

RESEARCH ARTICLE

Using Aerial Photography to Study Mexico City: The El Caballito Circle

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This article describes potential lines of research using aerial photographs, focusing particularly on the study of urban areas. The specific case considered is that of Mexico City. After presenting an overview of aerial photography in Mexico, I will review the potential of this type of record as a primary source for research. The visual corpus analyzed is composed of about 30 aerial photographs taken between 1932 and 1978. They portray the urban space that is our object of investigation: a downtown intersection in Mexico City, known as *El cruceo de El Caballito* ('the little horse intersection') because an equestrian statue of Carlos IV stood there for nearly 150 years. We examine the collection of photographs taken at this site in order to demonstrate the methodological implications of working with aerial photographs of cities. The backdrop to this proposal is work on documentation, cataloguing and dissemination undertaken at the Laboratorio Audiovisual de Investigación Social (Audiovisual Laboratory for Social Research) at the Instituto Mora.

Introduction

The city is a projection of the social relationships on the ground (Lefebvre 1978: 10).

This article analyzes the use and usefulness of aerial photography as a research source in a study of transformations of an urban space in central Mexico City. Most systematic aerial records of the city made during the greater part of the twentieth century consist of unpublished documents or documents rarely consulted in urban studies. In studying the social processes undergone by cities and those who live in them, the work of documenting these images serves as a framework for proposing how these types of sources can be incorporated into social research of the city and urban places. I will examine their contributions and limitations compared to other types of photographic documents, as well as the methodological implications of their use.

The transformation of urban space can be affected by many different interests. Economic and political interests are often predominant, but aesthetic interests are also involved. In the process of conceiving, designing, producing and using urban spaces, pictures can play a key role. Photographs may be used in official, advertising, journalistic and other texts, to illustrate or complement the textual information and sometimes to promote an image of how the city may (or should) be and be seen. In this article, I review how these ideas shape the transformation of the

city and entail concessions that can guide urban change in one direction or another.

Part of a case study in progress, the text presents some preliminary results of the research I have been conducting based on aerial photographs of a site in Mexico City, the downtown intersection of Paseo de la Reforma and Avenida Juárez. The intersection is known as El Caballito, after the equestrian statue of Charles IV by Manuel Tolsá¹ that stood there for a century and a half (from 1852 to 1979). I begin by looking at some aspects of the urban environment, and describe the development of aerial photography in Mexico and its potential for studying the city in the twentieth century.

Studying the city through photography

Bearing in mind that we are dealing with a central zone in a large city, we characterize it as an urban nucleus that survives thanks to its dual function as a place of consumption and a place that is itself consumed (Lefebvre 1976: 27–28): the former, since it was always a popular place for people to meet and stroll together – that is, it was used mainly for leisure; the latter, as a focus of major economic interests and investments, for as long as the intersection itself existed. This focus relates the intersection to political and economic interests and their urban involvement, above all because of its importance, although we have not always been able to find such obvious traces of this. The site was formed and shaped out of historical and natural elements, but always politically, because it is a representation literally riddled with ideology; it is a product of society (Lefebvre 1976: 46).

This Lefebvrian concept of the urban contrasts with the city and is distinguished from it precisely because it appears during of the expansion of the city. In our case,

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the urban appeared in parallel to the development of the crossroad, and in time triggered the social uses of the Paseo de Bucareli Avenue in the late eighteenth century. By this time it was already quite urban, and there were plans to extend the city westward. Nearly a century later, the avenue Paseo de la Reforma was created (designed as the Paseo de la Emperatriz – the ‘empress’ avenue – at the height of the Imperial era). And it is precisely this urban character that enables us to note and understand aspects of the city that often go unrecognized: centralization, space as a meeting point, and its monumental character, among others (Lefebvre 1976: 67–68), all of which are present in the space we are examining in this study.

The contradictions between urban habitat, segregation and centralization – which are essential for social practice – highlight this highly meaningful contradiction of urbanism. With Lefebvre, we consider space above all as visual, where the eye rules (Lefebvre 1976: 124), although not without risking contradiction, because the visual is satisfied by representation in the form of images, not always realistic; but here we mean images in the widest sense (including all kind of representation and views), if the analogy is valid. Aerial photography helps us to single out this space – the modern center of Mexico City and the area to the west – and analyze it in terms of physical space and the views from above. Other kinds of observation and analysis could be made with street level images or even audiovisual records.²

The pictures created through aerial photography could not have been imagined, for the aerial views drawn and painted by artists envisioned the space in a different way. In the mid-twentieth century, Chombart de Lauwe stated that aerial photography could provide an inside view of humanity – ‘global views of humanity’ – , of its interactions and the environment, which would furnish a holistic view that would be difficult to imagine without these types of photographs (Chombart de Lauwe 1956: 5–7). According to Besse, aerial photography should enable an analysis of ‘the depth of time in the landscape’ (Besse 2003: 355) as a human document. An illustrative analogy can be made with pastry, whose layers are separated to see what was once there but is no longer – aerial photography helps analyze how the superpositions took place, and what took the place of what. The quantity and density of data contained in the photographs of the city makes this a considerable challenge for research.

The invention of photography has made other ways of seeing possible: ever since, the visual has also been the photographic. If, as Krauss says, each image acts in a different ‘discursive space’ (Krauss 2002: 40–59), it will be necessary to determine what specifically is the discursive space of the photograph. This inexorably leads to the question of truth in images, the subject of discussion for centuries, but which photographs call into question.

It is important to take a closer look at what we can learn from aerial photographs, as Chombart did over half a century ago (Krauss 2002: 26). To begin, he notes the limitations of aerial photographs taken at angles, from the ground, of 30° or 60° as compared to the optimum



Figure 1: Oblique view to the south of El Caballito Circle in the early 1930s. Mxim-2–3–3–1 (mx = Mexico; im = Instituto Mora; 2 = El Caballito Collection; 3 = Aerial Documentation Group), Compañía Mexicana de Aerofoto, Mexico City, 1932. With permission from Compañía Mexicana de Aerofoto, 449.



Figure 2: The west side of El Caballito Circle at the beginning of 1930s. Mxim-2–3–3–3, Compañía Mexicana de Aerofoto, Mexico City, 1932. With permission from Compañía Mexicana de Aerofoto, 403.

angle of 45°. This is clearly seen if we compare, for example, **Figure 1** with **Figure 2**. The vertical planes can be seen much better in the latter, since an oblique view, unlike a vertical view, permits a vertical surface to be seen. He also notes that a series of consecutive shots, made while circling a site, each differing slightly from the last (which may require more than one overflight),³ can be extremely useful.

As we shall see, the development of aerial photography in Mexico is linked to types of documentation and urban analysis, used in support of various nationalist projects that were promoted according to the styles and beliefs in fashion at different times. In our analysis, we will observe what the aerial photographs can tell us about urban space, the universal commodity par excellence. Space is

not neutral, but produces social interactions that in turn give rise to urban space in the practice of business and social relationships (Santos 2002: 21; 1990: 156). The aerial photographs of the El Caballito Circle examined here will demonstrate this in various ways.

Photographic echoes: About urban planning and illustrated publications

According to Lefebvrian theory, the form of social space is the meeting and the simultaneity, while nature-space resists and scatters. This would be wholly true if it referred only to physical space, but social space is distinguished from occupied space by the very fact of its complicity with social structure; with the productive forces and division of labor that are apparent in social space. Space is also a tool that reinforces class differences; that is, 'Space both joins and separates men at the same time' (Santos 2002: 123). To better understand this approach, I shall examine what the prevailing ideas about the city were at the time when commercial aviation was being established.

I describe some features of urban planning in Mexico City in the 1920s, as a background to the observations I make about the site from the aerial photographs. I begin with a description and analysis of the photographs, and then note some possible interpretations and compare them to conclusions drawn from other photographs (at other heights and at ground level).

