

Introduction

Spotting the Spot

Flying over Colorado, looking out of the window, I compare the topography below with the seatback screen map, trying to better understand what I am seeing. Such screens are dwindling, becoming an obsolete form of aerial vision. I remember the first time that I performed this cartographic cross-check. Thinking back over other aerial firsts that transpired during the years that went into this book, four scenes come to mind.

Chicago, 2009: A father and son take the elevator more than one thousand feet up to the top of the Hancock tower. There, the boy looks out of the window at the city below. He suggests to his father that the city they are looking at is a fake, a scaled miniature.

Oakland, 2013: A consumer drone flies over the city. At first, it is assumed to be an airplane, but its unusual size and unfamiliar rotor buzz prompts many to look up and gaze at the new machine. Some stop in their tracks.

Lille, 2014: A historic scale model of the city is on display. Locals examine the exhibit, and struggle to reconcile it with the digital maps on their phones. Even the cardinal directions are difficult to orient.

Stanford, 2016: A student tries a virtual reality headset for the first time in the library. The immersive scene aims to replicate the experience of peering off of the open roof of a skyscraper. She becomes dizzy, and stumbles.

The aerial view, and the media that offer this vision, is in the zeitgeist. People are having their first experiences with virtual reality simulations of flight; with drone's-eye views, both recreational and martial; and with the

scalar play of Google Earth. This all seems new. But this impression of novelty is misplaced.

The aerial view was widely democratized in the nineteenth century, prior to commercial flight, prior even to widespread photographic circulation. There were devices—cartographic devices—that aimed to simulate this elevated view for a mass audience. Panorama paintings that reproduced a view from a great height; immense, miniature models of cities that circulated as proxies for a balloon view; filmic simulations of flight; observation rides that provided slow-moving aerial views of cities; and many others besides.

These media had many of the trappings and appeals of urban cartography (scaled, systemized, and symbolic representation), but none of a map's most common offering: wayfinding.¹ Instead, within these topsy-turvy aerial viewing apparatuses, new cartographic attributes emerged: scale shifted erratically, time seemed to slow, and the map's legend was rewritten. Over the long nineteenth century, these media toyed with the norms of cartography. A fundamental change in the connotations and appeals of the aerial view occurred, as a contemplative form of scrutiny (patient analyses of static urban scenes) gave way to a ludic glance (disorienting glimpses of moving urban scenes). From observation to intoxication: this was mechanical objectivity made giddy by height.

The aerial vignettes that began this introduction are contemporary examples, but typical of historical adaptations to new technologies. They include the human reactions of disbelief, surprise, disorientation, and giddiness. Such terms run contrary to the present understanding of the aerial view, around which floats a word cloud of menacing efficiency: rationalizing, clarifying, administrating, threatening. The aerial view is too simply understood as a transparently authoritarian viewpoint, one best made use of in planning and war, one that offers the information required to render massive change on the ground below, be it transformative or destructive. This has a certain historical credibility, especially if thinking of the aerial view from the First World War onward, as is the custom, and especially now, when the arrival of drone warfare has transformed the perception of the aerial view. The problem with the drone telos is that the history of aerial vision becomes only an index of bombing, death, and disruption, a record book of original sin. When taking a longer historical approach, the aerial view has altogether different qualities, and not at all clarifying ones. In this book, I turn the common assumption of the aerial view on its head, beginning with the historical public, joining them in their gaze, and trying to understand what they were seeing.

