

'The Modern Atlas': compressed air and cities c. 1850–1930



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ABSTRACT

This article provides an overview of pneumatic technologies in nineteenth- and early twentieth-century Western cities. As urban centres continued to grow and expand in the nineteenth century, networks of compressed air were introduced to provide public utilities and private services in a variety of domains, ranging from postal services to beauty parlours. Previously used in mining and large construction works, pneumatic technologies seemed to rival electricity towards the end of the nineteenth century in the provision of urban utilities. Eventually, however, these technologies did not prove flexible enough to keep up with rapid urban population growth and the expansion of cities themselves, nor were they able to become glorious symbols of urban modernity. Through an overview of compressed air applications as used in urban centres, particularly Paris and London, the article provides an insight into the relationship between technological networks and urban modernities from the perspective of this relatively neglected urban network and technology.

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Compressed air, though as old as the hills, is a new thing in its usefulness to mankind. This century, and we may also say this decade, is the compressed air era, and yet the useful application of this power has become so general, that we appear to be only beginning to enter this wide field of usefulness.¹

In 1900, Charles Emory Smith, the then postmaster-general of the United States, predicted that by the end of the decade the pneumatic postal tube system would extend to every house for the immediate delivery of mail following its arrival in cities.² It turned out that his prediction was not quite accurate – far from it. By 1918 it became clear that the future of mail delivery in the USA did not lie in pneumatic tubes, and the system was gradually suspended in the following years. In other ways, however, Smith's prediction was not so far off the mark. In the late nineteenth and early twentieth centuries the use of pneumatic networks in the cities of western Europe and the United States was hardly uncommon. Pneumatic

technologies were perceived as a developing and promising technology for the future. It was, contemporaries observed, 'The Age of Compressed Air' (Fig. 1). Compressed air was 'The Modern Atlas' that sustained an industrial world which 'revelled in dreams of pneumatic enthusiasm' (Fig. 2).³

Those glory days may be over, but pneumatic technologies are far from dead. Several small cities in France opt for pneumatic recycling systems in newly built areas (Saint Ouen and Romainville, for example). There are other signs that some of the dreams of the pneumatic enthusiasts may be materializing. Since 2003 a system called Pipenet has been developing to propose a more environmentally friendly and cheaper alternative to freight transport.⁴ In 2013 the French car manufacturer Peugeot revealed its new hybrid engine, using fuel and compressed air, which is expected to reduce fuel consumption and be ready for commercialisation by 2016. MDI

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¹ Anon., Men prominent in compressed air development, *Compressed Air* 3 (1898) 437.

² C.E. Smith, Mail by pneumatic tubes a possibility for all houses in future, *The Brooklyn Daily Eagle*, 30 December 1900, 8.

³ Anon., London's lost tunnel, *Compressed Air* 5 (1900) 925.

⁴ See, for example, Put that in your pipe and poke it, *The Economist*, 8 January 2011, 73; O.N. Egbunike and A.T. Potter, Are freight pipelines a pipe dream? A critical review of the UK and European perspective, *Journal of Transport Geography* 19 (2011) 499–508.

