



IMAGE, SPACE AND CINEMATICS

Editor Miguel Leal

## **The earth from above: from below**

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## The earth from above: from below

Rafaela Lima

### Abstract:

The essay "The Earth from Above: From Below" explores the evolution of aerial photography and its significant role in military strategy, mainly through the lens of camouflage during the Second World War. It delves into how the advent of aviation and photography revolutionized the understanding and interpretation of the Earth's surface from an aerial perspective. The necessity for precise ground mapping and the effectiveness of air missions propelled the development of aerial photography, transforming it into a crucial tool for military intelligence and camouflage techniques.

The narrative draws on Harun Farocki's film "Images of the World and the Inscription of War" (1988) to illustrate the ingenious camouflage strategies employed by German troops, showcasing the deliberate alteration of landscapes to mislead enemy forces. The article further discusses the educational efforts at the Pratt Institute of Art in the USA, where aerial photographs were used to teach and refine building concealment techniques on three-dimensional models, subsequently documented by Marjory Collins in 1943. This iterative process of capturing, modelling, and re-photographing is a testament to the intricate relationship between two-dimensional imagery and three-dimensional reality, highlighting the complexities of interpreting aerial images.

In a broader context, the piece reflects on the contemporary experience of viewing the Earth through digital maps and satellite images, noting the profound shift in perception and interaction with geographical space. It invokes Gaston Bachelard's philosophical musings on scale and distance, suggesting that the abstract nature of aerial imagery both distances and miniaturizes, altering our fundamental understanding of space and place.

By tracing the historical progression from manual aerial surveillance to the omnipresent digital eye of today's satellite technology, the article underscores the transformative impact of aerial perspective on both military strategy and civilian perception. It challenges the viewer to discern reality from simulation, ultimately questioning the authenticity and accuracy of what we perceive from above.

Keywords: Verticality; Aerial view; Image; Scale; Camouflage

**Rafaela Lima** (Oliveira de Azeméis, 1999) is a visual artist based in Porto, Portugal. Rafaela holds a MA in Fine Arts – Intermedia – from the Faculty of Fine Arts of University of Porto (PT). It is through theoretical-practical research that Rafaela has been developing her studies on image making processes and its role on collective imagery. Since 2019 she has worked and participated in multiple exhibition projects such as O Bueiro (Porto) and Laboratorre (V. N. Gaia).

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At the beginning of the last century, the ability to recognise the patterns of buildings, cars, rivers and fields from an aerial perspective was far from what it is today. As aeronautical activities intensified, the need to match the figures and volumes organised on the earth's surface to their original nature arose. This period was marked not only by the growth of aeronautics but also by the strong presence of war, which fueled the evermore urgent need to continue studying visibility on a vertical axis with the globe.

Alongside the growing developments in aviation, photography emerged as the tool of choice for decoding soils, ground mapping and monitoring air missions. In the absence of technology capable of real-time ground survey, the photographic record captured on board military aeroplanes confirmed the effectiveness of air missions. The archives dating back to that time were flooded with aerial photographs, and the careful observation of these aerial images led to valuable conclusions in the study of camouflage during the Second World War.

In the film *Images of the World and the Inscription of War* (1988), by the director Harun Farocki, we are presented with examples of camouflage strategies adopted by the German troops, captured through aerial photographs: the top of buildings painted in an attempt to mimic the landscape around them, large geometric shapes – roads, airstrips, watercourses – “transported” to unoccupied land, disorienting the enemy forces and avoiding damage to populated urban areas. The triangular design of the Nordholz air base, east of Hamburg (Germany), which is easily recognisable from an aerial perspective, appears reproduced in full scale on a distant site, with more defined contours. Observing it from above, at a high speed, one would not be able to see it for what it is: the product of a strategy for visual deceit.

Elsewhere on the globe, during camouflage classes at the Pratt Institute of Art (USA), the aerial images resulting from this ground mapping were transferred to three-dimensional models on a reduced scale. Building concealment techniques were rehearsed on these small models. Marjory Collins documented this work process in March 1943. In the photograph's description shown in page 49, Collins states that once the camouflage techniques had been projected onto the model, photographs were taken of these replicas, ultimately obtaining an image of the final results. The exercise went from the three-dimensional earth's surface to two-dimensional printing in aerial photographs, back to three-dimensionality as models, and finally moved to the two dimensions of the final photographs.

