pr manager) - andrea.viezzoli@quaiat.it (sales manager)
robert.petrerc@quaiat.it (supervisor) - adriana.lombardi@quaiat.it (administration manager)