Investigating the characteristics of Mexico City of the 1920s yields fruitful comparisons with the following decade, when aerial photography became almost commonplace. Our main sources of information were issues of the journals *Planificación* (Planning), *Obras públicas* (Public Works), and *Nuestra ciudad* (Our City) from the 1920s. These provided a reference for ideas of the concept of Mexico City at the time; how it was and how people wanted it to be, its influence, and planned construction. The first two are specialized journals, and the latter was directed at a more general readership. Images of the city, including aerial photographs, become photographic echoes and help the researcher follow the discourse on how construction of the city should proceed according to the functionalism that was being introduced into ideas and concepts on the city's future.

The journal *Planificación* was published by the architect Carlos Contreras, standard-bearer of the post-Revolutionary 'National Reconstruction' movement and author of the Mexico City Federal District urban plan for the following decade. In the first issue, published in September, 1927, he set forth his proposal in an editorial, under the byline of 'Doctor Atl', for the creation of a Ministry of Planning. The purpose was merely to see the government's expectations with respect to city planning, particularly the capital city, and how various agents of communication such as the journal would publish and reinforce the government's ideas.

Contreras founded the National Association for Planning of the Mexican Republic⁴, with the stated agenda of 'transforming Mexico, beginning by converting Mexico City into a modern, convenient, clean, beautiful city' (*Planificación*

1927: 3). By that time, the model to be followed had become the functionalism prevailing in the United States. Ideas on how the transformation of Mexico City should be conceived and implemented were based on examples from American cities and theories, and the journal even printed articles by American city planners.⁵

Traffic was one problem that was repeatedly pointed out. If the city had six thousand vehicles in 1911, by 1924 the number had more than doubled, to 13,000, and was estimated to reach 250,000 by 1950. Numerous proposals and models were put forward to avoid having the city plunge into chaos. Photographs were frequently used, of course, as proof that traffic jams were worsening at particular points, to justify plans for remodeling intersections, creating or changing one-way streets, widening avenues, building underpasses and, above all, laying out broad avenues in imitation of American cities. *Obras públicas*, published by the Federal District government, may be the best example of the frequent use of photographs for this purpose. Their location was always identified in detail, and they were accented with frames or other graphic devices to create a contrast and draw the reader's attention to some images over others. This magazine also printed information about American cities.⁶

It is also interesting that the fifth issue of *Planificación* (January 1928), at a time when experimental flights over cities were proliferating, includes references to aerial topographic photography and its practical applications and to the 'science of creating topographic maps using scale photographs taken from an airplane' (*Planificación* 1928: 13). That issue mentions the basic distinction, which survives to the present day, between oblique or perspective-plane shots, which they judged to be useful only for advertising, and vertical shots, used for 'scientific' work and often termed 'aerial mapping'.

The same issue also included an article by engineer Francisco Antúnez, who drafted the plan for Mexican air routes. He stated that the main applications of aerial photography would include locating high-tension power lines, construction of dams and ports, forest and agricultural studies, location of railways and highways, and land valuation. Antúnez anticipated that the most important uses would be as follows:

Aerial photographs would enable the precise location of types of constructions; an assessment of the value of such construction; the distribution of parks and gardens; the alignment of streets and avenues; the identification of topography; the identification of the precise relationship of different elements of the city; the identification of the precise location of rivers, mountains, wooded areas, dams, canals, and drainage; and more. In short, aerial photography facilitates the work of judiciously planned urban improvements, street widening, and construction of new streets. For regional planning, aerial photography would enable a broad, integrated vision of a county or a district and a precise mapping of its relief and topographic features. In this regard,

aerial photography facilitates the planning of public works that require this information, such as water intake, laying drinking water and drainage pipes, power transmission, and so on.

Main references to the problems of cities and traffic studies appeared in this work by engineer Antúnez, pointing to the revolution that aerial photography meant for topographical mapping methods:

When two cities are relatively close together, their problems are not unique to each one, but regional, because of their mutual influence on each other. This is when aerial maps can be most useful, enabling the problems to be tackled together as one region. Traffic studies in a city. In this case, together with the topographic survey, a count is made of the automobiles and carriages. Traffic flow at the intersections is studied in order to find the relationship between the number of automobiles in a given area and their speed and the number of cars that cross the intersection in a given time. [...] There are many other applications of aerial photography, which, together with those mentioned above, will surely effect a true revolution in topographic methods and their uses. It is not surprising, since the results are so precise; with careful work the error does not exceed 1% and the speed using aerial photography is incomparably faster than the methods of yesterday. (*Planificación* 1928: 13)

This text reveals two main concerns. First was the desire to design and organize the city, especially by designing large intersections and streets. This implied an increase in land value; in the particular case of the intersection studied here, the value of the land rose to the point where it was among the most expensive in the city. The second concern was to assess traffic and to estimate its effects.

In discussing this urban space, we cannot neglect to mention the centuries-old trend of promoting Mexico City's growth toward the west. Its potential was radically transformed with the creation of the Paseo de la Emperatriz (later to be renamed Paseo de la Reforma) during the Empire of Maximilian (1864–1867), who sought to link the city to Chapultepec and the imperial residence, making the land along this avenue the most valuable in the future city.⁷

But if the use of photographs in such magazines was becoming commonplace, another Federal District publication with a more popularizing outreach, the magazine *Nuestra ciudad*, printed shorter articles with even more photographs, including aerial photographs. Here, however, they included no references or credits. The photographs were not used so much to document or prove the existence of problems or to justify proposals as for aesthetic purposes, and above all to paint the city in a flattering light. The magazine thus contained sections such as Statues and Monuments, Discovering the City of Palaces, Mexico Before the Conquest, The Great Buildings of Our

City, Vanishing Mexico, Stories and Legends of the Streets of Mexico, and more. It also claimed Mexico City to be an 'aeronautic center' (*Nuestra ciudad* 1930).

Naturally the magazine included photographs — even aerial photographs — of the El Caballito roundabout and the surrounding area, often emphasizing the problem of traffic in the modern city. Of particular interest is that in the case of this magazine, photography was even used in their advertising. At least two issues in 1930 carried this full-page advertisement:

Send us 3.00 pesos, and we will return 6.00 pesos. That is, if you subscribe you will receive, as well as your magazine, a magnificent photograph — not an engraving — printed on quality 11 × 74 or 11 × 54 paper. You may choose between a panoramic view of the Plaza de la Constitución from the north, featuring the Cathedral, the shrine and the municipal palace; a panoramic view of the Plaza de la Constitución featuring the cathedral in the foreground and the national palace and municipal palace at the sides; a panoramic view of Chapultepec Lake; aerial view of Mexico City; or a panoramic view of the 'El Toreo' bull ring arena full of people. (*Nuestra ciudad* 1930: 1)

Not only photographs themselves abounded in the magazine, but also articles about them. One example is an ode to the photographic work of Hugo Brehme, who received extensive recognition for his 1929 exhibition, which took up a good part of the issue. The consistently patriotic tone was heightened for the summer and autumn issues, which lauded the wonders of Mexico, promoting it for potential international tourism. The articles were sprinkled with quotes, such as these words of Alberto J. Pani: 'Mexico's real problem is that of morally and physically cleansing the people and endeavoring by every means possible to improve the fragile economic condition of our proletariat' (*Nuestra ciudad* 1930: 64).

Aviation in Mexican life was viewed in the same patriotic and nationalistic tone. Achievements by Mexicans were promoted, particularly after the first New York–Mexico City flight. As a prime example of the tone of the magazine, in its October issue (1930: 76), the magazine made wordplay with its name, promoting awareness of Mexican aeronautics in an ode to the Mexican Aeronautic Association. The magazine claimed that there would soon be a mighty passenger and cargo aircraft called *Nuestra ciudad*, and that in New York there would similarly be an aircraft called *Our City* in that city's honor.

In summary, the use these magazines and journals made of the photographs was framed as a guide to the concept of aerial photography and its potential. Photographs for urban planning, to help make maps, to observe traffic, to promote national aspirations or to satisfy aesthetic tastes — all these uses would permeate the future entry of aerial photography into the discourse of the modern city.