Identifying the ground involved stitching all these aerial images into one, like a big patchwork quilt. Step by step, the photographic record of lines and volumes was matched to real entities, thus creating an aerial survey of the earth's surface. Today, however, a big eye captures and registers the globe with precision, almost in real-time; it brings all the planes and reliefs into a two-dimensional plane in a single image that can be enlarged with the synchronised movement of the thumb and forefinger. Through this eye, we can consult the world's great map where the once uncharted white spaces have been revealed. Sitting on the other side of the screen, we fly over the world's four corners, anaesthetised by the inherent absence of scale of these images.

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In his chapter on the miniature, Gaston Bachelard says that *the distant forges miniatures at every point on the horizon* (Bachelard 2000, 178)<sup>1</sup>. Here, the distance, pointing in a downward orientation, is the earth's surface. *The geometer sees the exact same thing in two similar figures drawn at different scales*<sup>2</sup> (Bachelard 2000, 157–158). These images, devoid of any element of scale that might reveal them, are inscribed by the imagination in vastly different dimensions. We recognise the elevations of a building's facade far more quickly than we ever would the contours of its roof from an aerial perspective. We had to learn to see from above. To associate shapes and constructions with their corresponding real entities. These images transport us to an altitude of complete indefiniteness above the earth's surface.

From the perspective of someone who has never been in high altitudes, the more I look at these images, the less concrete they seem to me. Thinking about decoding the aerial perspective, but from an earthly perspective, leads me to associate the large geometric shapes organised on the surface of the earth with signs at my scale. A repetition of shapes and patterns is inscribed in the distant scales observed. These images could be captured at ten thousand feet or one metre off the ground. They concentrate on the details of buildings that don't fit within the horizon of our field of vision. They are small dots and constellations of figures, which could easily be a handful of grains of sand or a cluster of houses. As the product of giant scantlings, airstrips inscribe more or less geometric shapes onto the earth's surface. The simplest ones consist of just one straight line. Sometimes two, forming an intersection. As the runways increase in length, they tend to create a more complex composition of lines while allowing for more landings, take-offs and stationed aircraft at once.

A compositional exercise led me to organise them by shape in a physical archive. *Earth From Above* brings hundreds of aerial images of airstrips sorted and grouped according to visual similarities. Along these photographs, camouflaged amid the archive pages, are also registrations of fictionalised runways. These runways are reduced to the models' scale and captured with the feet on the ground. They simulate the earth's surface, the texture of the terrain, the shapes of the airstrips, and the photograph's grain. During the recording of this simulation, I flew over a little of every state in the USA; some of the states recorded are north-west Nevada (*Sky Ranch Aircraft; Basecamp Airfield*), south-east Arizona (*Rittenhouse Air Force Auxiliary Field*) and central Georgia (*Thomasville Airport*). Mixed in with the remaining images, the viewer is now presented with the challenge of identifying them.

1 Free translation

2 Idem

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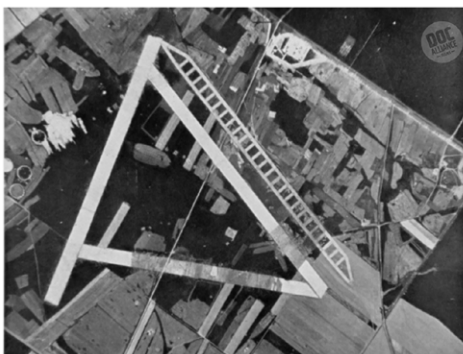
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*The Earth from above: from below*

Still from the movie *Images of the World and Inscription of War* (1988) Harun Farocki. 57 min.



Still from the movie Images of The World and Inscription of War (1988) Harun Farocki. 1h 1 min.

Still from the movie Images of The World and Inscription of War (1988) Harun Farocki. 59 min 50 s.

Collins, Marjory. 1943. "Camouflage class in New York University, where men and women are preparing for jobs in the Army or in industry, New York, N.Y. They make models from aerial photographs, re-photograph them, then work out a camouflage scheme and make a final photograph." Library of Congress. <https://www.loc.gov/item/2017878858/>.

