

The effects of the Peninsular War on the cartographic production of Zaragoza.

This article documents and analyses the evolution of historical cartographies of the city of Zaragoza and the effects that the French invasion (1808-1814) had on their production. The strategic enclave that the city constitutes in the national framework, as well as its special resistance to the subjugation of the invading army, represented by the two important Sieges of Zaragoza (1808 and 1809), led to the production of numerous maps as graphic support by foreign agents. In particular, the French army initially made use of existing plans compiled before the outbreak of the invasion; however, these documents were notoriously deficient in accuracy and scale, which led to poor planning and ultimately to the failure of the first siege. After this, and with a view to a new attack, the French military engineering corps undertook intensive topographical survey work, both city and its immediate surroundings, the quality and detail of which proved decisive for

military success in 1809. In this research we have documented this graphic material, mostly unpublished, by consulting different European historical archives, allowing us to learn about the development and scope of the prospective work carried out around the city of Zaragoza. These cartographies not only reflect the urban configuration, the defences and its territory, but also incorporate strategic information relating to the planning of the attacks, the position of the troops and the objectives of the attacks to achieve the surrender of the city; all of which allows us to understand the extent of these actions, the landscape transformations carried out and their consequences for the city and its architectural heritage.



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1. INTRODUCTION

The city of Zaragoza has been a fundamental part of the historical development of the Iberian Peninsula, acquiring special importance during the Middle Ages and the Modern Age, after becoming the capital of the thriving Kingdom of Aragon (Fernández, 2007). This preeminent character, added to its strategic position in the network of roads that made up the peninsula and its connection with Europe, converted the city into a centre of special interest for the new powers, promoting its economic and social development (Navarro, 2003). As a result, the cartographic production that we can document on the city of Zaragoza is particularly profuse and sustained over time, even though its exponential development stands out during the Napoleonic Wars (Palanques & Calvo, 2018), specifically the two sieges that the city suffered (1808 and 1809).

Therefore, taking the city of Zaragoza as a case study, the aim of this work is to analyse and understand the process of the evolution of the cartographies dedicated to the Aragonese city according to the different uses and requirements that explain them; that is, those circumstances determined by the nature of the commissioner and the historical moment in which they were made (Ministerio de Defensa, 2008). In this sense, the French invasion is a milestone in the analysis of these cartographies, since during this period we documented the most detailed, precise and extensive samples dedicated to the planimetric study of Zaragoza, its surroundings and its landscape.

Specifically, thanks to extensive research work in different archives at both national and European level, we have been able to document a set of previously unpublished cartographies made by the French invader for strategic-military purposes during the years of the two Sieges, which we will analyse in this contribution. These graphic documents—which we add to other graphic and written sources from the period and prior to it—allow us to broaden our knowledge and advance in the

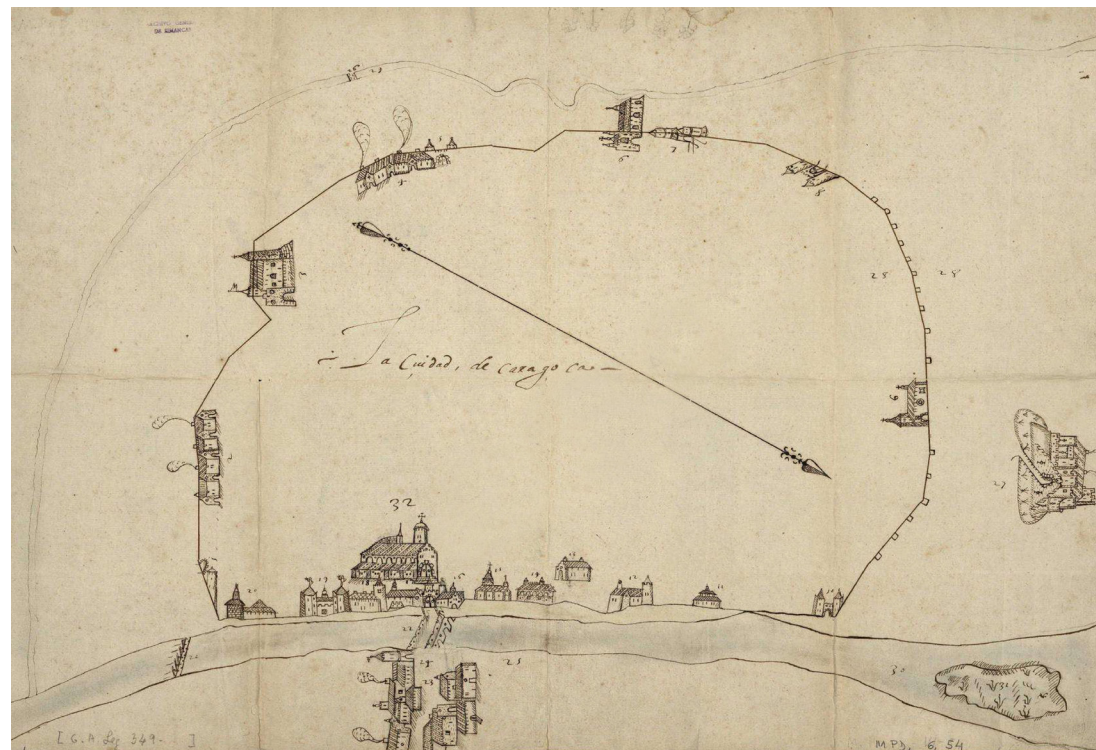


Figure 1. Captain Francisco de Miranda, 1592, *La Ciudad de Zaragoza*. Archivo General de Simancas, MPD, 60, 054.

analysis of the city, the territory and the landscape of Zaragoza, part of whose heritage disappeared or was transformed during this tragic conflict.

