



## **Reach for the skies. Aviation and urban visions: Paris and New York, c. 1910**

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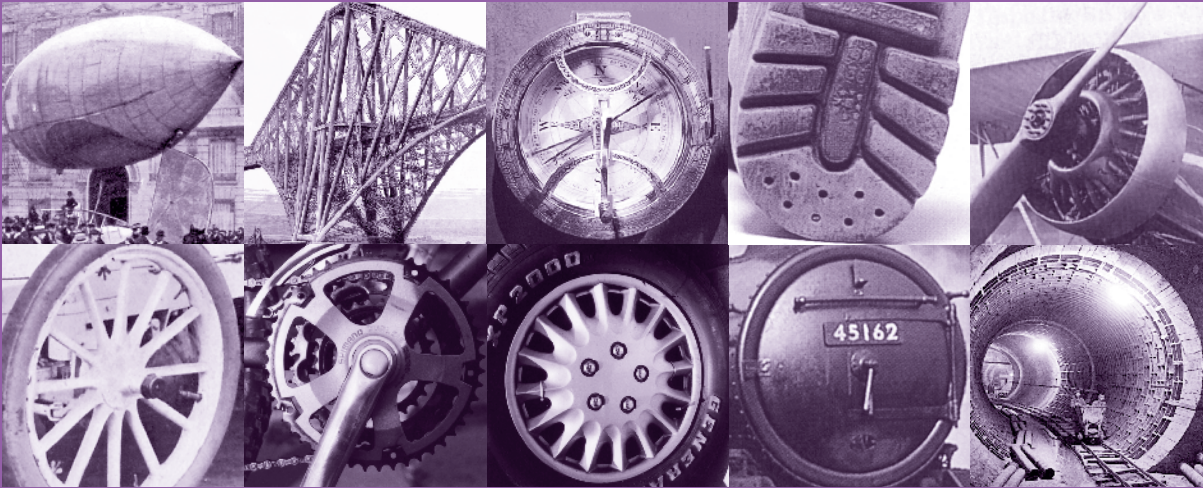
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# THE JOURNAL OF TRANSPORT



# HISTORY

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## Contents

### Editorial

Reach for the skies: aviation and urban visions, Paris and New York,  
*c.* 1910 *Natalie Roseau*

Both natural and mechanical: the streamlined designs of Norman Bel  
Geddes *Nicolas P. Maffei*

Real ambition or just coincidence? The Italian fascist motorway  
projects in inter-war Europe *Massimo Moraglio*

Travelling by staying at home: women in westcountry ports and their  
overseas connections in the nineteenth century *Helen Doe*

Water transport in the Industrial Age: commodities and carriers on the  
Rochdale Canal, 1804–1855 *Peter Maw, Terry Wyke and Alan Kidd*

### Museum review

### Book reviews



Manchester University Press



## Reach for the skies

### Aviation and urban visions: Paris and New York, c. 1910

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The rapid development of aviation at the beginning of the last century marked out the *Belle Époque* as a turning point for air conquest. In the space of just a few short years, thanks to repeated showcasing at large popular events and abundant coverage in the illustrated press, the aeroplane succeeded in firing the popular imagination. Despite the relative uselessness—at that stage—of the invention from an economic and social perspective, it stimulated a whole series of imaginary projections that were to emerge in different spheres.<sup>1</sup> In particular, aviation generated expectations as to what the cities of the future would look like. Exchanges of ideas, bolstered by developments in aviation itself, addressed future practices in air transport in as much as they re-examined and renewed contemporary conceptions of city planning. The crossover between air travel and city planning gradually led to the emergence of an imaginary ‘aerial city’. This article will seek to identify its earliest manifestations.

Two factors in particular account for the profusion of aviation-inspired urban images in the early years of the twentieth century. Firstly, popular imagination was already full of such images and only needed that elusive first flight to set it off. Long before the birth of the fixed-wing aeroplane, Albert Robida, Herbert Wells and Jules Verne had sketched the universe of airborne transport in futuristic terms that served not merely to entertain but to cast a critical eye on societal progress.<sup>2</sup> The first aeroplane flight catapulted these representations into the realm of the possible. The second factor was the lapse of almost forty years between the birth of fixed-wing aviation and its dissemination as a means of transport to a wider public. Put simply, aviation lacked an everyday, commonplace vernacular and hence a more spectacular imaginative form easily arose to fill the void.

This is an important point. Unlike the aeroplane, the automobile was soon relatively affordable—and therefore accessible—from its introduction: in 1910, 20,000 models of the Ford T were sold throughout the United States at a cost of less than \$1,000 each and the millionth Ford T rolled off the production line in 1915. The automobile was therefore a common sight in cities virtually from its invention, as was the presence of a public debate over its practical use.<sup>3</sup> In contrast, at the turn of the last century, neither

hot air balloons nor airships were part of the everyday transport landscape and, despite the major revolution of early controlled air flights, the aeroplane remained outside the scope of mass production. While the scepticism of the business and military communities accounts for these initial difficulties, the sheer novelty of the technology was also a factor. Unlike other forms of transport such as steamships, railways or the automobile, the aeroplane did not replace a technology that could be developed using existing infrastructures and rules. As Emmanuel Chadeau suggests, the aeroplane was in many ways an unnecessary invention.<sup>4</sup>

Nevertheless, the time lag between invention and dissemination was by no means bereft of major events. In the absence of any ready-made social utility, aviation cut its teeth at huge specially organised public events designed to bring it to the attention of as wide a public as possible. Aerial spectaculars already had a tradition of such showcases: for instance, 300,000 people witnessed the first successful ascent in a hot-air balloon from the Champ de Mars in Paris in 1783.<sup>5</sup> Later on, specially organised events were used to promote airships.<sup>6</sup> The organisation of the first air meetings in 1908–09 were therefore part of a long lineage.