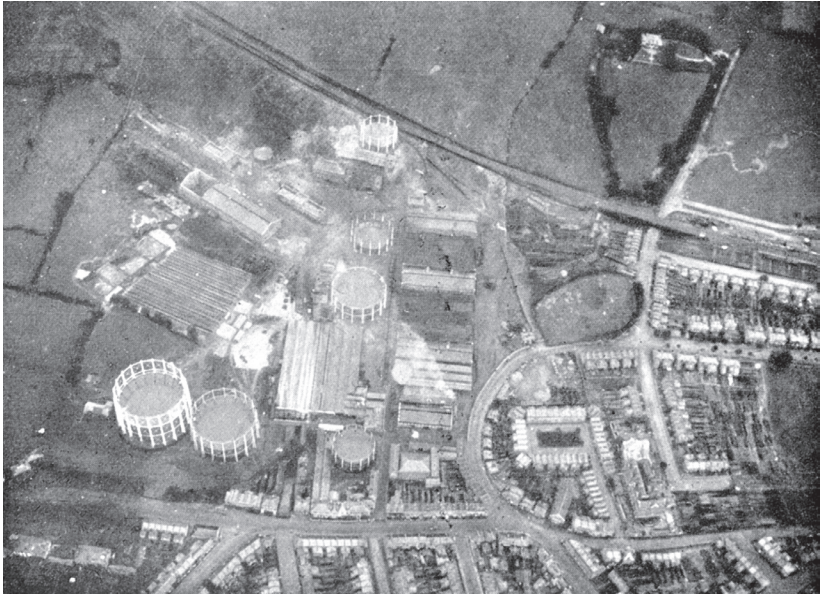


FIGURE 1. The pictured location is the Crystal Palace. "Spotting the Spot," *Ballooning and Aeronautics* 1, no. 1 (January 1907), 132. Wolfsonian Collection.

What they were seeing was not at all clear; visibility was hazy. Writers in the nineteenth century were under no illusions about the opacity of the aerial view. They recognized, for instance, that the interpretation and site recognition of bird's-eye-view photographs, even familiar ones, posed a challenge. The journal *Ballooning and Aeronautics* even had, in the early 1900s, a "Spotting the Spot" competition, in which it would publish an unidentified "bird's eye view each month for the purpose of testing the geographical knowledge of aeronauts, and of those who, although not yet as balloonists, can form a mental picture of what certain localities would look like if seen from above."² The editors recognized that such an image did not offer knowledge up to the viewer; that such views were seldom obvious; that they required study; and that they were, per the premise of the game, opaque.

FIRST PRINCIPLES OF THE AERIAL VIEW

The opacity of the aerial view was likewise known to early balloonists and balloon photographers. It is only after the World Wars, and with the immense interpretative apparatus that was fundamentally conjoined to military aerials, that historians came to see the aerial view as per se clarifying, if not

menacing.³ These decades marked a sea change in the understanding of the aerial view. There has since been a tendency to assume that all aerial views have the same type of utility. They do not. When such a view is not measuring anything—as most views, historically, have not—its utility is reduced. Other concepts were at work.

Here, I propose five forgotten *first principles of the aerial view*. Non-exhaustive, they nevertheless include the major thoroughfares of aerial thought in the nineteenth century. These principles will be mobilized throughout this book as tools for better understanding the aerial view.⁴ They are drawn from the literature of the early balloonists, who were the first theoreticians of the aerial, although these emblematic principles will be located in many other sources in what is to come.

Doubling as treatise and manual, the “literary flight technology” of the early balloon account was a plentiful textual genre.⁵ Beginning in the years immediately following the Montgolfiers’ 1783 flight in Paris, a great number of books in this area were published, from *Détails des deux voyages aérien d’après la découverte de MM Montgolfiere* (1783), to G.A. Kohlreif’s *Abhandlung über die Luftbälle* (1784), to John Southern’s *A Treatise upon Aerostatic Machines* (1785). This was a responsive and international scientific literature that aimed to distribute information regarding this most public but nonetheless inaccessible of sciences. It is difficult to overstate the unprecedented novelty of the aerial view, not merely in its ultimately transformative relation to archaeology, forestry, urban planning, and other fields, but in its disturbance of individual perception and attendant bodily response. Close attention was paid to the epistemology and physiology of this view. Lay readers were keen for accounts, and by the mid-1800s, there was sufficient volume of publication to warrant anthologizing and collection in popular editions; these editions are by and large what are referred to in the following.

1. The Aerial View Is Opaque

The aerial view customarily requires an appendix or instrument in order to be interpretable. Every object discussed in this book that provides the aerial view includes an informational accessory: narrative guides, legends, grids, rhumb and elevation lines, stereoscopic viewers, telescopes, and so on. To paraphrase the historian of cartography Christian Jacob, who was writing regarding maps: the aerial view is opaque like a cinema screen, not transparent like a window.⁶ This opacity exists not only at the level of defamiliarization—in which a known landscape becomes unknown through a shift in perspective—but at the level of atmosphere. Weather and environmental effects can delimit the visible distance of the view (a wall of fog)