2. BACKGROUND TO THE CARTOGRAPHIC PRODUCTION OF THE CITY OF ZARAGOZA

During the second half of the 16th century, the so-called *Alteraciones de Aragón* (Alterations of Aragon) took place in 1591, and Philip II became concerned about the defence and fortification of the Aragonese territory in the face of a possible invasion by the French, taking advantage of the internal political instability (Gracia Rivas, 1992).

As a result, a possible improvement in the fortification of the Aragonese capital was considered and one of the first documented maps of the city was made (Ximénez de Embún y Cantín, 1955), which dates from 1592 and was drawn up by Captain Francisco de Miranda as a sketch and as a graphic support for his Plan for the fortification of Zaragoza (Fig. 1). Although this plan reached the Court, the monarch decided to discard it for economic and political reasons, and commissioned a new, more delimited fortification plan from the Sienese engineer Tiburzio Spannocchi (Cabodevilla-Artieda, 2020).

The plan by Miranda, which was to serve as an instrument for the Court to make decisions on the military defence of the capital, showed the defensive state of the city. In this sense, there is a significant exercise in abstraction in the representation of the urban morphology —which is not depicted— and only the most important heritage elements and gates of the walled perimeter are highlighted, which were to serve the purposes of the mentioned fortification plan. In addition, for an overall understanding of the territory, the plan

highlights those architectural or natural elements outside the walls that also conditioned the defence of the city; especially the palace-fortress of the Aljafería and the seat of the *Santo Oficio* (Holy Office) on the right of the plan, the river Ebro that delimits the city to the north (lower part of the plan) and the bridge that crosses it and gives access to the city from the suburb, as well as the river Huerva that meanders through the city. In any case, it should be noted that the orientation indicated on the plan is anticlockwise.

Later on, during the 17th century, we document another plan of the walled Zaragoza made between 1605 and 1614 by an anonymous Jesuit priest (Fig. 2). The author made this drawing in order to request the construction of a Professed House in the city from the authorities of the Society of Jesus in Rome, for which he made a proposal for its location on this map (+).

The drawing represents the urban layout of the city and identifies the exclusively religious buildings —churches, parishes and monasteries— by means of a legend, in order to show that the chosen site was far from the headquarters of other orders or ecclesiastical institutions (Álvaro, Criado, Ibáñez & Maeztu, 2010).

This plan allows us to understand the morphology of the city in a schematic way, as we can differentiate between a consolidated nucleus located next to the river —that is, the Roman city— and the suburbs of an organic nature that are located around it and which do not follow a specific pattern in their layout. In order to enhance this differentiation —main nucleus versus suburbs— the author introduces some graphic transformations that move away from the built reality in order to highlight the main urban spaces through the width of its streets; among which, we can highlight the ring road that surrounds the foundational nucleus, as well as the main streets that articulate it on its two axes.

Along with these two maps, we highlight another one from the beginning of the 18th century, whose author and the exact date of its creation are unknown, although some authors date it to around 1712 (Capalvo & Mateo, 2014). Unlike the plans studied previously —which served as an instrument for strategic-military purposes or religious enterprises— the purpose of the plan we will now analyse was to reliably represent the morphology of the city of Zaragoza as an exercise in urban verification (Fig. 3). Moreover, this is the first plan that accurately depicts the territory surrounding the city, specifying the composition of the landscape