The first section of this article will analyse the brief but intense series of large public air shows in 1909. Conceived as a sort of fairground attraction, they usually took place in large cities or on their outskirts and they had to employ certain devices to achieve the desired effect. Fairs, sporting events and air demonstrations were used to introduce aviation to the masses and relayed in the accounts that appeared in the illustrated press. The skill and heroism of the protagonists as well as the risks and crashes they endured all served to underscore the spectacular dimension of man's faltering entry into the flight era.

Secondly, this article will investigate the subsequent transformations that took place in city planning debates. The reality of flight and the media exposure of the heroic exploits appeared to take the visions of aerial cities from the realm of science-fiction and place them squarely in the domain of town planning professionals. This was accompanied by exalted dreams of freedom of movement beyond the constraints of terrestrial contingencies. Dreams of personal means of transport grew up alongside urban projects in which aircraft played a central role. There was a profusion of images depicting multi-level cities or city-regions consolidated by this new form of mobility: the city had taken off in pursuit of air conquest.

While such imagery has frequently been relegated to the realm of the phantasmagorical, this article will analyse it in terms of its determining components. As a challenge to the real world, it fed on the public imagination and helped define current social debate. When cities and aviation came together in this 'virtual' world, the result served to encapsulate various issues, and to renew perspectives. As such, it functioned as both a heuristic reference and a way of projecting desire.

The following account focuses in particular on Paris and New York, two pioneering cities in the domain of the conquest of the air which were more

emblematic than atypical. Indeed, one of the defining features of the history of air transport and the accompanying urban imagery is the significant international dimension of both the debate and the related representations. In Italy the Futurist movement appropriated aerial themes to redesign cities from different perspectives.<sup>7</sup> Russian Suprematists and Constructivists invented aerial cities and dreamed of abolishing terrestrial constraints.<sup>8</sup> Similar strands appeared in city planning discourses in various different countries, driven by the instantaneous relaying of exploits that were occurring in several different places. These were a testimony to the globalisation of the subject of the aerial city which has continued unabated ever since.<sup>9</sup> However, although transnational similarities in reflections concerning aerial cities were mainly down to the global dimension of aerial mobility, differences also existed. While city planners on both sides of the Atlantic greeted the aeroplane with equal enthusiasm, they projected different visions of aerial cities. Aviation provided not merely an opportunity for analysing the future of the cities over which they would fly; it also served to highlight the intrinsic qualities and chronic crises of those same cities.

### **The ‘spectacle of flight’: changing perspectives**

In the nascent phase of air travel, inventors were locked in an intercontinental contest.<sup>10</sup> The fierce rivalry and support of a small number of patrons who had been won over to the cause of heavier-than-air travel, enabled progress to be made and obstacles to be overcome in a remarkably short time. However, technology remained fairly rudimentary and convincing the business community or the army of aviation’s usefulness.

The small circle of aeroplane inventors sought to promote their new creations as a way of obtaining the funds that would enable them to continue their research and to secure patents for the techniques they had developed.<sup>11</sup> Their quest for public recognition was to bring them into contact with people who were looking for popular attractions and seeking to promote new activities or spice up national festivities. The very idea of air flight held the press and the public in thrall, as did the figure of the Renaissance-line aviator who was scientist, constructor, athlete and hero all rolled into one. The ideas of challenge, novelty and record-breaking appealed in particular to the sports press which first relayed the exploits of the aviation pioneers.<sup>12</sup> By describing their amazement at what they had seen, the papers aroused their readers’ interest as well as their frustration at not being able to witness first-hand the realisation of Icarus’ dream.

Air shows subsequently took on a variety of different forms: flights over major cities, races, theme weeks or air meetings. Their main purpose was to demonstrate the progress of aviation through tying it to the launch of a particular season or anniversary celebration. Shows were frequently organised so as to provide access for the greatest possible number of people and were also covered extensively in the press.

The year 1909 marked a turning point, and several milestones were achieved in its last six months. While the most important of these was undoubtedly the crossing of the Channel by Louis Blériot on 25 July, records were also broken for speed, altitude, distance travelled by an aeroplane and the first passenger flights. Meetings became platforms where the public could witness live exploits—and sometimes the ensuing accidents, which were also in a way part of the attraction. In August the first international flying week was organised in Bétheny, France, and was followed by large meetings in Berlin, Cologne and Brussels. Several hundred thousand people visited these shows, illustrating the public's enthusiasm. The first International Aircraft Exhibition opened in Paris on 25 September. A few days later, Wilbur Wright's flights over the city of New York were front-page news and in October the Comte de Lambert's flight around the Eiffel Tower was witnessed by admiring Parisian onlookers.<sup>13</sup>

Large popular gatherings took place in cities or their outskirts on sites lent especially for the occasion by local authorities. The air meeting in Juvisy which opened on 23 May 1909 inaugurated a series of important shows. France's first aerodrome, Port Aviation, received high praise in the media. 'As if by magic,' as one commentator noted, 'spacious comfortable stands, hangars, restaurants, bars, a repair workshop and an entire town have sprung up at Port Aviation.'<sup>14</sup> Many such sites evolved into autonomous centres of activity. Between June and mid-August of that year, in preparation for the first International Aeroplane Meeting at Rheims, facilities were rapidly deployed at Bétheny to welcome the large crowds of expected visitors. Modelled on circuses and race courses, Aeropolis embodied a whole new dimension of aerial spectacle.<sup>15</sup>

