

Abstract

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**Strategic and tactical approaches in fortress architecture in the
Carpathian Basin during the Late Roman Period**

Summary of the PhD thesis

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At the very beginning of my research, I was aware of the fact that the subject I selected had been studied only by archaeologists and classical scholars before in Hungary. As military historians had not tapped into such an early past of the Carpathian Basin, the findings of my research will largely contribute to a deeper understanding of the early military history of the region. I really appreciate the contribution of earlier archaeologists and philologists who paved the way for my research with a huge amount of quality information and scientific data on the late Roman history of the Carpathian Basin.

Research objectives

The main objective of my research was to examine the complex system of military installations established in the Carpathian Basin between the end of the 3rd century and the first half of the 5th century, and analyse their tactical and strategic role against the backdrop of the military paradigm shift of the era. As earlier researches in relation to Pannonia usually focused on a narrow subtopic like fortifications along the Pannonian Limes, redoubts, towers, or the Csörsz Ditch, also known as the Devil's Ditch, my research is the first comprehensive investigation to analyse their interrelationship as a complex system. In particular, I wanted to support my hypothesis that in the late Roman period a complex, integrated, multi-stage defensive system was implemented in the Carpathian Basin as part of a defensive strategy with offensive tactical elements. I also aimed to disprove the long-standing claim that the disintegrated, under-equipped, barbarizing Roman army would passively face the attack of barbarian forces in crumbling forts.

I carefully studied the transformation of organizational structures, tactical approaches and

weaponry in the late Roman army that influenced fortress design, with special focus on the local characteristics of different Ripa Pannonica sections. I took a holistic approach to integrate fortification design into the complex system of combat procedures applied by the Roman army in the era to gain a deeper insight into the utilization of military establishments during military operations. I was the first to research the use of natural frontiers, artificial barriers and a series of fortifications in late Roman military establishments in Pannonia, with the aim to debate the widely held theory that contemporary authors like Vegetius or Anonymos were nothing more than self-made plagiarists without authentic military expertise.

I closely examined the role of the vast earthwork system known as the Devil's Ditch. As a military historian, I pioneered to embed the origin and purpose of the longest defensive line in the Carpathian Basin into the wider context of a series of well-known historic events by re-examining and supplementing the earlier theories of archaeologists. By reassessing the role of the Devil's Ditch as the most important, but not unprecedented, element of the safety zone established around the periphery of the Empire, the tactical approaches used by the Roman army in the Central Danubian Basin in the 4th century have been reinterpreted.

Research methods, sources

In my thesis, I tried to understand the overall historical context and background before analysing Pannonian processes. Consequently, I approached phenomena from the imperial level towards regional matters to reveal the underlying strategic and tactical principles of fortress architecture.

During my research, a wide variety of sources have been used including archaeological records offices, the only reliable sources to help analyse military establishments in details as many of the installations have been destroyed, built over or buried back after excavations. In addition to military bases, several relevant material remains have also been studied including records of contemporary weapons.

The study of material remains and contemporary sources are equally important to enable comparative analysis to support my assumptions. Where it was possible, I compared Hungarian, German and English references with the original Latin sources for further fine tuning to eliminate subtle differences in meaning resulting from translators' efforts to make the descriptions easily understandable. However, the use of synonyms may interfere with the microanalysis of sources within a subtopic. Basically, I used three groups of contemporary sources including historical works by classical authors in late antiquity; military publications; and different registers, military inventories and law compendiums.

The extensive use of cartography and geographical information systems provided practical guidance for my fieldwork, with enormous support from Dr. Harkányiné Zsuzsanna Székely, associate professor of Szent István University, Gödöllő, who are working together with a group of researchers on the Danube Limes World Heritage Project to protect archaeological sites and promote tourism. As far as it was possible, I invited other experts who were familiar with the given location to accompany me during my fieldwork. I am very grateful to the archaeologists of the National Museum, especially Péter Gróf, Dániel Gróh, and Zsolt Mráv, for allowing me to study the documentation of their researches in Visegrád-Gizellamajor and

Göd-Bócsaújtelep. The excavation data and the mutually beneficial fieldworks undoubtedly enhanced the quality of my investigation.

From a very early stage, I went on to research domestic and foreign literature during a couple of field trips to Germany, Austria and Switzerland where I studied local late Roman relics and compared them with similar archaeological remains in Hungary.