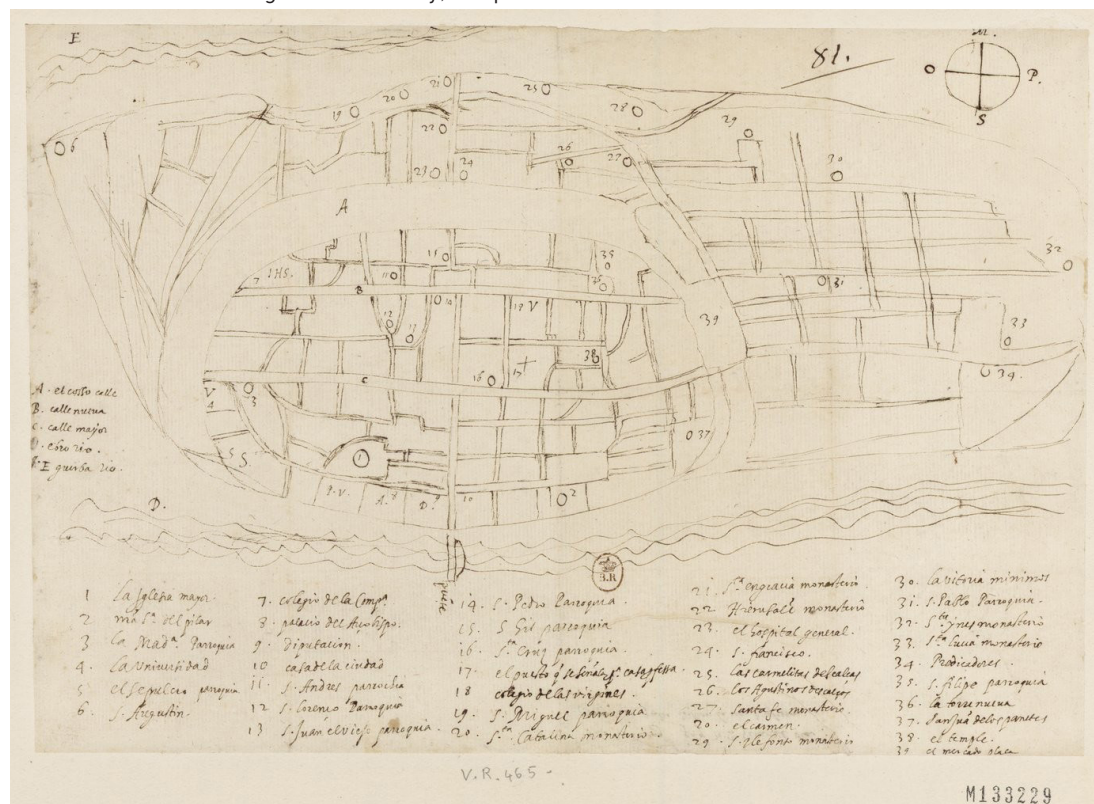


Figure 2. Anonymous, 1605-1614, *Collège de Saragosse, Maison professe: plan à main levée de la ville, situant l'emplacement proposé pour la Maison professe*. Bibliothèque nationale de France, département Estampes et photographie, FOL-HD-4 (6).



Figure 3. Author unknown, ca. 1712. *Plano de la ciudad de Zaragoza*. Archivo Cartográfico de Estudios Geográficos del Centro Geográfico del Ejército, Ar. F-T.4-C.3-110. Approximate scale 1:3700.

through the representation of roads, fields and water resources, or the configuration and uses of agricultural land and livestock in the region.

Regarding the graphic construction of the urban fabric, this is an exercise that shows with great accuracy the morphological particularities of the city, clearly determining the shape of its empty spaces —streets and squares—, as well as that of its blocks. Moreover, in order to complement the planimetric information, the author highlights the city's most important temples —La Seo Cathedral, the Basílica del Pilar, San Pablo, etc.— by means of the horizontal section of their floor plans, which constitutes a novel contribution to the knowledge of the city's heritage. This representation technique, in which the drawing of the city is combined with the section of temples, had already been used by Bufalini in the mid-sixteenth century and would gain popularity thanks to Giambattista Nolli's map of Rome in 1748 (Bevilacqua, 2018).

3. A FIRST APPROACH TO MILITARY CARTOGRAPHY DURING THE WAR OF THE SPANISH SUCCESSION (1701-1714)

The city of Zaragoza was one of the key scenarios during the War of the Spanish Succession, when in 1710 the troops of the future King Philip V and Archduke Charles clashed in their struggle for the Spanish throne in the so-called Battle of Mount Torrero (Borrás, 1973). As a result of the battle, Philip V's troops were defeated and Archduke Charles was crowned king of the Crown of Aragon; an important milestone in the course of the war as it was a major setback for French pretensions, which explains the interest of the British historian Nicholas Tindal in illustrating this battle in a map of 1744 (Fig. 4).

This new cartography aims to represent the morphological and compositional conditions of the territory surrounding the city of Zaragoza, where most of the military operations took place during the conflict. For this reason, the representation of the urban core of the city is simplified by means of

a typological synthesis in perspective, far removed from the built reality, as the city did not play an important role during the battle and was therefore not the object of study. On the other hand, the author pays special attention to the depiction of Mount Torrero, the place where the armies engaged in conflict to the south of the city. This is characterised by a pronounced and irregular topography around which the author draws the positions of the military fronts. He also describes the conditions of the landscape through an exhaustive analysis of the types of crops, noting their height, which are fundamental to understanding the particularities of the terrain and explaining the advances and distribution of the armies across the terrain.

4. THE USE OF CARTOGRAPHY AS A DETERMINING FACTOR DURING THE SIEGES OF ZARAGOZA (1808 AND 1809)

In February 1808, prior to the start of the military actions leading to the conquest of the Iberian Peninsula, Napoleon created the *Bureau topographique de l'Armée d'Espagne* (Topographical Office of the Army of Spain), made up of French engineers to obtain geographical information on this territory and developing new maps on the basis of existing ones. Among the cartographies compiled, those made by the Spanish cartographer Tomás López in his great compendium published in 1804 under the title *Atlas Geográfico de España* (Geographical Atlas of Spain), stand out. However, the drawings made by this author were of little use for the elaboration of cartographic support for the French army and its knowledge of Spanish territory for military purposes; especially, “due to their inaccuracy and the fact that they were of different scales—between 1:400,000 and 1:164,000” (Chías & Abad, 2016: 267).