Witness accounts give some idea of the thrill of the events that unfolded at Bétheny: the intensity of the hazardous new feats, the mesmerising hold they had on the crowd and the exciting sideshows.<sup>16</sup> On 24 August 100,000 visitors turned up in one day. The presence of the President of the French Republic, Armand Fallières, and the President of the Council of Ministers, Aristide Briand, along with several Ministers and legions of personalities, ambassadors, foreigners, academics, only served to heighten the excitement. The flights that would take place in New York were also to be an important turning point. As part of the Hudson–Fulton celebrations to be held at the end of September 1909 to mark the three hundredth anniversary of the arrival of Henry Hudson in the port of New York, the organising committee asked the Wright brothers and Glenn Curtiss to mount an air demonstration for the occasion. Apart from the meeting of flotillas from the US, French, British and German navies on the river Hudson, the city's anniversary featured some surprise attractions: a fireworks display and one of the first urban lighting displays using the marvels of electricity. Against this backdrop, air flights were perceived as the latest progress in the domain of transport. The initial proposal had been to hold a series of races. However, Curtiss backed out, owing to unfavourable winds. This left only Wilbur Wright, who took to the air three times on 29 September 1909. The second flight was by



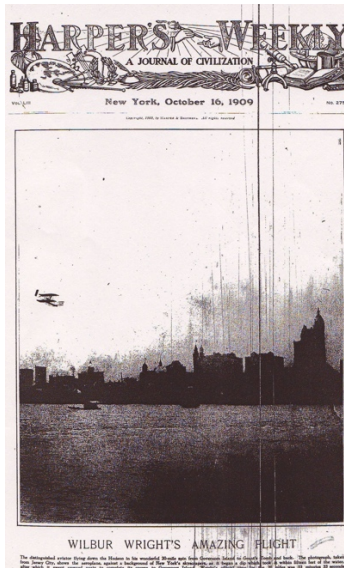
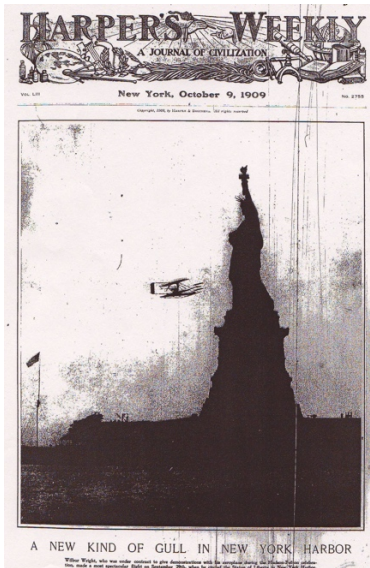
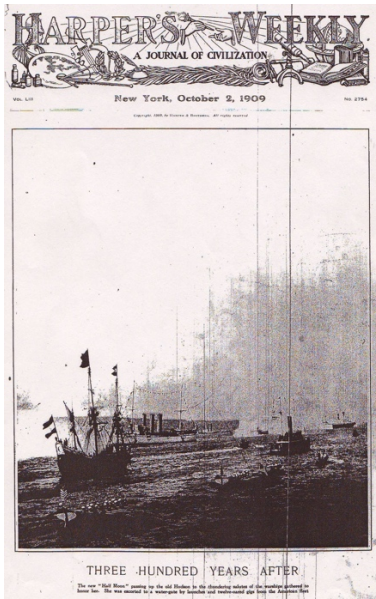
far the most spectacular. The aviator flew up the Hudson, over the assembled steamboat flotillas and around the Statue of Liberty before returning towards Governor's Island. The entire flight lasted only five minutes but the impact was enormous. One million people had witnessed the exploit. Media reports suggested the excitement of the crowd reached fever pitch as Wright's plane rounded the emblem of the city just as the assembled masses feared that he would crash into it.<sup>17</sup> The newspapers rushed to bring out special editions and the major New York dailies posted Wright's exploit on the front cover.<sup>18</sup> In the search for a suitable historical and geographical perspective, subsequent articles also analysed the new possibilities for mechanical locomotion and air transport.<sup>19</sup>

An iconographic analysis of the celebrations in the New York press bears out the importance of Wright's exploit. Photographs on the front covers of the dailies showed the aeroplane over the Hudson silhouetted against the Manhattan skyline or skirting the Statue of Liberty, thus reflecting the sense of amazement. This is also apparent in the manner in which *Harper's Weekly* magazine covered the celebrations by featuring them on three successive cover editions. The first, which came out before the event, depicted the boats and steamships but the two subsequent covers were devoted exclusively to Wright's flight. The meeting of the naval flotillas on the Hudson, initially intended to be the star turn, was ultimately upstaged by Wright's prowess.<sup>20</sup> (Figure 1.)