We now move on to a concrete examination of how the visual corpus of aerial photographs was created. These

photographs serve us as a source for better understanding the transformation of the study site in this period. Our hypothesis is that the body of photographs was envisioned as an investment that would be seen and admired as one of the main visual windows into Mexico City. At that time, the city had three main skyscrapers, including one of the first tall buildings built by the National Lottery, now some seventy years ago.

Using aerial photographs to understand urbanism

In this section, I examine how we can learn more from aerial photographs about this small strategic slice of the city and its transformations, to better understand how this urban space has been seen and how people wished to see it. In fact, we will not fully understand these aspects until the study has been completed, including the photographs taken at other levels.

As noted earlier, the first step was to properly document all the photographs according to the Instituto Mora Audiovisual Laboratory for Social Research (LAIS) Guidelines for Describing Photographs based on the ISAD(G) standard.⁸ To this was added an interpretation and analysis comparing them with other text and photographic documents.

Determining the basic information on *identification, context, structure and content, physical characteristics and associated documentation* of these photographs enables them to be located and the information standardized for retrieval at any time by anyone by means of the El Pescador Information System for image files that the LAIS recently developed and put online.⁹ To clarify the characteristics of the type of documents reviewed in this study, we begin by considering some aspects of *physical condition and context*. These help to define more precisely the characteristics and state of preservation of the archived items, as well as the motives and conditions under which the companies made these photographic records. Lastly, we focus on *structure and content* and *related documents*, in which we describe and analyze what was in front of the camera at the moment when the pictures were taken, and the way in which they were made.

The photographs and their context

In regard to *context*, it must be noted that most of the items are from the Fundación ICA, the organization that since its beginning has put the most effort into preserving, digitalizing and providing access to photographs taken by the Compañía Mexicana de Aerofoto.¹⁰ Following this, we have a smaller proportion of photographs conserved by an active flight center which remains of what used to be the Compañía Mexicana de Aerofoto, and also photographs taken since the 1960s by the company Struck Fotogramétrica Internacional. Because there are few texts about development of aerial photography in Mexico,¹¹ I will give a general overview of its history here.

While bird's eye views were created in two dimensions in the sixteenth century, the production of aerial images of the city dates back to the late eighteenth century,

with views of the city afforded by hot air balloon flights. However, referring specifically to the possibilities opened up by aviation technology in the twentieth century, it became quite profitable to specialize as an aerial photography pilot,¹² for there were very few of them. The American Sherman Mills Fairchild, who pioneered aerial photography in the United States, created his own camera and in February, 1920, founded his own company, the Fairchild Aerial Camera Company. In 1924 the camera factory changed its name and main business, becoming Fairchild Aerial Survey, Inc. The company photographed dams, natural resources, new urban developments, real estate, parks and forests in the United States, Canada and South America. They photographed Mexico City on April 4, 1929 (Osorio 2007: 27). This marked the beginning of Mexico City's history of aerial photography; from that time on, Compañía Mexicana de Aerofoto systematically photographed the city from the air, year after year.

As part of Avilacamachismo (1940–1946), the youthful nationalism movement that flourished under President Avila Camacho, and the Unidad nacional (National Unity) program, the boom in aviation was closely related to war technology. The goal was strictly military,¹³ not only to survey Mexico's territory in detail but also to design surveillance methods and systems. Behind all these projects, a major role was played by the U.S. and its ideas about national security and industrial culture at the close of World War II and the early post-war years. In fact, instruments and equipment used for surveying Mexico from the air were entirely American, generally discarded by the U.S. because they were out of date or unserviceable.

A comparison can be drawn here between the zeal for order and control of the urban planning theories of the 1920s and the similarly controlling objective underlying aerial photography, a practice first supported by the Military Cartography Service.¹⁴ Pilots and photographers who had worked with ample freedom found that with the creation of the Photography Squadron, their work became strictly regimented and hierarchized. More than one pilot who had begun in the Military Cartography Service left to fly for private companies, among them Captain Ovando. He continued to fly flights of a variety of scales as an aerial photography pilot for private clients, such as the Compañía Mexicana de Aerofoto.

Turning now to the work of aerial photography, the aviators' performance depended to a large extent on weather observations and forecasts. Close friendships formed between the weathermen and the pilots. Daily life and routine work were subject above all to the meteorologists' advice to the pilots: whether to fly north, south, east or west; fly or stay grounded; what time of day to fly; and more. The pilots' schedule and route always depended on what the weathermen recommended. This is another example of the importance of weather conditions in aerial photography.

As aerial photography companies proliferated, pilots specializing in aerial photography became among the best-paid and most prestigious flyers, closely interwoven with the role of Mexican aviation in World War II.¹⁵ This



Figure 3: The verticality starts at El Caballito Circle, in the last years of the 1940s. Mxim-2-3-4-5, Compañía Mexicana de Aerofoto, Mexico City, July 6, 1949. With permission from Fundación ICA, flight 6097.



Figure 4: Southwest side of El Caballito Circle, while Reforma Avenue is growing up in the 1950s. Mxim-2-3-5-1, Compañía Mexicana de Aerofoto, Mexico City, August 19, 1955. With permission from ICA Foundation, flight 11925.

led to a race for maximum efficiency and precision, which meant experimenting with increasingly better equipment. Competition was fierce to see who could be the most skillful at producing the best quality photographs. Pilots had to fight drift and fly straight lines as accurately as possible.

They were all trained with American experts and equipment, making the profession highly dependent on the U.S., particularly in matters of procuring equipment, maintenance and training. The International Civil Aviation Training Center (CIAAC in Spanish)¹⁶ became the institution that professionalized aerial photography, setting requirements for long hours of flight practice. Aerial photography has been technically sophisticated since its beginnings, as well as being considered a highly specialized practice that basically serves to construct maps and is directly under the purview of agencies such as the National Institute of Statistics and Geography (INEGI). It also owes its popularization to striking and spectacular shots, particularly oblique and urban photos, which are still highly prized in the commercial sector, especially advertising.¹⁷

What is most noteworthy here in respect to the origins of aerial photography, especially the intentions behind these photographic records, particularly vertical or overhead types of shots, is that they originated from the desire to defend and keep watch over Mexican territory, and were subsequently applied mainly in urban topography and mapping. The photographs were therefore made with the goal of enabling the greatest possible detail, whether they were wide views from a great height to be used to construct maps or closer views from low flights to detect even the smallest change in a lot or construction project. By this time, the uses of oblique views in Mexico – less rigorous and more spontaneous, technically simpler and more aesthetically appealing – focused more on advertising, publicity and promotion of urban areas, for their attention-drawing nature. Considering different types of

aerial photographs, it is worth pointing out what may already seem obvious: not all seasons, nor weather nor times of day, are suitable for photography. This puts certain limitations on the ability to photograph any landscape, including the city. It is also why it was so important for pilots and photographers to have ongoing support from meteorologists.

In the rainy season, vertical shots were rarely made – it is difficult to find any but oblique shots between July and September, as we can see in **Figure 3** (July 6, 1949) and **Figure 4** (August 19, 1955). The vast majority of flights we use to study the city were made during the dry season (November to May). Moreover, flights in the early morning or the evening are not very useful because the long shadows make it hard to identify features. Thus the photographs that afford the best view of urban landscapes and buildings are those taken between 9 a.m. and 5 p.m. on the longer days of the year (between February and June) such as **Figure 5**, taken in early afternoon (February 1953), and between 10 a.m. and 4 p.m. on the shorter days (October to January) such as **Figure 6**, recorded at noon (Dec. 3, 1949).