During the French invasion of the Iberian Peninsula, the city of Zaragoza was the scene of one of the most important and decisive events in the course of this war. The Aragonese capital suffered two brutal sieges—the first in 1808 and the sec-



Figure 4. Nicholas Tindal, 1744, *Plan of the Battle of Saragossa fought on 9 August 1710, between the Allied troops under Lieutt. Genl. Stanhope and the Marshal Count Staremberg, and the French under the D. of Anjou: the Emperor Charles, and the D. of Anjou (King Philip) being both Present*, Biblioteca Digital Real Academia de la Historia, C-014-084.

ond in 1809— as a result of the unexpected and heroic resistance of the people of Zaragoza to the French Empire’s pretensions of conquest. As a consequence, during this period, a fascinating exercise in cartographic production was carried out around the city of Zaragoza by the French army. A set of plans made by means of precision sur-

veying on the ground, which has been preserved and remained unpublished (for the most part) to date, and which we will deal with later on. However, we can say that this compendium was crucial to the surrender of the city by the French, since, as we shall see, the absence of a prior study of the terrain caused the first attempt at conquest to

fail, causing the demoralisation of the Napoleonic army.

4.1 AN IMPROVISED CARTOGRAPHIC PRODUCTION AROUND THE FIRST SIEGE

During the First Siege of Zaragoza, between 15 June and 13 August 1808, the French army faced unexpected and tenacious resistance from the city, which repulsed the enemy invasion and prevented a rapid conquest of the city. After several days of bloody and unsuccessful battle, the French command was forced to change strategy on the spot with the aim of surrendering the city, for which it commissioned its engineers to produce several maps to support the planning of the new attacks. Specifically, from this set —the exact number of which we cannot specify— we have found two previously unpublished plans of varying scale and scope: a general analysis of the territorial context and a more detailed study of one of the siege fronts.

The first plan (Fig. 5) was made on 23 June —eight days after the Siege began— a general study of the territory to the southwest of the city, which does not accurately represent the space contained by the two great rivers that delimit it and in which the French side deployed all its armies (Casamayor, 2000). For this reason, the author focuses on the study of the southern area and, more specifically, the south-western front of the city, through which they tried to break through to penetrate the interior. Moreover, as this is a siege rather than an open field battle, this close-up does not analyse the composition of the landscape as a determining element for the deployment and movement of the troops, but rather schematically notes the morphology and general conditions of the territory. The reason for this is that it was primarily intended to serve as a tool for locating the position of the troops on the southwest front of Zaragoza and to indicate the buildings to be attacked, the only elements of the city that are depicted in this plan.



Figure 5. French engineers, 1808, *Croquis de la position de Saragosse et des environs au 23 juin 1808*. Archives Nationales, AF/IV/1607, Plaquette 1/I, Pièce 24.

Faced with the slow advance of the French troops during the First Siege, Napoleon gave the order to intensify the attacks and open new battle fronts against the city. Now, a new and improvised analysis of the territory and its topographical and defensive conditions made it advisable to open another front on the eastern bank of the River Huerva, to the southeast of the city (Aquilué, 2021). This

was a space where the river converged with an irregular urban façade that included the convent of Santa Engracia, and in front of which there was an elevated promontory that dominated the space and, therefore, on which the batteries could be placed. This new strategy was represented in the second plan that we have been able to document (Fig. 6), which now shows in great detail the set

of elements —landscape, topographical, architectural, etc. — that articulated this interstitial space, as well as the position of the cannons and their targets —the wall gates and, especially, the aforementioned convent of Santa Engracia—.

Finally, thanks to the combination of both strategies, the French army managed to open three breaches and gain access to the city: from the southwest through the gates of El Portillo and El Carmen, and from the southeast through the convent of Santa Engracia (Laguéns, 1997). However, from inside the city a fierce defence was maintained by the citizens, who were being supplied by the allied troops from the north of Spain, who were operating from the northern front that had not been considered or studied by the French in their cartographies. As a result, on 13 August the invading army abandoned the city as it was impossible to take it, bringing to an end the First Siege, which turned out to be a failure given the lack of knowledge of the territory and the absence of a quality graphic support —not the result of improvised decisions— on which to plan the military strategy.

4.2 THE DEVELOPMENT OF AN UNPRECEDENTED CARTOGRAPHY TO CONFRONT THE SECOND SIEGE.

After this first defeat, the French command decided to produce a highly accurate cartographic apparatus that would faithfully represent the territorial context of Zaragoza and would serve to define the final attack that the city would surrender. To this end, changes were made in the direction of the French engineering team, with Colonel Dode, trained at *L'École d'application de l'artillerie et du génie du Metz* (Metz Artillery and Engineering training School) (Six, 1934), being appointed to draw up the plans of the Aragonese capital. This new management led to a substantial improvement in the quality of cartographic production, which greatly facilitated the French success during the Second Siege. In this sense, it should be noted that, as a sign of the quality of the drawings



Figure 6. French engineers, 1808, *Disposition de l'artillerie pour l'attaque principale [siège de Saragosse, juin 1808]*. Archives Nationales, AF/IV/1606/B, Plaqueette 4, Pièce 27.

made by the French army and their ease of understanding, the set of graphic conventions and the symbology that was devised and used in their representations would later be used by most Western countries, which would take on these codes as their own (Chías, 2018b).

