

Le Gyrobus: An Electric Bus in Colonial Kinshasa

Robert Heinze*

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In the history of technology, there is no shortage of artefacts that, once propagated as supremely modern and useful, quickly disappeared and were forgotten as more practicable standards, simpler technological solutions for the same problem or just a company with better market coverage brought those devices to the fore that appear in hindsight as touchstones of technological development. Rarely do these artefactual technologies experience a comeback. Thus, exceptions are interesting. One of these exceptions is the Gyrobus, an electrically powered, cable-less bus that operated for only a few years in the 1950s, and only in very few places, with Léopoldville in the Belgian Congo (today's Kinshasa) being the only city that tried to build a whole public transport network around the vehicle. While the original bus was phased out after only a few years of operation, the technology made a grand comeback in Geneva in 2017. This raises the question: what went wrong the first time? Was the technology not developed enough? Or was it ahead of its time? The answer to this

* Copyright 2020 Robert Heinze. Robert Heinze, Ph.D. is assistant professor at the University of Trier, Germany. His research interests include the history of infrastructure, media history, and the political economy in contemporary African history. Publications include "Fighting over Urban Space: Matatu Infrastructure and Bus Stations in Nairobi" in *Africa Today* 65, no. 2 (2019): 3-21; "The African Listener': State-controlled Radio, Subjectivity, and Agency in Colonial and Post-colonial Zambia," in *From Audiences to Users: Everyday Media Culture in Africa*, edited by Winston Mano and Wendy Willems, 47-70 (London: Routledge 2016).

question points to the entanglements between technology, infrastructure, and the specific social, political, and cultural deformations of a colonial society.

The Gyrobus was a spectacular if at first glance unassuming piece of transport technology. The electric bus combined the advantages of the tram—it used a cheaper energy source and didn't pollute – with those of the bus. It operated freely and was cheaper to set up. It employed a flywheel that could be charged via special pylons at the bus stops, then propel the traction motor for up to 8 kilometers. It even stored braking energy. Thus, it was the first electrically-driven vehicle that could operate independently from constant energy input in the form of, e.g. a tram-like cable system, or a third rail. During its production, the Gyrobus operated only in Yverdon-les-Bains, a small picturesque town at the shores of Lac Neuchâtel, in Gent, and in Léopoldville. However, only the administration of Léopoldville actually tried to use the bus as the backbone of its freshly inaugurated public transport system – the city operated twelve buses on four lines, while in Yverdon (two on two lines) and Gent (three buses on one interurban line), they only ever remained an add-on to an already existing network. After seven years of regular operation, the Swiss producer Oerlikon stopped its production.¹ But in 2017, the principle behind the *Gyrobus* was revived in Geneva and new electric buses charging during stops were presented to the seemingly oblivious Swiss public as “avant-garde” and “the first of its kind”—an echo of how the Gyrobus was presented to the inhabitants of Léopoldville.²

The problem with the first iteration of the cable-less electric bus was that the motor was relatively weak, charging times at bus stations too long, and the gyroscopic mechanism propelling it too sensitive. But why did the Belgian colonial government decide to use an experimental form of public transport that was untested in the tropical climate of its colony, instead of the ones that had been proven to work in similar cities?

The original motivation to introduce public transport in Léopoldville came from an experience of unprecedented urban growth in the 1940s. This, together with a

¹ “Der Gyrobus – eine Weltneuheit ohne Erfolg,” *NZZ*, 20 May 2003.

² “Genfs avantgardistische Trolleybusse,” *NZZ*, 16 July 2016; “In Genf verkehren ab sofort weltweit einzigartige Elektrobusse,” *watson.ch*, 15 December 2017 (accessed 25 May 2018).

comprehensive colonial development plan, resulted in a restructuring of the city according to a new masterplan in 1948. The masterplan envisaged a functionalist structure for the core city—separating it into an administrative, industrial, and two separate living zones for Europeans and Africans respectively—and the construction of satellite cities able to contain the rural-urban migration flow. Despite this new, functionalist outlook, the city structure retained the segregation between the European quarters and the administrative center, on the one hand, the African quarters and the industrial zone on the other. At the same time, the extension of urban space necessitated commuter transport for workers. By 1951, workers had to walk an estimated average distance of 5-10 kilometers (Only 10 percent owned a bicycle), blocking two to four hours per day just for the commute. Workers became so exhausted that productivity in the industrial zone suffered significantly. Thus, it was imperative to provide public transport opportunities, not for Africans to actually take part in all aspects of urban life, but to ensure the continued functioning of the industrial workforce necessary for the colonial *mise en valeur*—the principle that colonies needed to be brought to a level of sustainable, autonomous economic development via education and infrastructural programs. But there was another motivation behind the large development plan for the colony and the urban masterplan behind the Gyrobus: like other colonial states, the Belgian Congo found itself looking for legitimacy after 1945, in the face of growing anticolonial resistance. Colonial exploitation gave way to an ideology of development and modernity that promised African colonial subjects a gradual increase in living standards and access to modern amenities while preserving the original hierarchies and economic exploitation.³ Thus, there were fundamental contradictions permeating the city's transport network: the tension between allowing Africans to move around for designated purposes (labor) while controlling all other movement through an ultimately still racially segregated city, and the tension between popular colonial modernization efforts and its continued interest in the *mise en valeur*.

³ Guy Vanthemsche, *Belgium and the Congo, 1885–1980* (Cambridge, UK: Cambridge University Press, 2012).