Since the 1930s, and particularly since the founding of Compañía Mexicana de Aerofoto – the first company systematically dedicated to photographing Mexico from the air under government mandate – large infrastructure projects such as dams were photographed. The main application of aerial photography, though, was for vertical photos for the purpose of surveying the country. The photographs were fit together into ‘mosaics’, large areas reconstructed by overlapping photographs. The overlap was 60 percent longitudinally (along the line of flight) and up to 30 percent latitudinally (between successive parallel flight lines). By fitting the photographs together into a mosaic, the entire area could be visualized with a well-focused view, except for the edges. Assembling orthophoto mosaics¹⁸ has been one of the more conventional



Figure 5: A vertical view of the area southwest of the Circle, crossed by Reforma Avenue. Mxim-2-3-5-4, Compañía Mexicana de Aerofoto, Mexico City, February, 1953. With permission from ICA Foundation, flight 868/198.



Figure 6: A vertical and low view of El Caballito Circle, near the end of the 1940s. Mxim-2-3-4-9, Compañía Mexicana de Aerofoto, Mexico City, December 3, 1949. With permission from ICA Foundation, flight 418-AC2.

uses of aerial photography. Depending on the number of flights, a mosaic could involve dozens or even thousands of photographs for a single area. The greater the scale, the more negatives, since they are taken closer to the ground.

The collective result of this work has been preserved in its original medium, negative by negative. Most of the records are 23 × 23 cm acetate negatives, with some 18 × 18, the photographs either cut apart or still in their original rolls. In the latter case, it is easier to identify the flight paths.¹⁹ If the negatives had been cut apart, it became more difficult to interpret them if they were not numbered in order. In some cases, they were cut apart for some purpose and then later stuck back together. This has made conservation more difficult because much work is involved cleaning off the traces of adhesive left by the tape on the acetate negatives.²⁰

For the task of *selecting and evaluating* materials from the collection of aerial photographs of the El Caballito intersection (Instituto Mora Collection, Fondo LAIS), aerial photographs of the El Caballito Circle were located in any of the three archives. The search began with a review of all flights over Mexico City in those decades whose photographic records were still available (of which there were many from each year), whether uncut rolls or separate negatives, to locate the point in the flight path in which they flew over the circle or as close as possible. In any given year, the number varied from three or four flights to none at all. Considering that the flights were intended to record extensive areas of the city, often the entire city, the flight lines did not often pass precisely over the circle. Thus, while we do have photographs where it falls exactly in the middle, we also included those where the intersection was at the edge or the corner of the picture. For the flights that included our site, the number of negatives per flight varied according to the scale.²¹ Except for a few extremes, the scale varied between 1:50,000 and 1:2,000, which meant that most flights had one to three useful photographs that included the circle, depending on the amount of overlap. This was the basic selection criterion, and negatives showing the circle were only rejected if the site appeared so close to the edge that there was almost no chance of it being clear and in focus.²²

The photographs and overviews of the city

We now turn to the topics of *structure and content* and *associated documentation* in relation to our proposal of documenting the collection according to ISAD(G), moving deeper into the subject of what was portrayed by these photographs. The description has enabled (sometimes obliged) us to pay attention to the details and thoroughly scrutinize the image, particularly the circle and the area around it, considering that these types of pictures are particularly suitable for a more macro vision of the site being studied. In fact, this intersection is one of the first sites in Mexico City to have been photographed from the air from a hot air balloon,²³ along with La Alameda and La Villa.

We might say, like Gervais, that it started the propagation of a new way of looking at the land; a sort of 'shift of the gaze' towards the perpendicular (Gervais 2001: 20). It was the start of a new iconography which would not, however, find practical uses until the era of flight, since at that time a photograph required the subject to remain motionless for longer than was possible in the first photographs

taken from the air. The military use of aerial photography discussed earlier would give it a guise of usefulness: the hot air balloon may not have been reliable enough for scientists, but it did satisfy the flight enthusiasts of the early twentieth century.

This new vertical perspective of the ground was to have a strong influence on early photography and its aesthetic forefront. It was precisely this perpendicularity that enabled new ways of perceiving, admiring and recognizing the ground surface, particularly urban space. Gervais noted how in France the proliferation of these photographs from the air had direct effects on many photographs in the illustrated press (Gervais 2001: 29–30), which began to feature a large number of high angle and vertical shots, not only from the air, but also from buildings that enabled increasingly high vantage points as the city grew skyward.

To him, this process was even evidence that aerial iconography had finally found a use, not the cartographic model that had been pursued since Nadar took his first photographs, but rather for commercial and aesthetic purposes in the illustrated press (Gervais 2001: 34). However, although a similar development can be seen in Mexico starting in the 1920s in the magazines mentioned earlier, I now draw our attention to the places and events that were photographed in this paradigm. Before we pass on to a closer examination of the photographs of the study site, I will consider some general observations, which suggest more questions than answers and are sure to stimulate future research on these documents.

It is notable that in Mexico City, until the 1950s, aerial photographs documented the city's remodeling and modernization, and the downtown area was always depicted. As time went on, flights and photographs began to focus more on other areas – towns, haciendas and ranches formerly outside the city – as the urban area grew, encircled and swallowed them. Photographs from this period are of communities and neighborhoods in the city such as Coyoacán, Churubusco, Colonia Roma, Hipódromo Condesa, La Villa and many others. Because of this, it is much easier to identify the location of aerial photographs from the first half of the twentieth century. Identifying the area and the specific site of later photographs is a more difficult and time-consuming process: while there were not one but several flights over the downtown area in the early period, in later decades we find gaps of two to six years between photographic flights over the zone. Meanwhile, photographs of the south and west of the city increased as the investment by elites and urbanization grew rapidly in those directions. Flights were also increasing in altitude as a result of more precise equipment but also because budget limitations reduced the number of photographs per flight (ever more were required as the city grew) while flights were restricted and on a smaller scale, reducing the flight paths and photographs, limiting the amount of film and time in the air (mainly because of fuel).

We organized the collection into three groups (aerial photographs, high angle photographs and street level photographs). It is the first group, aerial photographs, which we treat here, and this was divided into subgroups

by decade.²⁴ The main questions in this study are about the transformations that took place in the intersection and its immediate surroundings, and about the photographic constructions of this much-pictured intersection through different periods and from different heights, including street level, and what might have been the intentions of these different representations. In other words, we are interested in analyzing what and from where the circle has been photographed, which spaces were included, what motivations were prioritized, and what aspects stand out. These questions cannot be fully answered until the entire set of photographs has been documented; they must remain to be answered in a further stage of the research project.

Aerial photographs of the El Caballito Circle (1930 to 1970): From a place of confluence to a space of expulsion

Photographic constructions from macro or composite views enabled the aerial photographs to capture some events or details from various heights and from street level (as they would later do with urban landscapes) of this site, which was swiftly becoming urbanized with the planning and expansion of the city towards the west and southwest. I therefore first review some aspects of these images and the circumstances under which they were made and draw some preliminary conclusions.

The set of pictures spans a century of photographs of the intersection, from some of the first photographs of the site in the 1870s until 1979, when the sculpture was removed to the Palacio de Minería. The overall corpus is made up of photographs from several different archives. This selection of some thirty aerial photographs, limited to the period 1930 to 1970,²⁵ begins in the decade when aerial photography became widespread and the El Caballito Circle, already entirely urban, was photographed frequently. It extends to the last decade of the wider research period, when the monument was moved a few blocks east towards the city center in 1979.

This first step of the research focused on photographs taken from the air; that is, the most macro level possible, using thirty selected photographs from five decades, as noted above. The vast majority of them were taken by the Compañía Mexicana de Aerofoto. In the 1930s they began systematic aerial photography, as the government started to record Mexico's land area for purposes of surveying, mapping and surveillance. The company would later be acquired by the largest construction company in Mexico, Ingenieros Civiles Asociados (ICA). We can therefore find complete aerial photographic records of the main projects built by this company. The photographs have never included personal credit; rather, the Compañía Mexicana de Aerofoto was credited as the photographer throughout the decades. A few photographs from the final decades (1960s and 1970s) are credited to Struck Fotogramétrica Internacional. This is a much younger company, whose photographs date from the 1960s, founded by a former member of Compañía Mexicana de Aerofoto who brought forward the experience gained at the previous company.