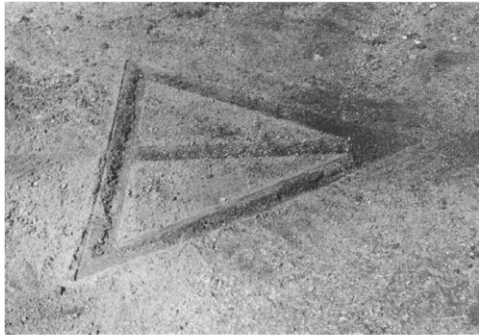
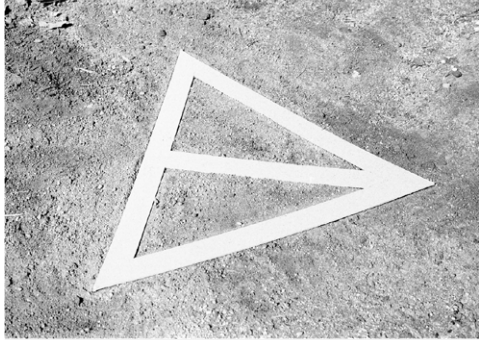




repeated the exercises from the camouflage lessons:



from the bidimensionality  
(the collection of aerial images)



**to three-dimensionality (models),  
back to bidimensionality (forget image)**

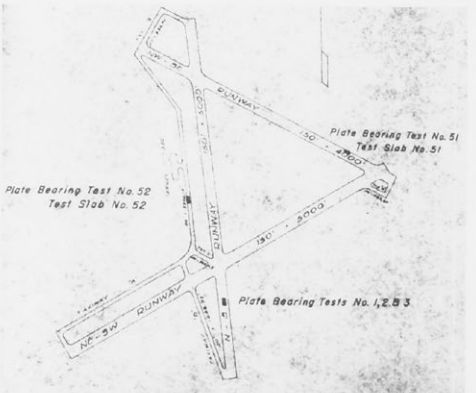
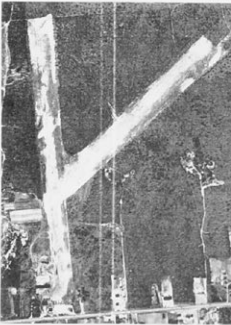
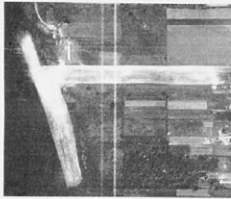
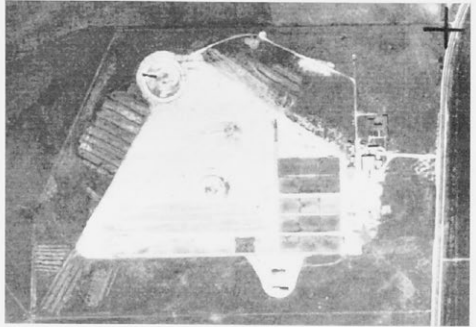


Rafaela Lima. Untitled. Black and white photograph, 2022–2023

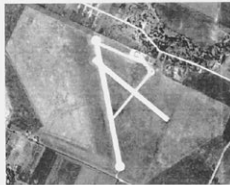
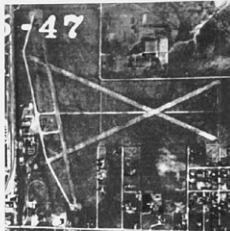
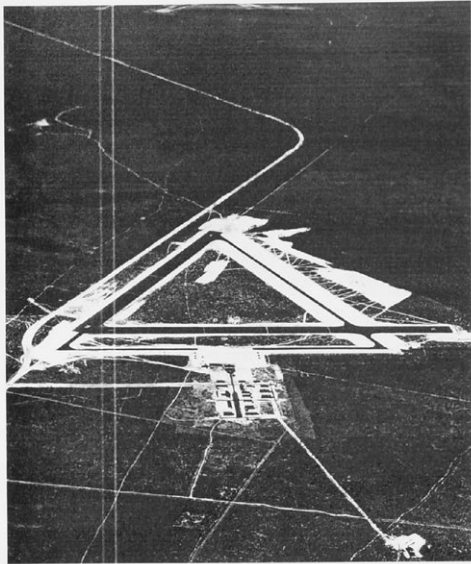




to three-dimensionality (printed archive)



ending in bldg  
(archive's photo)



dimensionality  
graphic record).