For example, the numerous plans developed during this second stage took into account aspects such as topography, flood zones, types of vegetation and crops, as well as a detailed study of the hydrography of the area. A detailed compendium was compiled by means of fieldwork and represented by means of plans at different scales, ranging from a general representation of the territory to a detailed representation of the battle fronts. In addition, these plans also show the military strategy, such as the organisation of the troops, the location and trajectory of the batteries and the drawing of the targets to be destroyed, all of which make up an unprecedented exercise in the analysis and graphic reflection of the city of Zaragoza and its territory in times of war.

4.2.1 A THOROUGH WORK OF UPRISING IN THE NORTH OF ZARAGOZA

At the end of 1808, the French army managed to defeat the towns in the north of Aragon—the main cause of the failure of the First Siege—and was now able to take Zaragoza from its northern front, thus initiating the Second Siege of the city from 21 December 1808 to 21 February 1809. In this sense, the new cartographies produced during this new stage focused on the study of this northern front—not previously analysed—and the possibilities it offered in its objective of definitively surrendering the Aragonese capital. Specifically, we have been able to document two synthetic plans, and a final plan of the territory located to the north of the city, in which a small neighbourhood outside the walls known as the Arrabal stands out, which gave access to the city via the Puente de Piedra.

As for the first synthetic plan (Fig. 7), this is mainly

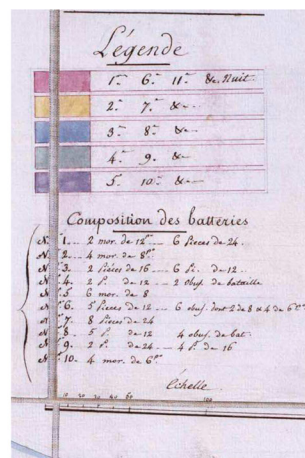
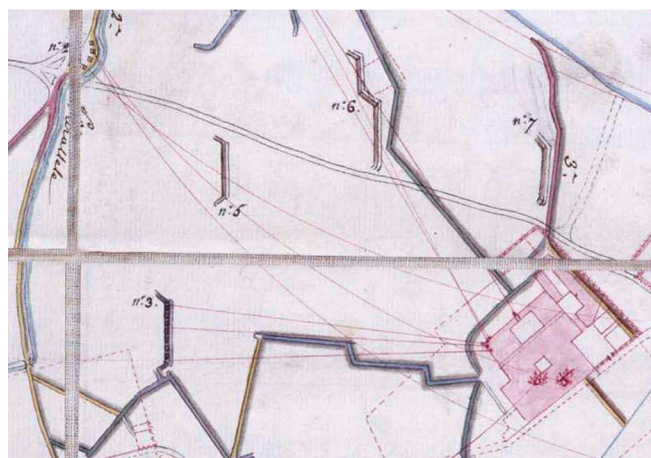


Figure 7. French engineers. 1808. *Plan des approches de Sarragosse Sur la rive Gauche de l'Ebre, avec les ouvrages Construits pour l'attaq[ue] du fauxbourg.* Biblioteca Nacional de España. Mr/42/635. Approximate scale 1:12700.



devoted to representing with great precision the complex water network around the capital, as this had been one of the main obstacles to the advance of the French troops during the First Siege. This plan shows the major elements —rivers and irrigation channels— but also the flood zones and natural pools of water resulting from the floods of previous years (Ruiz, 2018), which allows the author to design the new military strategy avoiding these geographical features. Moreover, as it is a plan whose purpose is to analyse the hydrographic context, the Zaragoza front is incipiently drawn, and other issues regarding topography, vegetation, or constructions are lacking in detail or non-existent.

A second plan (Fig. 8), equally schematic, again represents the same area, although this time on a smaller scale, approximating with greater definition the space surrounding the suburb of the city and being able to recognise the morphology of its architecture. In addition, this plan contains a coloured diagram that establishes the progression of the advances on the ground in relation to the hourly stages in which they were to take place (Puyo, Castañón & García, 2016) and identifies the number of the battery and its armament composition. The plan also uses war iconography to identify, among other things, the battalions, the position of the cannons and the firing targets.



Finally, after these two first approximation plans, we analyse the third and last plan (Fig. 9), also referring to the northern area, which summarises and expands on the information compiled in the two previous plans.

At first glance, we can see that the representation of the rural environment has been much more developed than in previous cartographies, so that issues that had been left unaddressed or undetailed regarding vegetation, topography and architecture are now resolved. For example, we can see that agricultural plots are now represented, and a differentiation is made between dry and irrigated farming (Aibar, 2009). All this detail responds to a

Figure 8. French engineers. 1808, 5eme. Corps d'Armée. Siège de Saragosse: Plan des attaques sur la Rive Gauche de l'Ebre. Biblioteca Nacional de España. Mr/42/637.

clear need on the part of the French army to know the territory through which it was to advance towards the conquest of the city. In other words, by identifying the different elements that made up the landscape, it was possible to prevent, for example, tall crops such as maize or olives, as well as the different water features from which they were supplied —flooded areas, irrigation ditches or canals— from impeding the advance of the French troops. In addition, the plan highlights the representation of the architecture, which is now drawn in greater detail and even identifies the religious function of some of these buildings —especially the Basilica of El Pilar— by their respective names and a latin cross.