The site examined in the present study, the El Caballito Circle, is located in central Mexico City. It originated when the avenue Paseo Nuevo or Paseo de Bucareli was created in 1775, with the intersection of that street and the Calzada del Calvario (Calvary Avenue). When the equestrian statue of Carlos IV was installed in the middle of the circle in 1852, the circle became one of the major intersections of the city and an urban landmark for more than a century and a half. Subsequently, another important avenue in the life of the city was created, originally Paseo de la Emperatriz but later named Reforma. This avenue started from the El Caballito Circle and extended to the southwest to join the city with Chapultepec. It was this that led Fernández Christlieb to dub Mexico City the 'bipolar city', because it had two centers, one at each end of the avenue (Fernández Christlieb 2000b: 99–109), which led to the perception of a new westerly center, or at least blurred the traditional center that had been located downtown for centuries, long cherished as much by the short-lived empire as by the Porfirian elites. Shortly thereafter, another plan, also promoted by Porfirio Díaz, was contrived: a Legislative Palace on the west side of the circle. Construction was begun in 1910 but was cut short by the revolutionary movement²⁶ that paralyzed the flow of capital for projects of this type. So it was that the El Caballito Circle became the geographic center of Mexico City,²⁷ framed by the parenthesis that should have been an imperial axis that was nearly completed in the late nineteenth century. This avenue would have linked the Legislative Palace with the National Palace and the Zócalo central square. But tossed by the turbulent tides of the twentieth century, the latter plan, in spite of the efforts of urban planners and elite investors, was never realized.

But we should point out, in regard to the modernity in which this site evolved, that we consider modernity as a perpetual goal; we acknowledge that every period has had its distinctive modernity. Thus we cannot speak of one single consistent idea of urban modernity²⁸ that remained unchanged through time. Rather, each period of history has had what it called 'modernity' and thus its characteristics are different depending on the period and place of which one speaks. Neoclassicism had its dose of modernity, and from it we bring to the mixture mainly the search for urban perspectives and the concept of the boulevard as a wide, tree-lined artery dotted with traffic circles that serves the city's need for open-air spaces.

But along with the Haussmannian ideas and Parisian Porfirian concepts that prevailed from the mid-nineteenth century would come new concepts of modernity, principally French. Later, with the Revolution and nationalism, they would be superseded by a search for nationalism, giving way in turn to a more cosmopolitan and international outlook, which turned to Chicago and New York rather than Europe as the beacon of the architectural and urban vanguard. With this, we come to what Fernández Christlieb had long ago dubbed the 'automobile city' (Fernández Christlieb 2000a: 54–57), where people were already convinced that the Neocolonial style yielded a contradiction and the incipient admiration for the United States that appeared in the 1920s with the appropriation

of its functionalist theories was well established by the 1940s. The decade of international-style skyscrapers, of which an example at the El Caballito Circle is the El Moro building (1946), was followed by further tall buildings and expressways with interchanges. Rivers and canals were enclosed in pipes to allow vast carpets of asphalt to serve the vehicles whose number rose with dizzying speed from the 1950s onward, following the example of such cities as Los Angeles, where life without a car is unthinkable.

As a symbol of the relentless progress of the city, we recall the giant Goodrich tire on the Corcuera building on the southwest corner of the circle that revolved day and night for nearly two decades, which many residents of the capital city recall even today. The automobile was here to stay and its domain spread to every corner of the city. It rapidly became a symbol of upward mobility in Mexico, and in the regime of Ernesto P. Uruchurtu, nicknamed the 'Iron Mayor', its importance took firm hold. During his long-running term in office (1952 to 1964), the road network in the city was extended by 346 kilometers. The city grew from three million in 1950 to fifteen million by the end of the period covered in the present study. During this time span, the growth of the city and the number of vehicles were stimulated further by the construction of a system of arterial trunk roads promoted by Carlos Hank during López Portillo's presidency (1976–1982).

Given the consequences, it seems incredible that simply to straighten a road or to allow a view of a building or monument might transform an urban space, but exactly this has been a common practice in the construction and reconstruction of many new cities as they are invented and redesigned according to the socioeconomic and political context of the day. In some cases this has meant destroying houses, churches, convents, or public buildings, and in many cases people are evicted, and property and private buildings are expropriated, always for the sake of remodeling the face of the city according to the style, fashion, principles and above all the interests of those who have the power of decision to 'modernize' the city by the definition of modernism held at the time. Mexico City has seen numerous examples of these processes over the years – such as the expansion and extension of streets and avenues; for example, Cinco de Mayo (widened 1905), 20 de Noviembre (1935) and Reforma Norte (1964). The last pertains directly to the present study.

The conception of modernity in the city I maintain here is that proposed by Marshall Berman: permanent change – a perpetual longing for renewal in both personal and social life (Berman 2000: 89–90). The interests of the ruling class are created precisely in this continual change emerging from crisis and chaos, in which disasters such as floods or earthquakes, common in this city, are simply the trigger for massive opportunities for development and greater renewal. To be constantly modern, we have learned to desire change for the sake of change; to seek it and produce it in our every act and thought. We delight in movement; we look forward to renewal in all aspects of our lives.

The El Caballito Circle has been remodeled in tune with the socioeconomic environment of the day numerous

times over the more than century and a half that it has been conceived as an urban space. Its image must have conveyed that longing for continual change that – for Berman – characterizes the perpetual movement of modernity. The circle was cast as an urban landmark whose colonial form continued to represent the cosmopolitan, international face of the city. It is important to identify the major changes undergone by the El Caballito Circle – remodeling the base of the sculpture, constructing new buildings, creating new streets, reshaping the traffic circle and changing social uses of the urban space – in order to draw conclusions that will serve as the preface to the following stage of the study that will include photographs taken from other angles, such as from adjacent buildings of various heights and at street level.

The study to date has been conducted using aerial photographs. I will list in general terms the major changes that these photographs allow us to observe in the circle and its surroundings. Following an analysis of the site, the changes and their photographic representation will be treated in more detail. These changes were determined by observing and describing the photographs, but even more by comparing and contrasting photographs with one another.

The pedestal bearing the equestrian sculpture was almost at the exact center of the circle for many decades, but the circle was subsequently expanded several times, and its shape became more elliptical than round with the growth of the intersecting arterial roads and the traffic they carried. This transformation can be seen by comparing **Figure 7** (1932), **Figure 8** (1958) and **Figure 9** (ca. 1964). The garden at the base of the pedestal underwent various changes; it was first square, later round and eventually elliptical. Pedestrian usage of the circle dwindled to nothing as the traffic around the circle grew in volume and density and decreased in flexibility, an evolution facilitated by changes in the design of the circle itself. In fact, when in the 1970s the network of trunk roads was created running through every quadrant of Mexico City (north, south, east and west), the El Caballito Circle obstructed the new system. For this and other reasons in 1979 the statue was removed and soon after installed in the Plaza de Minería also known as Plaza Tolsá.

For decades, the circle was surrounded by two-story eighteenth- and nineteenth-century buildings. However, the construction of the El Moro building²⁹ by the National Lottery in the second half of the 1930s (then considered the second tallest-building in the city next to the La Nacional building (1932) located across from the Fine Arts Palace)³⁰ was the first in a series of rapid, radical transformations. This process can be observed comparing **Figure 10** (ca. 1940) with **Figure 11** (June 11, 1949). Soon, an increasing number of buildings as tall as and taller than El Moro were built. The Torre Prisma (1970), also built by the expanding National Lottery Commission, was over one hundred meters high, and the Torre del Caballito (1988) is over thirty stories high.

In fact, one of the most visible contributions of aerial photography is due to the shadows seen in the photographs. In a longitudinal series of photographs shot in



Figure 7: Oblique view to north of El Caballito Circle. Mxim-2-3-3-2, Compañía Mexicana de Aerofoto, Mexico City, 1932. With permission from Compañía Mexicana de Aerofoto, 450b.