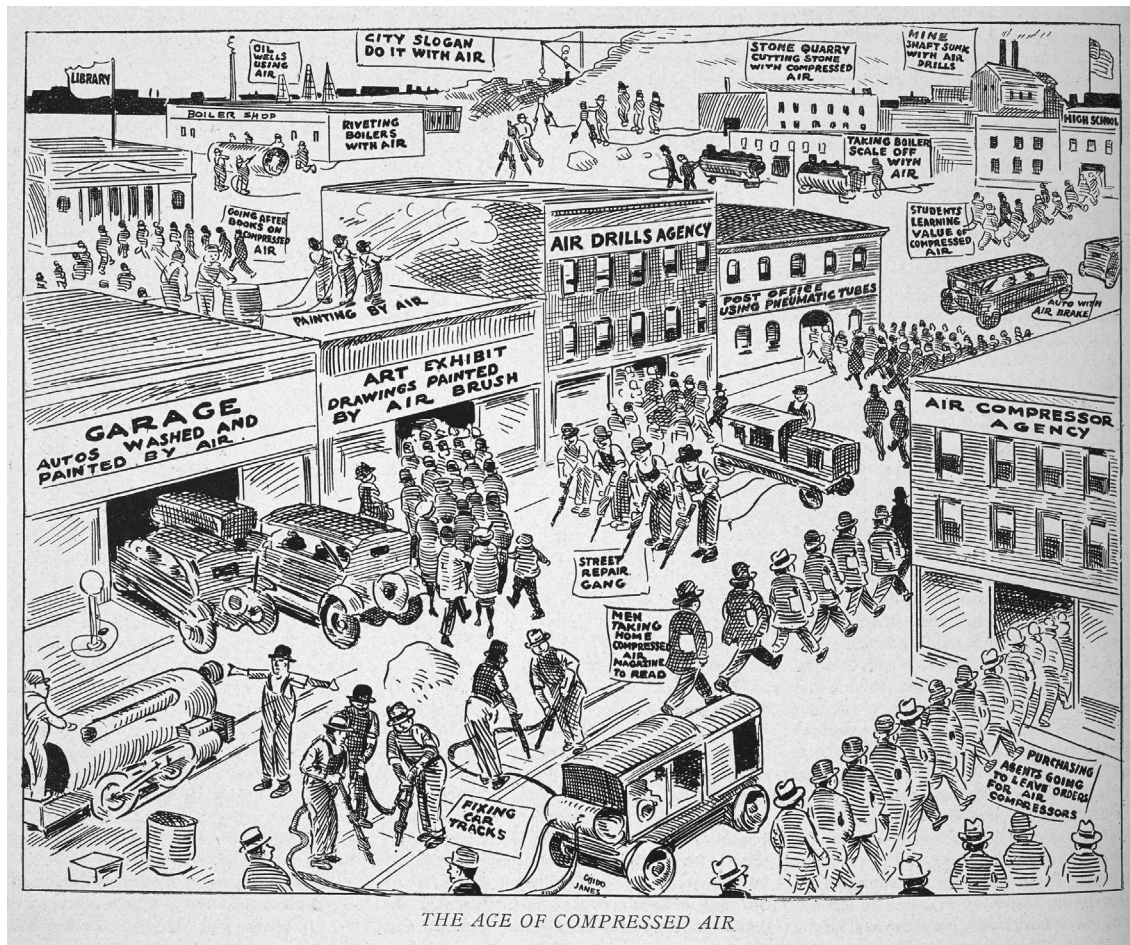


Fig. 1. The age of compressed air. Source: *Compressed Air* 27 (1922) 120.

(Motor Development International), another French Company, has been developing compressed air cars for more than two decades, and has recently signed a licence agreement with the Indian company Tata Motors to produce and commercialise compressed air cars in India, notably its AirPod model.⁵ Hybrid technologies constitute one of the key alternatives that car manufacturers continue to explore in order to preserve their share in the future of sustainable mobilities.

In this article we explore the contribution that an account of pneumatic technologies has to make to our understanding of the consolidation of urban networks. Whereas transport, telecommunications, electricity, sewers, and, more recently, water have received due attention by historical geographers, historians of science and technology and cultural historians, scholarship on compressed air has been predominantly the preserve of practitioners and enthusiasts who highlight the minutiae of the technology often at the expense of context and analysis.⁶ Why, then, have pneumatic technologies been neglected in the historiography of urban modernities? What role did they play as urban technological networks

in nineteenth- and early twentieth-century cities? Why did they fail to survive as prominent urban networks? What does their 'rise' and 'fall' tell us about urban modernities and urban technological networks? We address these questions by tracing the emergence, development and disappearance of pneumatic technologies in nineteenth- and twentieth-century Western cities, focusing, in particular, on examples from Paris and London.

Technological networks and urban modernities

The rise of the telegraph, and later telephony, developments in postal services and urban transport, the planning and construction of sewers as well as the provision of public utilities such as gas and water have been central to studying the development of networks of infrastructure in cities.⁷ Urban networks were, and remain, visible and invisible; overground and underground; fixed yet growing; privately funded and publicly operated, or a combination

⁵ Peugeot veut faire rouler ses voitures à l'air comprimé, *Libération*, 23 January 2013 online edition http://www.liberation.fr/economie/2013/01/23/peugeot-veut-faire-rouler-ses-voitures-a-l-air-comprime_876068 (accessed 25 November 2013); MDI's air engine technology tested on Tata Motors vehicles, Tata Motors press release, 7 May 2012, available at <http://www.tatamotors.com/media/press-releases.php?id=750> (accessed 25 November 2013).

⁶ The magazine *Compressed Air*, founded in 1896 and running to the 1960s, used throughout the article, illustrates this point.

⁷ T.P. Hughes, *Networks of Power: Electrification in Western Society, 1880–1930*, Baltimore, 1983; F. Caron, J. Derens, L. Passion, P. Cebren De Lisle (Eds), *Paris et ses réseaux: naissance d'un mode de vie urbain XIXe-XXe siècles*, Paris, 1990; K. Bowie and S. Texier (Eds), *Paris et ses chemins de fer*, Paris, 2003; R. Dennis, *Cities in Modernity: Representations and Productions of Metropolitan Space, 1840–1930*, Cambridge, 2008; S. Guy, S. Marvin and T. Moss (Eds), *Urban Infrastructure in Transition: Networks, Buildings, Plans*, London, 2001; P. Dobraszczyk, *Into the Belly of the Beast: Exploring London's Victorian Sewers*, Reading, 2009.

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