4.2.2. THE COMPLETE REPRESENTATION OF THE CITY AND ITS CONTEXT

In addition to the plans we have just studied — dedicated to the northern shore of Zaragoza— we would highlight a final plan (Fig. 10) also belonging to this set of cartographies produced during the Second Siege; the only one that comprehensively represents the surroundings of the Aragonese capital and the whole of the urban fabric that formed the city around its two shores. The purpose of this plan was to represent the definitive tactic for the conquest of the city; a double simultaneous attack on two fronts which were precisely the most topographically complex (Aquilué, 2021).

As we have already indicated, during the First Siege the city was attacked mainly from the southern front where the Convent of Santa Engracia was located. A tactic that would be repeated during the Second Siege, although now the city would also be attacked from the north thanks to the thoroughness with which this area had been studied in the cartographies just seen (Fig. 7 to 9) and to having eliminated the flow of supplies from the northern towns.

This new combined strategy forced the division of the defences around the two fronts opened by the French army (Alcaide, 1830-31), weakening

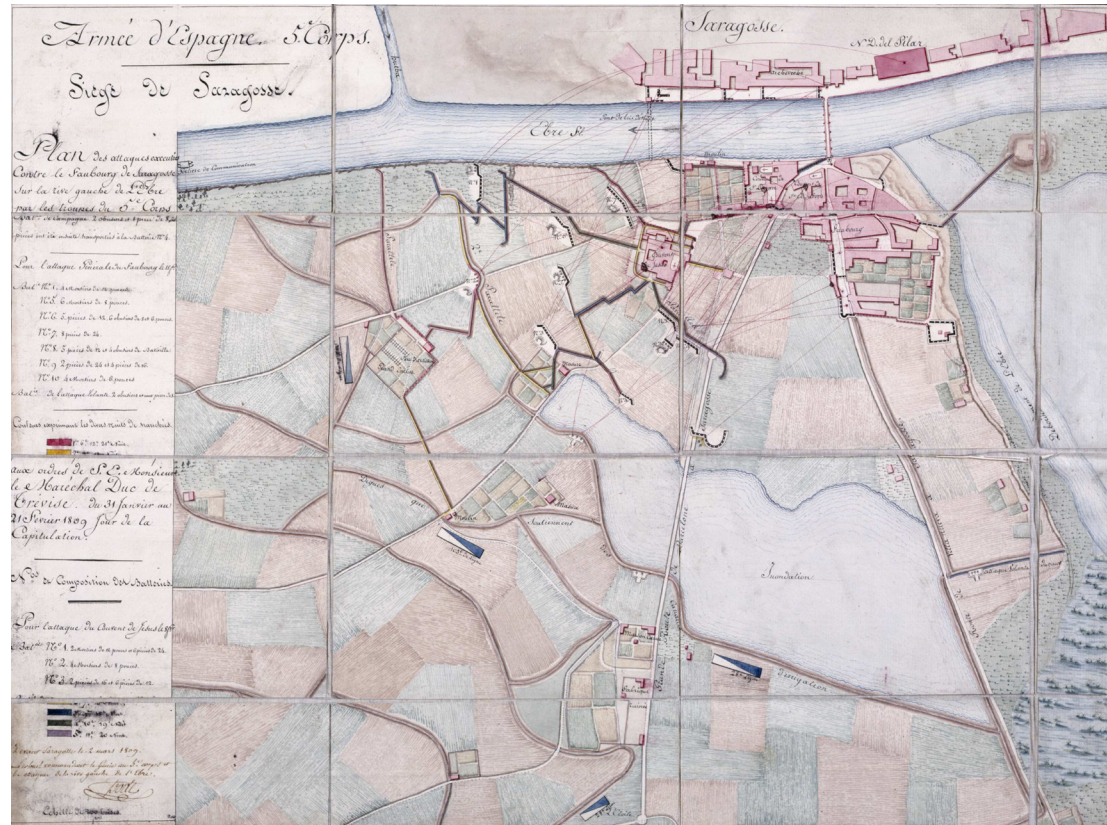


Figure 9. French engineers. 1808, *Armée d'Espagne, 5e. Corps. Siege de Saragosse: Plan des attaques executées Contre le Faubourg de Saragosse Sur la rive gauche de l'Ebre par les troupes du 5e Corps.* Biblioteca Nacional de España. Mr/42/634.

the response capacity of the Zaragozan militia, which was outnumbered and isolated by the enemy. Finally, on 20 February 1809, the capitulation of Zaragoza was signed under threat of further destruction of the city (Casamayor, 2000), as the French army had built a series of underground tunnels under the city in order to dynamite it. After the conflict, the city's heritage was completely destroyed, with the loss of a monumental and urban complex of great value. A tragic vision which,

in a letter addressed by Marshal Jean Lannes to Napoleon, he expressed in the following words: "The siege of Zaragoza is nothing like our previous wars. It is a war that horrifies. The city is burning at this moment at four different points, and bombs are raining down on it by the hundreds, but nothing is enough to intimidate its defenders [...] This is terrible. Victory is pitiful." (Villemain, 1857: 896).