Figure 8: A very high vertical view to show how, by the 1950s, the geographic center has moved west. Mxim-2-3-5-6, Compañía Mexicana de Aerofoto, Mexico City, 1958. With permission from Fundación ICA, flight 553/2.

winter, when the shadows are longest – in which the contrast between the dark shadows and the other textures is so great as to make the pictures resemble openwork as in **Figures 6** and **12** – we can clearly observe the vertical extension of the urban landscape and how the heights of the buildings increased in this part of the city, for example from the 1930s to the 1950s, eventually reaching more than 100 meters. This is illustrated by the difference between **Figure 13** (1957) and **Figure 14** (1936). That is, it is relevant to analyze the different textures in the photograph to note whether these black areas are simply the long shadows cast by high buildings, or green spaces – which also decrease over time. This is clearly seen if we compare **Figure 15** (1934) with **Figure 8** (1958). We can see, as a specific example, how the Tívoli del Eliseo park



Figure 9: Oblique view, since Reforma Avenue just opened, in the early 1960s, to the northeast through El Caballito Circle, each day more elliptical. Mxim-2-3-6-1, Compañía Mexicana de Aerofoto, Mexico City, ca. 1964. With permission from Compañía Mexicana de Aerofoto, wo/r.



Figure 11: Oblique view of El Caballito Circle in 1949, already showing El Moro and the Corcuera buildings. Mxim-2-3-4-4, Compañía Mexicana de Aerofoto, Mexico City, June 11, 1949. With permission from Fundación ICA, flight 5968.



Figure 10: Oblique view of the Circle to north, when urban transformation, in the early 1940s, becomes evident, with the first high buildings. Mxim-2-3-4-1, Compañía Mexicana de Aerofoto, Mexico City, ca. 1940. With permission from Fundación ICA, flight 1794.

disappeared as soon as the National Lottery began construction on the site of the El Moro building by comparing **Figure 2** (1932) with **Figure 14**. In the former, the gardens and buildings of the Tívoli del Eliseo take up a good part of the photograph while in the latter the foundations of the El Moro Building can be seen and the Tívoli has disappeared altogether. In its place, several new blocks have emerged and there is barely a vestige left of the park as a simple courtyard garden within the ancient Buenavista Palace (1805).³¹

In pace with the growing city, the circle changed with the transformation of the various streets, avenues and boulevards, and later arterial roads that converged on and departed from it. The route of the Paseo de la Reforma, driving city expansion to the southwest and west, and

the opening of Reforma Norte to the north would radically change the appearance of the circle and its northeast side forever, as can be seen in **Figure 9** (1964). Now, as Chava Flores sang, 'Reform came to Peralvillo'.³² In the nineteenth and early twentieth century, residents strolled along the avenues that met at El Caballito, but as time went by, pedestrians gave way to carriages and later Model T Fords. Streets were opened and paved, medians and sidewalks were built for pedestrian traffic, and over time pedestrian spaces were reduced to a minimum to increase space for vehicular traffic, which has not stopped growing for nearly a century. A comparison between **Figure 16** (1963) and **Figure 17** (Feb. 8, 1978) illustrates this process. In fact, since the 1940s ever more cars can be seen parking at the circle and in the surrounding area, particularly at the southeastern corner where Avenida Juárez begins and on both sides of Paseo de la Reforma.

As the circle received traffic from many parts of the city, it was common until the 1920s to see people of diverse socioeconomic classes walking here or even stopping at the statue. Gradually it changed to the point where the flow of the traffic created a centripetal force that would literally spit pedestrians out to the edges, and the monument became more of a negative pole than an attraction to pedestrians. **Figure 18** (1936), **Figure 3** (July 6, 1949), **Figure 5** (February 1953) and **Figure 16** (1963) depict this process, as the monument increasingly repelled more than it attracted pedestrians.³³ As aerial photographs enable more of a macro analysis, we can see details such as this that would easily escape a street level view, where the pedestrians are always present, but it may be more difficult to observe how traffic negotiates the space.

In this respect we could draw a parallel between the micro level of the intersection and the macro level of the city: up to the 1950s, both had always had a magnet, drawing people to their respective center in every sense – commercial, political and cultural. From that time



Figure 12: This vertical view from 1972 shows all the circles along Reforma Avenue, from El Caballito to the west. Mxim-2-3-7-1, Compañía Mexicana de Aerofoto, Mexico City, March 18, 1972. With permission from Fundación ICA, flight 2346/21.



Figure 13: Vertical view of the circle in 1958 with a west side very different from the 1930s. Mxim 2-3-5-5, Compañía Mexicana de Aerofoto, Mexico City, 1958. With permission from Fundación ICA, flight 593D-1.

on, the attracting center began to disperse into many small centers, with unbridled growth that proliferated unchecked throughout the second half of the twentieth century, as the city became a metropolis of many cities fused together.

As a result, over the next few decades, the new centers at the edges (Ciudad Neza, Tlalpan, Santa Fe, Xochimilco, Naucalpan, Chalco, Ecatepec, among others) would in turn

become more frequent subjects of aerial photographs. In the 1960s and 1970s (as we mentioned earlier), more attention was being paid to other urban spaces. Mexico City was no longer just the central area, and there began to be more flights over the south and west in step with the changes described here. The birth of Ciudad Satélite in the 1950s and the Olympic City, with its multitude of sports facilities in the 1960s, among others, were triggers of this accelerated growth of the city 'within the city and outside the city',³⁴ but also of the proliferation first of housing projects and later of shopping centers located towards the poles of the metropolis, such as the Multifamiliar Miguel Alemán (1949), the Multifamiliar Benito Juárez (1952), the Conjunto Urbano Nonoalco Tlatelolco (1964), Plaza Universidad (1970) and Centro Comercial Perisur (1979), among others.

Thus, as shown by the photographs taken from the air, this space began as a place where streets and people met and came together,³⁵ but that characteristic faded away through the course of the twentieth century. It was such an important landmark that it set the standard for the bustling city; its rapid transformation was caused by a powerful interest in controlling the city's urban spaces. In a few short decades, priority given to vehicular traffic and the interests of those who owned the surrounding lands would determine the fate of the circle, its urban design and the buildings around it, as first the National Lottery and later the federal government itself literally pushed



Figure 14: Vertical view of the circle, north side, in the 1930s. Mxim-2-3-3-4, Compañía Mexicana de Aerofoto, Mexico City, 1936. With permission from Fundación ICA, flight 91/86.



Figure 15: Vertical view of the circle and west side, with the last green spaces that will disappear. Mxim-2-3-3-5, Compañía Mexicana de Aerofoto, Mexico City, 1934. With permission from Fundación ICA, flight 89-90/39.



Figure 16: Vertical view of the Circle and east side with part of the new Reforma Avenue to north. Mxim-2-3-6-4, Compañía Mexicana de Aerofoto, Mexico City, 1963. With permission from Fundación ICA, flight 1821.

construction towards the sky. In addition, many private interests erected tall buildings, and eventually the circle became the site of some of the tallest buildings – the most recently constructed, the Torre de Caballito (1988) stretches up thirty-four stories – and one of the most pedestrian-unfriendly intersections in the city;³⁶ that is, one of the many places that, for the last half century, have been driving pedestrian traffic away.

For centuries, El Caballito was one of the city's main areas of leisure and recreation; first as a marsh, then for the various buildings and facilities around the intersection such as the Plaza del Paseo and the Tívoli del Eliseo in the nineteenth century, the Pane swimming pool and the El Caballito theater in the twentieth century (the latter survived until the opening of Reforma Norte). It was also a meeting place and a site of both celebratory and protest demonstrations, which will become more evident when we examine street level photographs. But by the mid-twentieth century, the circle became less and less a place where people could congregate and meet,³⁷ to the point where it lost every trace of human activity – in the center of the circle, of course, but even on the perimeter, as it became reduced to merely a space for vehicles and surrounded by tall public and private buildings. In fact, if we visit the intersection today, we see that merely remaining in one place to observe is difficult; we are buffeted by the flow of pedestrians streaming from sidewalk to sidewalk, and the unusual sight of someone standing still might attract the curious eye of a security guard who seems to wonder why you are strolling around the circle instead of crossing from one side to another. In summary, in a short half century, El Caballito has become a place where you are not supposed to be: traffic flows unceasingly – nothing and no one should stand still there.