Brief summary of chapters

As I have previously indicated, *Chapter One* sets the objectives of my research and details the research methods and sources I used to achieve these objectives.

In *Chapter Two*, I analysed terminology (*ripa/limes*) related to Roman frontier defence, with special emphasis on the semantic properties attributed to the terms in subsequent periods within the context of the tactical role of military encampments.

Divided into three subchapters, *Chapter Three* examines the political and military factors that forced the Roman Empire to change its strategic and tactical approaches from the 3rd century AD, and analyses the response of Roman civilian and military leadership to the crisis.

The first subchapter explores the new military challenges to security policy in the changed environment, and examines the role of Roman frontier defence in major European, Middle Eastern and African regions, with special attention to the reason of the crises in the above regions.

In the second subchapter, divided into two subsections, the analysis of administrative and military reforms implemented by the Roman state to overcome the crisis revealed an interesting paradox. The main objective of the reforms to prevent the disintegration of the Empire required a regional decentralization of power. By assessing the function and jurisdiction of central government agencies established by the reforms of Diocletian and Constantine, I proved that these seemingly civil administrative bodies played an important role in shaping military policy, as their daily tasks often included issues related to military organization. Consequently, I managed to refute the earlier hypothesis claiming that government executives were military outsiders whose military publications should not be considered credible sources.

Subsequent to the analysis of administrative reforms, I examined several aspects of Roman military reorganization at the end of the 3rd century and the beginning of the 4th century AD to find that the retailored organizational system duly adapted to new challenges. Military reforms were not ad hoc measures as it was supposed, but elements of a well-considered framework. More importantly, the process of barbarization among the officers and in the rank and file of the Roman army should not necessarily be seen as a decline in the art of warfare. The analysis of weaponry and related tactics demonstrated that the new approaches and tendencies were adjusted to the changing economic conditions and war economy of the Empire as an optimum response to new challenges posed by the enemy.

The third subchapter describes how military reform processes influenced fortress architecture,

including new fortress types and the reason of their emergence, and describes the modernization measures taken to strengthen obsolete fortresses. I was the first researcher in Hungary to closely examine the role of projectile weapons in the protection of fortresses.

In *Chapter Four*, I analysed the transformation of Pannonian frontier defence in the late Roman period, in three subchapters.

In the first subchapter, I reviewed the military history of Pannonia between the first and third centuries AD to provide a clear context for subsequent historical analysis. The Sarmatian-Quadi-Roman triangle of different military cultures underscores the importance of the region for both Hungarian and international military history. My historical overview also includes events like the great Marcomannic Wars, a lesser known, but very important episode in the military history of the Carpathian Basin.

The second subchapter analyses the implications of strategic reorganization in the Carpathian Basin during the 3rd century AD, with special emphasis on the challenges the Roman high command had to face in the region during the subsequent period.

Divided into two subsections, the third subchapter examines the reorganization of Pannonian administrative and defence systems to reveal similar tendencies to major imperial reforms. Nevertheless, local characteristics required a number of unique solutions like the establishment of auxiliary outpost forts as bases for offensive forays into barbarian territory, or non-standard headcount in military units.

Chapter Five examines the emergence of new strategic and tactical approaches in Pannonian fortress design in six subchapters, including a detailed analysis of the interrelationship of military establishments, the role of projectile weapons and barricades, and the implementation of general regulations.

The first subchapter categorizes the fortifications along the Pannonian Limes based on how they were integrated or streamlined into the defensive system to meet the military requirements of the new era. In addition to historical patterns of architectural design, I also collected plentiful information on the garrisons stationed in different military bases.

In the second subchapter, I pioneered to study the defensive role of natural and artificial barriers and barricades in the protection of Pannonian fortifications, and proved that the standards of fortress architecture specified in late Roman military publications were successfully implemented in practice. By investigating the defensive system of the late Roman fortress at Visegrád-Gizellamajor in a case study, I justified that the defensive works of fortifications and related outpost barricades played an important role in ensuring the effective use of projectile weapons as a further protective measure.