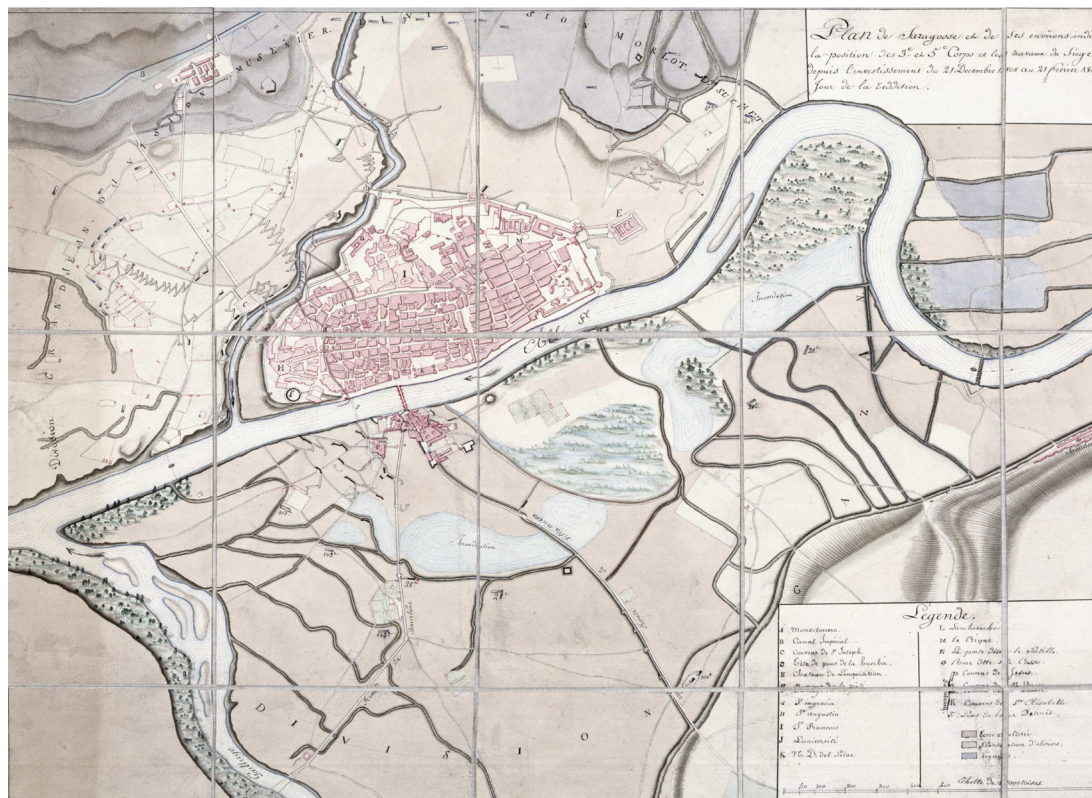


Figure 10. French engineers, 1808-1809, *Plan de Saragosse et des ses environs indiquant la position des 3e. et 5e. Corps et les travaux du Siege depuis l'investissement du 21 Decembre 1808 au 21 fevrier 1809 jour de la reddition*. Biblioteca Nacional de España. Mr/42/633.

5. THE USE OF FRENCH CARTOGRAPHY FOR OTHER PURPOSES

Given the impact that the Sieges of Zaragoza had on the European imaginary of the 19th century, a great interest arose in the study, representation and interdisciplinary commemoration of what happened (Lejeune, 2009). As far as we are concerned, the need to document and disseminate this heroic battle explains the numerous cartographic productions on the Sieges of Zaragoza that we documented during the following years

in Spain, Germany, France and England. These cartographies can be found in war memoirs that relate different war conflicts of the 19th century, such as *History of the War in the Peninsula, and in the South of France: From the Year 1807 to the Year 1814* or *Atlas Des Plus Memorables Batailles, Combats Et Sieges Des Temps Anciens, Du Moyen Age Et De L'Age Moderne, en 200 feuilles*. These plans focused on a rigorous graphic description of the military strategy carried out by the French, mainly during the Second Siege. Generally speaking, all the examples have a similar

composition as regards the representation of the territorial context of Zaragoza, which includes in more or less detail an identification of the troops and their movements, the urban morphology, the water system, etc.

However, among all these graphic contributions, we would highlight a plan drawn in 1814 by Vicente Gambau (Fig. 11). The reason for this is that we are looking at a plan which, unlike other contemporary ones and in a novel way, draws the urban fabric of the Aragonese capital, establishing a distinction between the buildings that had been left standing and those that had been destroyed. In other words, it is the first documented plan that reflects the destruction caused by the French army in the city of Zaragoza (Rogniat, 1814), allowing us to identify the destructive progress as the troops advanced until they reached the city's central core, at which point the surrender took place (Aquilué, 2021). In short, a valuable record of the heritage lost or damaged as a result of this conflict.

Finally, it should be noted that the cartographic production carried out by the French army during the war was unknown to Spain until the 1820s. At the end of the conflict, French officers proposed to conclude the unfinished works of the general map of Spain "guided by a scientific, but also commercial interest" (Chías & Abad, 2019: 52). An agreement between Spain and France led cartographers from both countries to work together on the cartographies of the Spanish territory between 1823 and 1840. This agreement allowed the Spanish cartographer Francisco Coello to study the cartographies of Spanish territory guarded in Paris. The result of this study was the *Atlas de España y sus Posesiones de Ultramar* (Atlas of Spain and her Overseas Possessions) begun in 1844, which was never completed, but laid the foundations of modern cartography in Spain.