These 'shows' have to be set against the backdrop of the emerging mass media, which played a huge role in sensationalising the events. Sometimes it was the specialist magazines and dailies themselves that organised the meetings or races. Given the public's enthusiasm for such events, the organisers could be reasonably sure that they were on to a good thing.<sup>21</sup> Moreover, the emerging illustrated press was a powerful vehicle for relaying aviation exploits and showcasing the conquest of the skies for a wider public. Aerial events generated novel ideas in newspaper design. Innovative ways of representing news emerged which transformed page layout and viewpoints. Photographs were splashed over double pages, or placed one over the other, collage-style, thus illustrating either the simultaneous or discontinuous nature of events. It also heralded a reversal of the respective roles of text and image, as photographs were usually accompanied by comments in print. New points of view appeared as aerial exploits encountered new photographic techniques—the idea was to recreate the sense of thrill and to capture the big event.

The French photographer Léon Gimpel is particularly noteworthy. Firstly because he attended numerous events and took reams of photos that subsequently appeared in the press. Secondly because the way in which he constructed his photographs opened up whole new perspectives. Whereas most shots were taken from below, on the last day of the air week at Bétheny, Gimpel went up in an airship and photographed the aircraft from above, along with the mesmerised gaze of the crowd. (Figure 2.) The immediacy





**Figure 1** The coverage of the Hudson–Fulton Celebrations in New York by *Harper's Weekly*. (a) 'Three hundred years after', 2 October 1909, p. 1. (b) 'A new kind of gull in New York harbor', 9 October 1909, p. 1. (c) 'Wilbur Wright's amazing flight', 16 October 1909, p. 1



**Figure 2** Léon Gimpel, coverage of the week-long Bétheny air show by L'illustration magazine, 4 September 1909, pp.162-163 (a) 'Above a Voisin biplane which has just circled a pylon'; (b) 'The stands at Bétheny as seen by Hubert Latham from a height of 150m'.

of the pictures and the change in the focal point, showing both the flight itself and the crowd, renewed the panorama and helped to change perspectives. With its customary 'first with the news' pitch, *L'illustration* magazine published Gimpel's photos at once. 'After showing aeroplanes as they appear to spectators, we wanted to turn things around and get the same view as the aviators themselves.'<sup>22</sup>

The aviation displays were major events in terms of the excitement they generated, the media coverage and novel imagery. The architect Le Corbusier was among the enthusiasts who flocked to these meetings. In 1941 he recalled the general amazement at the Comte de Lambert's flight around the Eiffel Tower on 18 October 1909. The aviator had left Port Aviation and headed for the city, where he flew just a few hundred metres above the tip of the Tower, before encircling it and heading back to Juvisy (Port Aviation). Le Corbusier recounted the surprise appearance of aircraft in the Paris sky:

From my student apartment on the quai Saint-Michel I heard a noise that resonated throughout the Paris sky for the first time . . . The Comte de Lambert had succeeded in 'taking off' from Juvisy, heading for Paris, and flying around the Tour Eiffel at an altitude of 300 m. It was unbelievable! Our wildest dreams had become reality. Paris that evening was a place of great joy.<sup>23</sup>

It was not simply what was actually seen that was remarkable. The manner in which it was 'showcased' also enhanced the originality of the flights. Firstly, the meetings brought the crowd together to witness a communal experience which was then relayed and amplified almost instantaneously in the press. The flights themselves—or the resulting accidents—were witnessed live. The newspaper articles and accompanying photographs also lent a sense of immediacy to the whole thing. Secondly, races and challenges blurred the manner in which man interacted with his surroundings, generating both suspense and admiration for the performances in equal measure. While they transformed the aviator into an athlete and 'demigod', they also created an impression of proximity bound up with the ease with which Wright had flown his aircraft. The first flights with passengers on board, which were vital in proving the universal potential of air travel, also helped to bring home the idea that the skies were within the reach of all.

By bringing large crowds face to face with novel air displays, the events hovered between the real and the unreal and gave rise to new modes of representation. Innovations also generated new perceptive models that reinforced this effect of 'derealisation'. At air meetings the facilities were generally composed of enormous makeshift stands opening on to large fields, and they created a new kind of distance between the spectators and the aviators. The change in perspective provided by Gimpel clarified and showcased the event and offered a new visual perspective taken up by *L'illustration* and the popular dailies,<sup>24</sup> which were in thrall to these spectacular images. Gimpel's photos were seen by millions of readers.

On the other hand, no specific infrastructure was built to cater for Wright's New York flights. Rather, the entire city was commandeered: parks, islands, quays, rooftops. The aviator toyed with the city's most emblematic landmarks in order to both challenge and tip his hat to them. Rivers, monuments, the skyline and all of the metropolitan symbols were requisitioned, taking in the full length and breadth of the city. Thus, in the course of the celebration of the discovery of New York three centuries previously, conquest of the skies was transformed into a conquest of the very essence of the city and its symbols.

While these gatherings were unsurpassed in terms of both the collective thrill of witnessing the accomplishment of a millennium dream with brio and the reversal of the roles of man and nature, they were also set apart by their sheer scale and their absence of limits. They took place at a time when urban boundaries were being largely redefined. In New York, new limits had been reached with the opening of Brooklyn Bridge in 1882 and the expansion of Greater New York in 1898. Wright's exploits served to redefine the city's contours once more, consolidating the whole and enlarging the scale and perception of the metropolis. The city now reached from end to end, out to the horizon and up to the sky. It had to be able to welcome immense crowds into its midst. Consequently, new resources were requisitioned: open spaces, islands and rooftops. In France, limits were to be redefined in a different—more territorial—manner. A number of major aerial events took place outside the city leading to the creation of a whole universe with new boundaries, rules and facilities which also renewed the link between centre and periphery. In both cases, the urban framework had to change and reinvent itself to adapt to the new dimensions required by air shows.