Below the level of grand colonial schemes, this translated to the tension between providing a public service and making a profit from it. The Belgian colonial state, more than others, was intricately entangled with private Belgian enterprise, in the form of the Société Générale, a conglomerate owning many of the factories in Léopoldville's industrial zone. The problem was that in order to save money and effort, the colonial administration decided to inaugurate a public-private company, which would take care of operations. The Belgian engineer corps, and an invited consultant engineer from Brussels, recommended constructing a tram network. It would, they argued, provide an adequate network for a city of the size of Léopoldville (around 200,000 at the time), and electric power would be cheaply available once the Léopoldville-based company COLECTRIC had finished the construction of a new dam at Zongo, on a tributary to the Congo river not far from the city. In fact, the COLECTRIC applied for the license to run the future public transport network in Kinshasa, thus ensuring an outlet for the higher power load generated. However, the colonial ministry and those in charge of the colonial development plan financing the scheme felt that the tram was "an obsolete means for urban transport, and will soon disappear everywhere where it is installed."⁴ In reaction, the COLECTRIC, to ensure its original plan as much as in order to accommodate the obvious desire to use a technology as modern as possible, proposed the Gyrobus. Excited administrators agreed: this would be the emblematic vehicle of "Kin la belle", a thoroughly modern tropical city (see figure 2). Promotional pictures show clean-cut conductors in shiny buses in front of modernist train and bus stations, emphasizing the newness and modernity of the scheme. The Gyrobus can be described, in the words of anthropologist Brian Larkin, as "colonial sublime." In this vehicle infrastructure and technology became expressions, harbingers, and symbols of progress at the same time: "Bridges, roads, health initiatives, and radio sets were combined into concrete, material

⁴ "Le système de tramway . . . est considéré, à tort, comme moyen de transport urbain désuet et destiné à disparaître rapidement partout où il est installé." Author's translation. Ingénieur Principal (du STP): Not pour M. le Ministre (des Col.) 3 July 1951, AA, 3e DG (1533)1.

expressions of the developmentalist work of the colonial regime and its continual aim of progress.”⁵



Figure 2: Buses lining up in Kinshasa. (Photo from Maschinenfabrik Oerlikon. Courtesy Tram Museum Zürich.)

In reality, the Gyrobus in Kinshasa was largely a failure. It quickly turned out that the technology was far from able to handle the tropical climate and insufficient road infrastructure: the sensitive flywheel rusted in Kinshasa’s permanent humidity; it couldn’t provide enough power to propel the buses up the hilly outskirts surrounding the basin in which the city is situated, and it could only operate on the three large axes that were tarmacked. The long loading times at bus stops, the relatively weak horsepower and the high cost of purchase (double that of a fuel-powered bus) and operation (though electric energy was cheap, it consumed three times the energy of a normal bus) made the Gyrobus a less than sustainable vehicle to provide public transport for an ever-growing city. The company created by the COLECTRIC in collaboration and co-ownership with the colonial administration, Transports en Commun de Léopoldville (TCL), started with eight Gyrobus and proceeded to buy four more, but already at

⁵ Brian Larkin, *Signal and Noise: Media, Infrastructure, and Urban Culture in Nigeria* (Durham: Duke University Press, 2008), 61.

inauguration supplanted the fleet with two Diesel buses and several trailers to be able to deal with rush hour transport.⁶ When Oerlikon stopped the production, the Gyrobus was finally over. Even together with the additional Diesel buses, it had never managed to service the growing demand with less than 1 million trips per month, in a city growing between 1950 and 1960 to more than 400,000 inhabitants (for the African quarters alone), which had a demand of at least 2 million trips per month.

The story of the Gyrobus brings to light the tensions inherent in colonial city planning: between enabling and controlling Africans' movement, between exuding modernity and raising living standards and *mise en valeur*, between planning for growth and leaving African quarters largely to themselves. It was clear that the administration wanted a system that was as cheap as possible in setup and upkeep so that fares could be kept so low as not to affect wages. The COLECTRIC proposal to take over public transport was popular among bureaucrats because it ensured this; a Public-Private Partnership and the opportunity for vertical integration in the company made the scheme attractive for all participants. But the decision to eschew a tramway network—by far the preferred option of the consulted experts—came about because of the administration's obsession with "modernity," seeing the tram as an obsolete technology. In order to guard its stakes in the venture, COLECTRIC came up with the Gyrobus as a solution that met all the requirements: operating using cheap, clean energy produced locally (thus guaranteeing the colonial *mise en valeur*), modern, flexible to adapt to changing urban environments. The administrative sources show a discussion about productivity, profitability, effectiveness, and modernity, not about usability. In these circumstances, the ultramodern technology of the Gyrobus, rather than providing the city with a new, modern transport network enabling its inhabitants to take part in urban social life, exacerbated the compartmentalization of urban space and urban mobility that still plagues today's Kinshasa. The example of the Gyrobus shows the interdependency of technology and its embeddedness in political, cultural, and infrastructural contexts.

⁶ Ibid., 116.

Suggested Readings

- Beeckmans, Luce, and Johan Lagae. “Kinshasa’s Syndrome Planning in Historical Perspective: From Belgian Colonial Capital to Self-Constructed Megalopolis.” In *Urban Planning in Sub-Saharan Africa: Colonial and Post-colonial Planning Cultures*, edited by Carlos Nunes Silva, 201–24. New York, NY: Routledge, 2015.
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