6. CONCLUSION

In this article we have reconstructed the evolution of the urban and territorial cartography of Zaza-

goza, with special emphasis on that produced on the occasion of the Sieges of Zaragoza. In addition, we have been able to recover, through rigorous archival work, unpublished cartographies which, together with their historical-military value, allow us to make progress in the knowledge and study of the heritage of Zaragoza. Specifically, on the basis of these new sources we have been able to shed light on a hypothesis that had not been fully validated until now; namely, how the lack of direct knowledge of the terrain through rigorous mapping was a determining factor in the failure of the first siege of the city, and the reason why the second Siege was planned on the basis of a meticulous and extensive cartographic exercise of the territory.

In any case, the analysis of these cartographies — beyond their historical, military, political or even social dimension— has allowed us to recognise the transcendence of war in the processes of transformation of the city. Therefore, these cartographies can serve as a support for future research aimed at interpreting the historical evolution and transformation of the urban fabric of Zaragoza, identifying and studying lost or damaged heritage and, where possible, graphically reconstructing the urban landscape and architecture. In short, this research and its methodology represent an essential foundation for the enhancement and awareness of the interdisciplinary study of war and heritage.

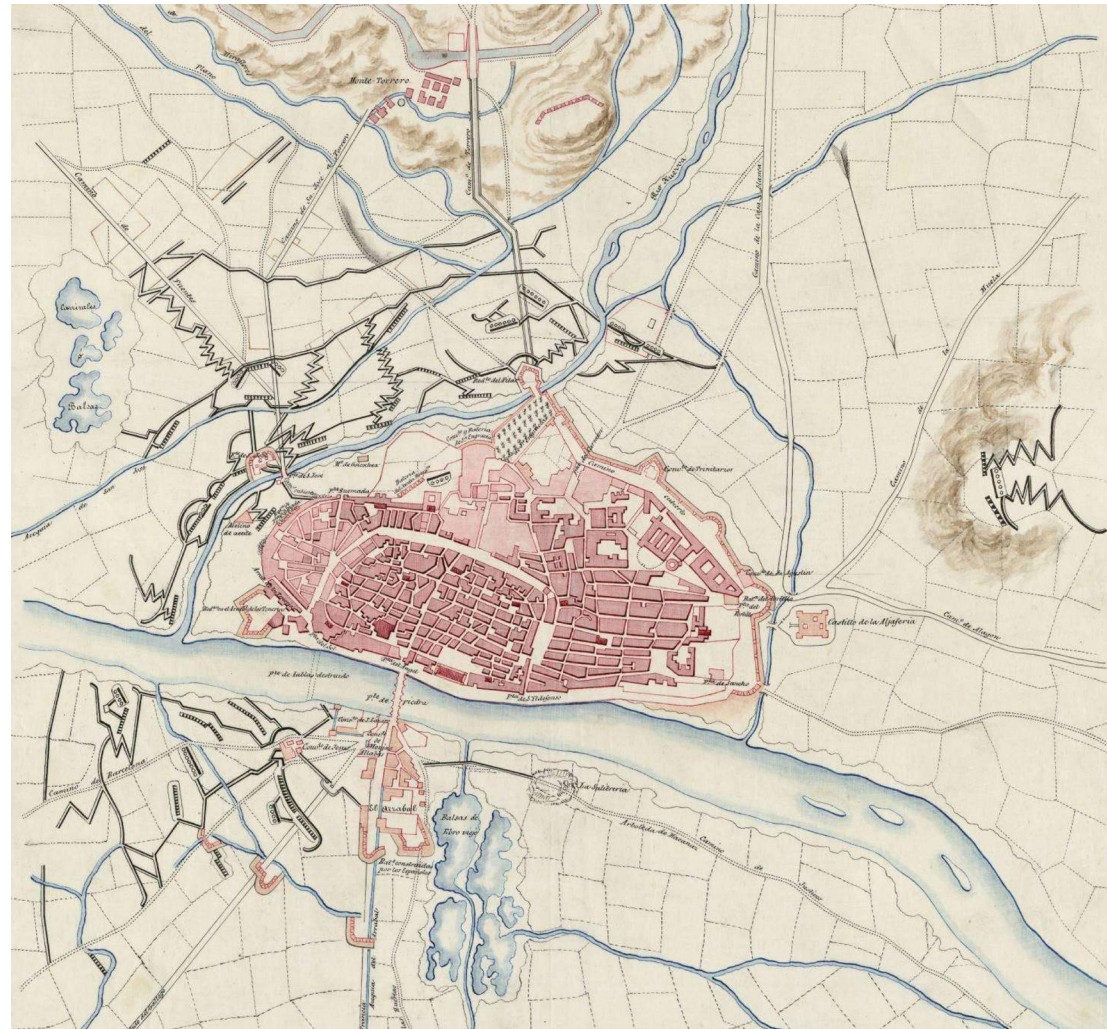


Figure 11. Vicente Gambau, 1814, *Plano del 2º sitio de Zaragoza*. Archivo Cartográfico de Estudios Geográficos del Centro Geográfico del Ejército. Ar. F-T.4-C.3-118. Approximate scale 1:7000.

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