### **Aviation and the city: from anticipation to projection**

Alongside these air shows, aviation practices and techniques raised new questions, especially the issue of flying over land and built-up areas.<sup>25</sup> The issue of aerial mobility was introduced into debates over the future of cities. Aerial visions—frequently inspired by contemporary science fiction—began to fuel contemporary urban professional discussions. Town planners who had previously had little interest in the 'winged city' began to seize upon the subject. Major figures emerged, notably Eugène Hénard in Paris and Harvey Wiley Corbett in New York, who were at the forefront of the development of their cities and reflections on city planning.<sup>26</sup>

By creating the Musée Social, Eugène Hénard became one of the founders of city planning as an academic discipline. Hénard was an architect and civil engineer for the City of Paris and the author of *Etudes sur les transformations de Paris*, a series of eight prospective sketches of major city planning projects for the French capital. He had been interested in aeronautics from a very early stage. In 1904 he fought to preserve the Galerie des Machines and the Champ de Mars, coming out in favour of a policy of pre-emptive city planning.



The Galerie des Machines, along with the Eiffel Tower, had been designed as one of the centrepieces of the Great Exhibition of 1889. Siegfried Giedion described its breathtaking dimensions, giant glass panes and ‘vague and immaterial’ roof as ‘an unprecedented victory of architecture over matter’.<sup>27</sup> However, the municipal decision makers wished to tear it down to make way for residential property on the Champ de Mars. The opponents of this alienating development proposed a number of solutions that would make use of the building and harness its potential. Hénard proposed to transform the site into a mooring ground for large airships. Under his scheme, the Galerie des Machines would be used as a hangar and the Eiffel Tower as a signal tower. Terraces and viewing stands would straddle the perimeter of the Champ de Mars, which would also be used as a race track for automobiles. A sports complex known as ‘Parc de la tour Eiffel’ would be built, complete with cafés and sideshows. On an even larger scale, Hénard would design two runways at opposite ends of Paris—one at the Parc de Clignancourt, the other in the Parc de Saint Antoine—both equipped with huge metal hangars and 300 m towers. By seizing on aviation as a means of saving the Galerie des Machines and the Champ de Mars, Hénard intended to provide the metropolis with wide open spaces to be used as a forum and meeting place for inhabitants or as a location for large exhibitions.<sup>28</sup>

In 1910, at the International Town Planning Congress, held in London, Hénard dealt again with aeronautical issues. In a paper entitled ‘Les Villes de l’avenir’ (The cities of the future) he outlined a vision of future cities in which aeronautical considerations were foremost.<sup>29</sup> Air travel was used here in a dual sense. Firstly, in real, concrete terms, Hénard referred to the experiments and exploits then taking place. Concerning aerial bearing points or controlling aircraft landing: ‘The races held at the Circuit de l’Est in France in August this year have shown that what aviators need most in order to guide their aircraft are points of reference.’ At the same time, aerial mobility was considered to be part of the near future:

However, as man has just learned to imitate a gliding bird, it is by no means impossible that he will soon be able to imitate an insect. In *War in the Air* Wells predicted ‘a small, practical craft, easy to operate and drive and rather like a bee’. I could not defer to a greater authority and I unhesitatingly accept this tempting prospect.<sup>30</sup>

Hénard adopts an optimistic interpretation of H. G. Wells’s novel to conjure up a fantastic future world of individual garage-elevators designed to take both automobiles and aeroplanes, and landscaped roof terraces that double up as landing pads. While we are initially seduced by this idea, Hénard also uses the aerial vision to bolster his hygienist arguments and support his conception of city planning in terms of separate and superposed functions. The talk then moves on to focus almost exclusively on aerial matters. Hénard depicts the cities of the future as being designed around air travel and structured by a system of rings. The nature of air traffic would determine

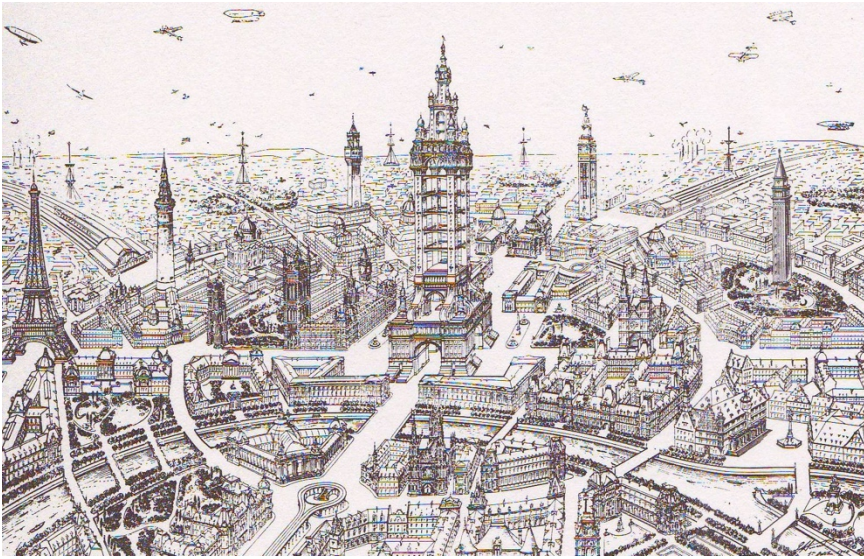
customary practices, based on the different categories of aircraft. New virtual enclosures complete with signal towers or aerial buoys would be used to mark out boundaries and serve as bearing points for aviators. Roof terraces or mooring masts would form the contours of the new urban architecture:

