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ON THE COVER

Santos-Dumont's Blimp Passes the Eiffel Tower

PETER SOPPELSA and BLAIR STEIN

The photograph on this issue's cover is drawn from Gustav Eiffel's 1902 book, *La Tour Eiffel en 1900*.¹ This book documented the tower's continuing development after its 1889 debut, including its importance for scientific experiments in wireless transmission, meteorology, long-range photography, and aviation. Eiffel addressed the book to the tower's critics, who claimed that its relevance and grandeur had faded since 1889.

The tower was the *clou* ("main attraction," literally nail, pin, or spike) of Paris's 1889 universal exposition, which celebrated a century of republican progress since the French Revolution. On this momentous occasion, the tower celebrated industrialism, the centrality of iron construction, the aesthetic exuberance of engineering, and, not least, French technological prowess. From 1855 to 1900, the universal expositions brought the world to Paris as they promoted Paris to the world. The tower's triumphalism and gigantism, perhaps emphatic to the point of neurosis, suggest a familiar long-term mix of pride and anxiety around the technological "radiance" of France, as analyzed by Gabrielle Hecht, Chandra Mukerji, and Sara Pritchard.²

The tower's stark, industrial look was daringly modernist in its time, and conservatives put up a legendary fight before Eiffel won. The tower has been heralded as a bold, futuristic precursor to architectural modernism's functionalist and abstractionist tendencies, and even a pre-skyscraper. As a leader in France's public works industry (bridges, construction, and rail-

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1. Gustave Eiffel, *La Tour Eiffel en 1900*.

2. Gabrielle Hecht, *The Radiance of France*; Chandra Mukerji, *Impossible Engineering*; Sara B. Pritchard, *Confluence*.

ways in particular), Eiffel rubbed shoulders with powerful politicians, financiers, experts, and engineers. His international reach touched the Statue of Liberty, the French colonization of Vietnam, and the ill-fated Panama Canal project under Ferdinand de Lesseps.³ Eiffel is emblematic of the Third Republic's commercial, political, and technological elites and their positivist, Saint-Simonean ideology. Eiffel's hard-won tower symbolized the social victory of these elites under the Third Republic and self-consciously promoted the fusion of science and industry cited by Theresa Levitt in her opening essay. As Levitt recently wrote in the pages of *T&C*, "France at the time was one of the most vibrant and high-stakes battlegrounds of the forces of modernity, and science was at the center of the fight."⁴

Railway development was crucial to the new Third Republic's national imaginary after 1870, when the Prussian railways outpaced the French, while the kaiser's army laid siege to Paris, in part by destroying railway supply lines.⁵ Eiffel's tower design effectively adapted materials and forms of railway bridge construction to this vertical setting: the tower's silhouette looks like the two halves of one of his iconic parabolic railway bridges tipped up on end and placed back-to-back. He also adapted railway communication to the vertical setting, wiring the tower for telephones, with remote terminals at regular intervals where engineers and workmen could plug in to communicate with coworkers far above or below for real-time information at a distance.⁶

When the next universal exposition arrived in 1900, many in Paris felt that the tower should not serve as *clou* again, although no new monument dominated the plans. Even the *métro*'s first line, which opened during the exposition, did not seem a sufficient showpiece.⁷ Eiffel responded in his 1902 book, which bid to maintain the tower's relevance by reinventing it, finding new and varied uses (meteorology, aviation) that went beyond mere symbolism and showmanship. Derek Vaillant's article in this issue details some of the tower's use for broadcasting in the era of the world wars.

The tower was also used as a convenient turning point in blimp flights. In our cover image, the blimp and the tower are linked as high-flying modern technological marvels. Flight had elevated French technoscientific radiance since the Montgolfier brothers, who are analyzed in Mi Gyung Kim's article in this issue. *La France* (1884) was the first successful, fully steerable airship (*dirigeable*). In these early years of aviation, just making a success-

3. David Biggs, *Quagmire*, 38–40; Jill Jonnes, *Eiffel's Tower*, 6, 62, 181.

4. Theresa Levitt, "Science and Technology beyond the Barricades," 377. For more on the ideology of French elites under the Third Republic, see Miriam R. Levin, *When the Eiffel Tower Was New*; and Levin, Sophie Forgan, Martina Hessler, Robert H. Kargon, and Morris Low, "Bringing the Future to Earth in Paris."

5. Allan Mitchell, *The Great Train Race*.

6. Eiffel, *La Tour Eiffel en 1900*, 165.

7. Richard Mandell, *Paris 1900*, 47.

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FIG. 1 Alberto Santos-Dumont's lightweight steerable airship rounds the Eiffel Tower. (Source: Gustave Eiffel, *La Tour Eiffel en 1900* [Paris: Masson et Cie, 1902], 263, fig. 51. Image courtesy of the University of Oklahoma History of Science Collections.)

ful flight from takeoff to landing was a feat, and France often celebrated *La France's* success as evidence of winning the air race against Germany. The airship pictured here is a so-called Santos, a smaller, faster, lightweight steerable blimp named after the popular and flamboyant Franco-Brazilian aviator-engineer Alberto Santos-Dumont, who made his first airship in Paris in 1898 and became a pop culture icon and flyboy hero.⁸

8. Richard Hallion, *Taking Flight*, 89–92. For slang use of the term *Santos*, see “Le Métro-Nécro.” Eiffel attributed this photo to the French aviation journal *L’Aéronaute*, which claimed it depicted Santos-Dumont’s flight of 13 July 1901, on the eve of Bastille

Much as the tower defined what it meant to be an urban icon, Santos-Dumont defined what it meant to be an aviator hero.⁹ In similar blimp races, especially in this era when aviation was often a spectator sport, using the tower as a turning point allowed the two artifacts to work together in creating a spectacle. Airships thus helped reinforce the tower's iconic quality. Both artifacts suggested verticality, technological prowess, and cultural value—which is why this photograph was so useful for Eiffel's defense and reinvention of his tower in 1902.

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Day; this flight was successful from takeoff to landing, but was not timed (see *L'Aéronaute*). Others have suggested that the image depicts Santos-Dumont's winning of the Deutsch prize, for a timed flight, on 19 October 1901. One trail of attribution leads to SI neg. no. 85-3941, "Santos-Dumont rounding the Eiffel Tower while in the process of winning the Deutsch prize on October 19, 1901," held in the archives of the Smithsonian Institution, National Air and Space Museum. Dating the image is complicated by its iconic quality: many contemporary photographs and illustrations copied this scene of Santos-Dumont's blimp passing the tower, and some versions claimed as July images may actually have depicted October (or vice versa).

9. Roland Barthes, *The Eiffel Tower and Other Mythologies*; William Thompson, "The Symbol of Paris"; Vanessa Schwartz, "Eiffel Tower."

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