To conclude, it is worth noting that if one of the first flights made by Compañía Mexicana de Aerofoto in

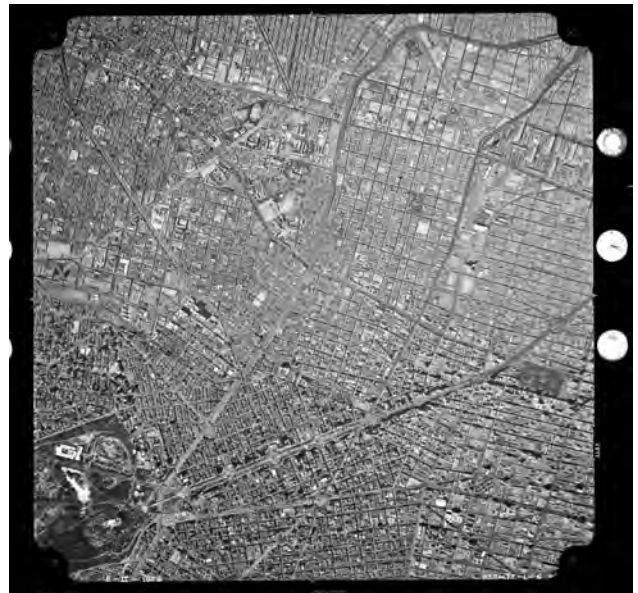


Figure 17: Vertical view of the Circle and east side, completely different from the 1930s. Mxim-2-3-7-2, Struck Fotogramétrica Internacional, Mexico City, Feb. 8, 1978. With permission from Struck Fotogramétrica Internacional, 1978.

1932 gave rise to the assembly of the small visual corpus described here, that also produced one of the last sets of aerial photographs to still show a Mexico City with a low profile (one and two stories high), with large swaths of green everywhere. In a few years, the city would change drastically, as we have seen, with functionalist planning and urbanism that largely copied the United States; 'Chicago in Mexico!' The ideas of the city and urbanism that were conceived during those decades can be deduced by tracing this group of photographs, which corroborate the efficiency with which the 'organization' of the city was achieved from the perspective of the elites: vehicles were



Figure 18: El Caballito Circle from a very low angle in 1936 that shows the beginning of urban transformations just in its northwest corner. Mxim-2-3-3-6, Compañía Mexicana de Aerofoto, Mexico City, 1936. With permission from Fundación ICA, flight 92/195.

given priority over pedestrian traffic, as was construction investment and vertical growth, in spite of the ever present danger of earthquakes, always for the sake of increasing land value which shot literally skyward.

Much remains to be analyzed. The street view photographs will enable us to observe other aspects that have not yet been examined and to confirm some that we have noted here. They may suggest new hypotheses and alternate explanations for the transformation of this site, which has so often been drawn, painted and photographed as a symbol of the modern city, whether of the eighteenth, nineteenth or twentieth century. It has constantly been called on to represent the cosmopolitan, international face of Mexico City; a city which, consistent with the centripetal force of which we spoke earlier, has neglected its destiny for the sake of constructing an image of so-called modernity. And El Caballito has been an emblem of this since its beginning. Perhaps segregation is inevitably implicit in everything that is touched with the brush of modernity.

Finally, we hope that this study will stimulate further investigation into photography of urban spaces, especially with regard to social research using photographs of the city. As we have seen, over the course of a century and a half, the city has been observed and captured by many camera lenses, and from many different shots, angles and views. These reveal the variety of aerial photographic visions of the city that have been created at different times, but also how the city has been viewed and how it has been presented by various interests in turn.

Author's Note

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Translated by Margaret Schroeder

Notes

- ¹ The statue was originally installed in 1796 in the center of Mexico City's Plaza de Armas square. When the movement for independence began, the sculpture was shut away for more than three decades in the ancient courtyard of the university. Finally, in 1852, it was set at the intersection which is the subject of this study, where the street Paseo de Bucareli extends southward and Calzado del Calvario eastward. There it stood for a century and a half, until 1979 when it was moved to its present location in the Plaza de Minería, also known as Plaza Tolsá, in front of the Palacio de Minería.
- ² An example is the very interesting research about social life in small urban spaces for the case of different squares at New York City, comparing video records that reveal lots of uses and appropriation of this urban space. See more at Whyte (1979).
- ³ We have only one sequential record of this type, which will be analyzed when all the aerial photographs in the present study are incorporated into the study.
- ⁴ Active members of the Association: Ignacio Avilés, Ladrillera La Huerta, Compañía Minera Las Dos Estrellas, Federico Mariscal, Carlos Obregón Santacilia, as well as many other persons and capital businesses, stakeholders and others involved in urban and architectural development, zoning changes, speculation, and construction at the time (*Planificación*, 5, January 1928).
- ⁵ Contreras had studied at Columbia University and was one of the main members of the first post-Revolutionary administrations to introduce functionalist urban planning. He organized the First Mexican Congress of City Planning, which was held in 1927. Its main task was to promote methods of 'ordering' the urban 'disarray', particularly by generating profitable urban transformation. Contreras's historical importance includes that of having been a *modernizer* in keeping with the industrial and populist ideology of the Maximato period. Although Contreras's proposals were not implemented in their entirety, they were an important touchstone in subsequent planning policy, especially in Mexico City. See López Rangel (2003).
- ⁶ References to the United States so pervaded the discourse that some of the terms began to show this influence, such as the use of '*sugestión*' for 'suggestion', instead of the correct Spanish word '*sugerencia*'.
- ⁷ See in the Orozco y Berra Map Library, Servicio de Información Agroalimentaria y Pesquera (Sagarpa), Joseph Antoine Decaen and Victor Debray (1866). Colección Orozco y Berra D.F. Varilla 03 951-OYB-725. On a related note, many years later in 1930, land in the Anzures neighborhood near Chapultepec Hill was advertised as being 'among the best in the city' (*Obras públicas* 4, April 1930).
- ⁸ For more details on this process, see the Introduction and Guidelines, Aguayo and Roca (2012).

