



Forged Aluminum Wheels

Weigh much less, resist much more.



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Dear Alcoa,

In the previous editions you knew the advantages identified by our customers from Chile, Paraguay and Uruguay. We are diversifying our presence and coverage in the South American territory offering sustainable solutions – Products and Services. In this edition, we have the pleasure to show you one more successful project, now from Brazil, through Companhia Carris Porto-alegrense (South region), a company that is one of the references on the urban transport of passengers, which has identified and measured significant gains in fuel consumption.

Enjoy the reading!

Eduardo J. Lacerda

Alcoa solutions optimize costs in urban passenger transport

Regarded as one of the main public urban transport companies in Brazil, Carris equips its vehicles with Alcoa aluminum forged wheels and obtain good results in the fleet



At Carris, weight reduction of the vehicles allowed transporting two more people in each trip

With 134 years of tradition, Companhia Carris Porto-Alegrense, de Porto Alegre (RS), is synonymous with capital excellence. The company is responsible for the safe transport of 240 thousand people daily. To maintain the quality of its services, the transporter has always sought solutions that guarantee the safety and well-being of passengers and also meet the needs of the population and market. It was following this purpose that, six years ago, Carris chose to equip the buses of its fleet with Alcoa aluminum forged wheels, confirming positive results. “We proved that the solutions of Alcoa aluminum brought benefits for Carris and corresponded to all our expectations”, states the engineer, Hélio Dilberto Mendes, the company’s maintenance manager. The company, which had already equipped 85 of its 323 vehicles with the Alcoa aluminum forged wheels, purchased 62 new buses already having the aluminum solution. “These components are light, resistant and, because they are more attractive, also make our buses noticed on the streets”, evaluates Hélio. Vehicles with six, eight and ten wheels run in the Carris fleet..

Strength and lightness

According to the maintenance manager, the main factors that made the company chose wheels forged from Alcoa aluminum were the strength and lightness of these parts. “Since our

buses cover the most varied terrains, we required a resistant product capable of guaranteeing passenger safety”, states Hélio. The manager says that the company was also looking for a light product “We proved that the weight savings obtained in the vehicle with the Alcoa aluminum forged wheels is equivalent to the capacity of transporting two more people in each trip, since this material is 50% lighter than steel”, he explains. Carris operates 26 metropolitan lines in Porto Alegre, and its buses cover a total of 66 thousand kilometers daily. It is the company with the biggest fleet in the city: transport a quarter of passengers from the Rio Grande do Sul capital. Attentive to fuel costs, Hélio noticed a significant savings after the company started using the Alcoa aluminum forged wheels. “We experimented with other wheel types, but we noticed little savings”, he remarks. “After we were introduced to Alcoa’s solution, the cost reduction was quite noticeable”, he states.

Tested durability

Durability of the wheels was noticed by Hélio. “We noticed that at long term, the wear of Alcoa wheels is quite lower than that of steel wheels”, he recognizes. Another important factor pointed out by the professional was the ease of maintenance of wheels forged from aluminum. The maintenance manager states that it has now become easier to preserve the parts.

Instead of using sand blasts and painting, as was usually done with steel wheels, the Carris team also started applying a basic polish on the wheels.

“In the near future, we hope to equip 100% of our buses with Alcoa aluminum forged wheels”, concluded Hélio. Considered by the National Public Transport Association (ANTP) as one of the best urban bus operators in Brazil, Carris obtained in 2005 the first place in the category “Efficient Public Company”, according to the Top of Mind de Porto Alegre Survey.



Hélio Dilberto: “We hope to equip 100% of our fleet with Alcoa wheels”

How much Carris reduced in the weight of its vehicles: Weight comparison between wheels

Vehicle with 6 wheels	Reduction per vehicle: 198 kg
Vehicle with 8 wheels	Reduction per vehicle: 264 kg
Vehicle with 10 wheels	Reduction per vehicle: 330 kg

Bus equipped with Alcoa aluminum forged wheels (24 kg each) in comparison to the bus equipped with tube type steel wheels (57 kg)