When this progress is achieved, the physiognomy of cities will have changed: all terraces will become landing surfaces for aerial automobiles. We will be able to take off from one terrace and land on another. This will require each building to be equipped with a system of lifts [. . .]. The cities themselves will probably have to be divided into three zones: the first sector comprising the central core with the major edifices, historical monuments, museums, theatres, etc. All aircraft will be banned from flying over this sector. The second will contain most of the more modern houses and buildings, overhung with reinforced roof terraces to withstand the bulk of light aircraft. Only the 'bee-like' aircraft will be authorised to fly over the second sector. The third sector—freely-accessible to all aircraft—will contain the runways for the large 'bird-like aircraft' and heavy craft.<sup>31</sup>

'Les Villes de l'avenir' gives substance to the ideas that Hénard developed, particularly in *Etudes pour les transformations de Paris*. In these works, proposals are not based exclusively on aerial considerations; some of them had been developed to facilitate the development of the automobile.<sup>32</sup> However, although it did not come up with anything that was really new, 'Les Villes de l'avenir' sheds light on Hénard's vision of city planning. Thus the final illustration brings together the system of rings, parks, roads radiating out from a central point and virtual lines linking the new towers and systems of mobile platforms. (Figure 3.) The text also condenses Hénard's ideas by handing air transport the starring role even though it was of no more importance in the various systems proposed than the automobile or the metro. We fully understand this inversion only at the end when Hénard compresses past, present and future:

The profound revolution in thought generated by aviation is so powerful and opens such enormous perspectives that all manner of dream is possible. Air conquest will usher in an era of peace and wealth. The cities of tomorrow will be easier to transform and to embellish: their magnificent towers will welcome giant birds from all points on the horizon and perhaps, in time, the major capitals will build their beacons closer and closer to the stars.<sup>33</sup>

Thus, according to Hénard, the transformation of cities based on air conquest legitimised the ideas then under study and, by bringing together a multitude of references, crystallised a new urban vision. Hénard had turned a corner between the Champ de Mars and the *villes de l'avenir*. Whereas he drew on aeronautical experiences to defend the integrity of the Champ de Mars, six years later he was advocating an entire approach based around



**Figure 3** Eugène Hénard, 'Une Ville de l'avenir vue à vol d'aéroplane', in 'Les villes de l'avenir', *L'Architecture*, 13 November 1910, p. 387.

air travel: the uncertain future had become a future that needed to be constructed, and the hypothetical unreal world had entered the realm of the possible. The progress achieved in aerial technology and revealed to the general public was transferred by means of the transition from anticipation to projection.

### **Flight from the city: the birth of a parallel space**

The American example is also symptomatic of this dual influence on the way in which cities were represented. In New York and Chicago, faced with increased urban congestion, city architects began to examine the possibility of a built environment differentiated by height intersected by networks of suspended thoroughfares that would make it possible to stack several 'strata' of buildings.<sup>34</sup> The magazine *King's Dreams of New York* also provided the public with fascinating images of the New York of the future. In 1908 and in 1911 it published two drawings entitled 'The cosmopolis of the future' and 'The city of skyscrapers'.<sup>35</sup> They depicted the contemporary problems of metropolitan traffic congestion and amplified them by filling the sky with aircraft: airships in 1908 and aeroplanes in 1911.

The first drawing, created by Harry M. Pettit, stressed the saturation of existing space by enormous crowds of pedestrians and motor vehicles. The sky is chock-a-block with airships displaying far-off destinations. On board,

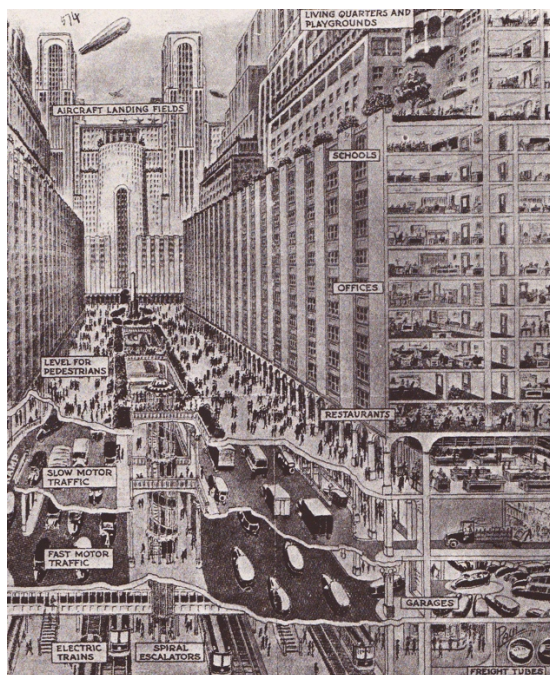




**Figure 4** (a) Harry M. Pettit, 'The cosmopolis of the future', *King's Dream of New York* (1908), p. 1. (b) Richard W. Rummel, 'Future New York is pre-eminently the city of skyscrapers', *King's Views of New York*, 1911.

groups of passengers are docking at the highest skyscrapers. However, Pettit roots his drawing in essentially land-based or maritime imagery: bridges, gangways and the masts of ships, with the river Hudson appearing in the background. In the next drawing Richard W. Rummel leaves out any reference to the river. He portrays order and rationality and appears to counteract the chaos that has taken hold of the city. However, it is really the way in which traffic is depicted that has changed significantly. He sketches a system of horizontal strata, from the highways to the aerial Metro and the sky laden with aircraft. Rummel reflects the swift progress made in aeronautics by replacing the enormous clumsy airships with light planes. But what is really significant is that air space has become a parallel domain, independent of the land-based urban *milieu*. Moreover, the crowds of pedestrians and passengers have disappeared. The drawing prefigures the machine-based age. The crowds that Pettit depicted in such numbers, swarming around the tops of the skyscrapers, have been replaced by land- and air-based vehicles, each following its own parallel and separate itinerary. (Figure 4.)