- ⁹ El Pescador was begun in 2002, and has been developed through several initiatives. For more information see the following digital photo libraries: *Fotógrafos y editores franceses en México* (French photographers and publishers in Mexico), nineteenth century (available at <http://lais.mora.edu/ff>) and *Marcas de fuego* (Brands) (available at <http://www.marcasdefuego.buap.mx>) and various online texts on the process of developing the *El Pescador Data System for Image Files*, and on how these photo libraries operate (available at <http://durito.nongnu.org>).
- ¹⁰ The company was acquired in 1965 by Ingenieros Civiles Asociados, which had been one of its main clients. See Osorio and Pliego (2007: 28).
- ¹¹ Such as those published by historian Alejandrina Escudero and Ingenieros Civiles Asociados (ICA) themselves.
- ¹² In the following, I draw on opinions expressed by Captain Efraín Ovando from an interview with him, July 3, 2009, by Lourdes Roca in Los Reyes, Coyoacán, Mexico City. In the interview, the retired captain emphasized the prestige enjoyed by the profession of aerial photography at the time due to the high earnings it yielded, especially when the government released its monopoly on the industry and commercial firms proliferated, hiring pilots with specialized training. Captain Ovando had a successful career in aerial photography flying and was considered one of the most skillful pilots with this specialty. In the 1950s, he earned as much as fifty thousand pesos a day.
- ¹³ In fact, the original training given to these pilots in aircraft intended exclusively for photography was military. It was after their military flight training that they moved to specialize in aerial photography flying.
- ¹⁴ Its direct antecedent was the Military Geographical Commission, created in February 1939, assigned the task of creating the *Carta Militar de la República* (Military Map of Mexico) and of carrying out geographical studies of national defense. A program of making a 1:100,000 map of Mexico using aerial photographs was proposed. The project was begun in 1942. The first map sheets were made from *trimetrogon* aerial photographs, a system in which three cameras work simultaneously, a central vertical camera and two oblique cameras, one on each side. These photographs were taken during World War II by Mexican-American crews [sic]. See references published by INEGI (Mexican Statistical Institute) (Cartographic Department) (available at <http://mapserver.inegi.gob.mx/geografia/espanol/prodyserv/marcoteo/dias/dias.cfm?c=237>) and by SEDENA (Mexican Department of Defense) (Department of Cartography) (available at http://www.sedena.gob.mx/index.php?id_art=25) (accessed May, 2010).
- ¹⁵ Today, memories of experiences such as that of Captain Ovando are anchored in the collective imagination of the 1940s based on the heroism of the members of Squadron 201 and their achievements. During a short stroll in the former town of Los Reyes, now a part of the Mexico City borough of Coyoacán, in just a few blocks I observed various people offer respectful greetings to 'The Captain', who still wears the Squadron 201 emblem on his lapel.
- ¹⁶ On January 5, 1942, the president of Mexico, General Manuel Avila Camacho, and Secretary of National Defense Lázaro Cárdenas del Río issued the presidential decree which created the Military School of Mechanical Specialists in Aviation (EMMEA in Spanish) which was first housed in a hangar at the Second Air Regiment located at the Balbuena Flats in Mexico City. Six months later (in July 1942), the EMMEA was moved to the Azcárate building located in what is now known as the International Civil Aviation Training Center (CIAAC) at the Mexico City International Airport where it remained until 1950. See http://www.sedena.gob.mx/index.php?id_art=550 (accessed May 2010).
- ¹⁷ As we noted earlier, the magazine *Nuestra ciudad* used to offer a free aerial photograph as a gift included with a sample issue. Of course this taste for the 'bird's eye view' dates much farther back than aerial photography, as it was shaped by the many panoramic pictures of the city that pre-dated photography and served in great measure to build knowledge about the city. For an extended reflection on aerial views of the city see the chapter by Fernando Aguayo and Eulalia Ribera Carbó in Aguayo and Roca (2012). On the current state of the topic, note that in a cursory online search on the topic, the top hits are sites that offer aerial photographs for advertising and billboards. In the present day, they are even shot from remotely controlled zeppelins. Of course the rise of satellite photography has cut the bottom out of the market for aerial photography, dealing a strong blow to the remaining aerial photography companies. Our concern is that the legacy of aerial photography built up over the decades may still be preserved, as the ICA Historical Archive has helped to do.
- ¹⁸ 'Orthophotography' (from the Greek *orthós*: correct, exact) is a representation of an area of the ground in which all the photographs are at the same scale and free of errors and distortions. It represents the area in the same way as a map. Orthophotos are created from aerial photographs that have been digitally corrected to make them equivalent to orthogonal projections without perspective effects. This makes it possible to take accurate measurements, which cannot be done on an uncorrected aerial photograph because there is always some distortion due to perspective, height or movement. The process of digital correction used to create an orthophoto is called *ortorectification*. An orthophotograph (or *orthophoto*) thus contains both the detail of an aerial photograph and the geometric properties of a planar map. See <http://es.wikipedia.org/wiki/Ortofoto> (accessed May 2010).
- ¹⁹ Fortunately for us, at least the year was recorded for most photographs, and sometimes the exact date or at least the month. In a few cases this information is entered at the bottom edge, but often the date is recorded in other documents and we can retrieve it. The focal length, spherical gauge, time of day and

shot number were often printed on the side edges of the negatives. Nevertheless, as this information was automatically recorded by the equipment, and various sources have suggested that the meters often were not working or were not reset, the data they provide has not been taken into account.

²⁰ Interestingly, the Fundación ICA photographs were cut apart much less often from the 1950s onward. From that period on, there are many more uncut rolls, or cuts were only made judiciously for particular projects. (Negative rolls from other companies were mostly uncut.) This suggests that prior to the 1950s, the rolls were not used complete as much as they were used as separate photographs, probably to construct mosaics. Unfortunately, as far as I could ascertain, no record was kept of these uses involving cut negatives. Some rolls were as long as two thousand negatives.

²¹ A function of the relationship between focal distance and height.

²² Plus one case rejected because of the physical condition of the item. These negatives had been handled often for various purposes; they bore marks and adhesive from tape or the acetate was torn, causing loss of information. The archivists have done a commendable job of cleaning these items, but there are inevitably some that are beyond restoration.

²³ See Casimiro Castro's mid-nineteenth century lithographic work. For example, Castro (1866).

²⁴ The reference code used to document the collection is structured as follows: Mexico = mx, Instituto Mora = im, El Caballito (Collection 2), Aerial Photographs (Document group 3), Decade (Subgroup 3 = 1930s, 4 = 1940s, and so on up to subgroup 8 = 1980s), followed by a number from a consecutive series to identify each photograph individually.

²⁵ The present part of the study begins with aerial photography, leaving the investigation of photography from other heights and from street level for a future stage, as noted earlier. The thirty photographs chosen include both zenith and oblique views from the five decades included, in order to give a comprehensive view, both vertical and angled, of the site during the half century under consideration.

²⁶ Of the iron shell that was constructed, only the central part was later recovered; it was converted into the Monument to the Revolution (constructed 1933–1938).

²⁷ One of the examples of how this site stimulated property value increases in the west of the city is an advertisement, found by Katzman, for the La Verónica neighborhood, in which the developers promoting the zone emphasize that it is as close to the center of the city (which they visually identify as El Caballito, by means of a drawing of a hand tracing a circle with a compass to show the distance) as it is to the National Palace. See Katzman (1993: 38).

²⁸ Because 'modernity must be understood by the peculiar character of the historical manner of civilizing summation that began to prevail in European society in the sixteenth century' (Echeverría 2005: 144).

²⁹ After the old Lottery building, originally the home of Representative Tomás de la Torre y Mier on the north-west corner of the circle, had been demolished.

³⁰ Strictly speaking, El Moro was the third tallest, because the second tallest was the Corcuera Building, located diagonally across from it. However, as it was damaged in the 1957 earthquake and demolished soon after, it is usually no longer taken into account. Studies such as this one can restore the importance and memory of a structure like the Corcuera Building, which formed part of the 'modern' image that planners sought to create around the circle in the 1940s and 1950s, where the building stood for nearly twenty years, as we show from a study of the following visual corpus of photographs of the circle.

³¹ The building was also built by the Valencian Manuel Tolsá and is today the San Carlos National Museum.

³² Available at <http://www.youtube.com/watch?v=CXPiNAQsQ4E> (accessed June 2010).

³³ It is no coincidence that the traditional practice of mounting demonstrations from El Caballito to the Zócalo eventually evolved to a wider ellipse; that is, demonstrations began to set out from the Monument to the Revolution to the Zócalo. It had become impossible to stand at the Circle, and even more so for a crowd to assemble.

³⁴ As the architect Mario Pani was fond of saying. See De Garay et al. (2001).

³⁵ Those who lived in Mexico City between the 1930s and 1970s remember when the circle was a meeting point, and even today we can still hear people from that generation say, 'I'll meet you at El Caballito'.

³⁶ Today, to cross the intersection, a pedestrian must wait for at least three traffic lights (which allot much more time to vehicles than to pedestrians), and the average time required is ten minutes.

³⁷ Perhaps in large measure, among other factors, it is because of the desire for the new architecture and urbanism imagined by the middle and upper classes, as Fernández Christlieb would say, who want to live inside their homes, creating for themselves the concept, so firmly internalized in certain sectors, that carrying out their activities in the street is 'unsuitable behavior for modern families'. See Fernández Christlieb in Ribera Carbó (2004: 90).

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