Harvey Wiley Corbett was a professor at Columbia University and a partner in one of the major New York architect firms, with a passionate interest in aviation. He also conceived a number of projects that sought to



**Figure 5** Paul, 'How you may live and travel in the city of 1950', c. 1910.

Source Archives of Harvey Wiley Corbett, Drawings and archives, Avery Architectural and Fine Arts Library, Columbia University, New York

provide rational solutions to the consequences of urban congestion: absence of sunlight in the living 'jungle' of early Manhattan; gridlock bringing entire streets to a complete halt, etc. However, far from seeing such problems as obstacles, Corbett turned these realities into essential prerequisites for the transformation of modern cities, consolidating urban functions into a superblock, superposing different urban strata and separating traffic flows in perhaps a metaphor of modern-day Venice. Corbett advocated a 'metropolitanist' approach to city planning and sought to tackle hyperdensity from a number of different angles.<sup>36</sup> Paul's drawing 'How you may live and travel in the city of 1950' (Figure 5) lent these concepts a new edge and also developed this idea of superposed, autonomous spaces. Terrestrial mechanical systems, pneumatic tubes and electric trains have all been pushed underground. Urban functions, housing, recreation areas, schools, offices and restaurants were all superposed vertically above ground. Right at the top, a roof platform looks down on to a skyscraper bearing the legend 'Aircraft landing fields' and containing a group of aeroplanes ready for take-off.<sup>37</sup>

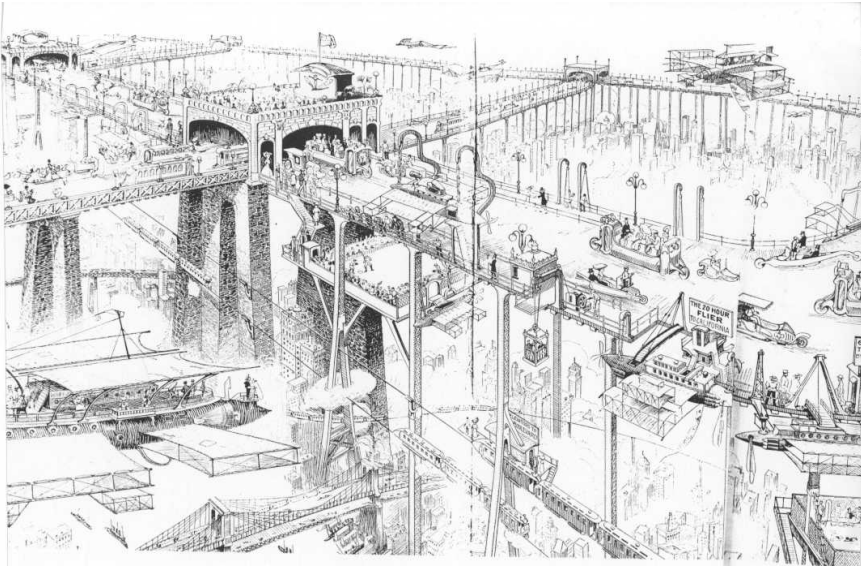


**Figure 6** Farr, 'In the year 2000, saying it with architecture for the tourists', c 1910.  
Source Archives of Harvey Wiley Corbett, Drawings and archives, Avery Architectural and Fine Arts Library, Columbia University, New York

The illustrator Farr, who was also a New York-based artist, much appreciated by Corbett, turned the perception of cities on its head by revealing rooftops as the new urban space.<sup>38</sup> In a light, humorous vein, his drawing 'In the year 2000, saying it with architecture for the tourists' (Figure 6) depicted new urban practices. Roofs and rooftops, which serve as entrances, living quarters, signposts, uninterrupted networks of platforms and gangways, have become the city's new ground level. Everything below, including the streets and the river, has disappeared. Similarly, the spectacular, futuristic vision of New York published in 1910 by the cartoonist Harry Dart in *Life* magazine offered new urban perspectives (Figure 7). The upper city is alive with aircraft and looks way down on to Manhattan far below. The drawing reveals new perceptions and uses, as well as new frontiers.<sup>39</sup>

These drawings must be placed in the context of the debates taking place over the future of aerial mobility. Indeed, in the same way as Robida had designed Parisian high-rise buildings for air cabs, roof terraces were conceived of as the ideal support for 'airport platforms'. In 1913 an article





**Figure 7** Harry Grant Dart (Harry Grant), 'What's to hinder?' *Life* (1910), reproduced in Joseph Corn and Brian Horrigan, *Yesterday's Tomorrows: Past Visions of the American Future* (Baltimore MD, 1984), pp. 4–5.

published in *Outlook* magazine presented an idealised vision of future cities driven by the forthcoming aeronautical revolution which would, for example, turn Florida into a sort of winter Coney Island for New Yorkers. A special air police would have to be set up. The author used maritime imagery to develop a *modus operandi* for 'atmosphere navigators'. In a more pragmatic vein, the article also sketched the future architecture of these cities: 'New buildings will be constructed to meet the special requirements of the aviator. In the metropolis of the future, neighborhoods in which structures are of approximately equal height will be covered by single roofs, each perhaps a square mile in area or more.'<sup>40</sup>

This collection of New York images portrays air-based transport as a vector for urban transformation. While the systems depicted are not specifically air-based, the advent of aviation helped to clarify them. Rooftops serve as new urban spaces and network systems, gateways and signposts and architectural crowning achievements. They bring together a certain number of ideas conceived of elsewhere: superposition of traffic and roads, autonomous dedicated traffic systems, bridge-buildings and skyscrapers that condense metropolitan lifestyles, thus forming part of the emerging conception of modernity.

### **The aerial city as narrator of the future**

Two points in particular stand out in the foregoing account. Firstly, aerial imagery and the nascent mechanical conquest of the skies combined to make the mass outdoor air meetings and flight demonstrations a resounding

success. This was accentuated by the manner in which they showcased certain cities and used the mass media to relay and amplify the events that took place. Such 'showcasing of reality' also had a dual impact. It generated massive collective excitement and reactivated latent dreams deep down in the collective subconscious by presenting such feats as achievements.

The second point concerns the defining moment that these events appeared to herald in terms of the representation of urban space. The dreams that were lived out in public and relayed by the media turned perception on its head. This was literally the case with Gimpel's photographs taken from above an aeroplane or Farr's drawings showing the rooftops of New York way down below; or metaphorically with the radical change in perceptions of visionary city planners who seized on these exploits to renew urban representations given an even more utopian dimension by conquest of the air. The metaphor of 'flight from the city' was physically embodied in a parallel *u-topos* that became a reality thanks to aviation.

By handing air transport the starring role in their conception of the cities of the future, pioneering city planners harnessed the popular enthusiasm for the subject to defend their planning proposals. On the one hand, the 'aerial vision' tapped into a certain number of leading-edge city planning concepts which, although not specifically air-based, espoused the same values: future, conquest, clarity. On the other hand, by making air travel part of the bigger picture, they transformed perspectives and revealed a whole new urban vision. The aerial city served to both legitimise and renew, and triggered a dual transformation process whereby it both captured and inverted existing concepts and used the ideas dreamed up by city planning pioneers to tell the story of the city of the future.

Changes of emphasis in Hénard's work between 1904 and 1910 are a good illustration of how developments in aviation and city planning were taken up and used by city planners themselves. Hénard used the newness of aviation to resolve all sorts of previously identified issues in his paper 'Villes de l'avenir': terrestrial congestion, the need for open spaces, and the dearth of any urban or territorial planning structure. Furthermore, by catalysing a certain number of key models in Hénard's work, the aerial vector came to constitute the backbone of his approach. Progress in conquest of the air was anticipated by science-fiction writers and served to lend credence to Hénard's thesis by rationalising a discourse that was not obviously coherent for everybody and clarifying the bold direction that he had taken.

After Léon Gimpel snapped the Bétheny air show he continued photographing crowds and urban congestion from above, thus helping to make sense of urban conditions that had previously been only vaguely understood. The photographer's audacity generated a whole new domain of visual representations. Similarly, the New York *avant garde* used aerial shots to change visual perceptions and offer new urban perspectives.

Clarification and projection appeared to go hand in hand as far as aerial imagery is concerned. Making sense of the city is almost always accompanied by the power of projection, thus confirming the 'vectorial power' of aerial

imagery as posited by Gaston Bachelard.<sup>41</sup> This new-found clarity, coupled with the irresistible urge to project, means that the relationship between the aerial city and its city of reference is akin to a game of mirrors. Instead of standardising thinking, the capture of technology by cities tends to produce different models of appropriation at local level which accounts for the narcissistic relationship between the aerial city and its 'boarding port' down below. In his vision of a city organised into concentric zones, Hénard projected a territorial deployment for the Paris metropolis. However, the New York 'metropolitanists' focused on aerial mobility to conceive of an 'upper city' superposed on the existing one and contributing to an ever denser urban substratum.

In this early creative phase, Hénard, Corbett, Farr, Paul and Dart were the precursors of a growing movement. The imagery of the aerial city thrived on the severe economic and urban crises of the 1920s. Although airfields, aerodromes and *Flugfelden* were being built to accommodate aircraft, hangars and pilots, the emergence and dissemination of a transnational debate over the city as a space likely to be recast by this emerging form of mobility also produced a whole new set of references. The profusion of images of aerial cities, and the relative absence of the airport issue in city planning debates during these early years, may be explained by the persistence of the 'personal aeroplane dream' as numerous observers thought this would become a reality, and did not yet conceive of a specific collective infrastructure. The images and discourse as well as the models and experiments all emerged during this 'formative period'.<sup>42</sup> Indeed, the forging of such visions was not unrelated to the concepts that would subsequently be used to develop major international airports.

Such links were to be all the more marked in so far as some of the visionaries who conceived of aerial cities were inspired by the pre-war pioneers and became key players in the construction of city airports. This urban imagery ultimately appears to constitute a determining link in the material construction of the infrastructure both in terms of collective social representations and in moulding the early experiences of the key actors.<sup>43</sup> Our analysis of the emergence of the idea of the aerial city at the beginning of the last century shows that the crossover between aerial mobility and city planning ultimately catalysed expectations in relation to the city of the future and produced new creative opportunities.

## Notes

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