In the third subchapter, I analysed the system of fortified crossing points typical of the late Roman period, and revealed that they played an important role in bringing offensive tactical elements into the defensive Roman strategy. In addition to their function to control frontier traffic and strategic crossing points, these installations were largely designed for logistic

convenience to support offensive forays into barbarian territory. Within this context, I also examined the strategic role of the system of late Roman fortified crossing points established on Szentendre Island as a protective measure around the periphery of Pannonia Valeria.

In the fourth subchapter, the examination of a series of signal stations and watchtowers along the Ripa Pannonica revealed that the architectural design of towers in different regions largely conformed to topographical conditions. Consequently, the structure of buildings and the building materials were in close connection with the strength of the related external defense systems.

In the fifth subchapter, I analysed the military establishments inside Pannonian territory in three subsections. Despite the fact that fortified towns and large inner fortresses shared similar functional characteristics and were parts of the same internal defensive system, they should not be categorized in the same group. I proposed several hypotheses on the debated chronology of the establishment of internal fortresses, and analysed their role within the framework of the region's integrated defence system to find that the function of these establishments were much more complex than previously believed. Fortified towns and internal fortresses were equally used as logistic centers for frontier troops, military supply services for the defence industry, potential bases for central mobile corps and shelters to protect civilians and their belongings. Besides, the subchapter also describes the military role of stations and signal towers established inside the Empire.

In the sixth subchapter, I was the first among Hungarian researchers to raise the question of

missing late Roman marching camps, and found that the answer lies in the transformation of the military infrastructure network.

Chapter Six includes six further subchapters, in which I studied the so called Csörsz Ditch also known as Devil's Ditch, an auxiliary defense system established in the 4th century AD in the Great Plain.

The first subchapter outlines the major chronological problems related to the establishment of the earthwork system.

The second subchapter introduces the antecedents of installation including the political and military interests leading to the construction of Devil's Ditch, followed by a detailed analysis of the Sarmatian civil war and its repercussions on the power relations of the region.

In the third subchapter, I fine-tuned the chronology of events to put the date of the establishment of the so-called internal earthworks between the years 334-339 AD. Following the analysis of their exact function, I collected direct and indirect evidence to prove the Roman origin of the ramparts.

In the fourth subchapter, I described the process in which all Sarmatians living in the Great Plain fell under Roman protectorate during the reign of Constantius II.

In the fifth subchapter, I analysed the defensive principles of Valentinian I in relation to

Pannonia, with particular emphasis on the military establishments in Göd and Hatvan, which were closely connected to the outlying defense system.

In a case study of the Roman-Quadi War, a consequence of pushing forward the Devil's Ditch, in the last, sixth subchapter, I turned my attention to the multiple function of the region's fortifications during military operations. As a result, I found that an effective integrated defense system requires all of its elements to function faultlessly.

Chapter Seven observes the different elements of the integrated defense system as interdependent parts of a complex unit. Based on the findings of my research, I described the defense system of the Carpathian Basin in the late Roman period as follows:

As a result of the military and defense policy of Roman diplomacy, a Roman-friendly buffer zone was created around the periphery of Pannonian provinces to eliminate direct military threats. The boundary of the buffer zone was represented by the so-called Devil's Ditch with barbarian troops in quasi-subjection to Romans stationed along the earthwork system to signal immediate danger. Between the main defense line (*ripa*) and the buffer zone, a series of fortified crossing points were established to enable quick response to avert danger in barbarian territory and to provide effective logistic support for Roman outposts. Should they not be able to repel attacks in the buffer zone, a series of fortifications along the *ripa* had been established to prevent the enemy penetrate into the provinces. Ideally, alerts from the puffer zone enabled Romans to strengthen the endangered frontier sections in time, as military units in frontier fortresses, specifically deployed for regional territory protection, were not able in

themselves to hold up extensive attacks, only unexpected small breaches. Consequently, frontier defence required urgent reinforcement to withstand large-scale offensive operations. If they did not get the necessary support from central troops, the enemy invaded the Empire. In such cases, direct mitigation measures were implemented to protect people and their possessions, and minimize potential losses via a network of fortified towns and internal fortresses inside provinces. Eventually, central mobile corps were mobilized to drive out the enemy from Roman territory with the logistic support of an internal military infrastructure established within the provinces.

In *Chapter Eight*, I examined the implications of the collapse of the Empire on Pannonian fortresses, with special focus on the emerging new defense methods the Empire was forced to adopt, including the so-called leftover fortifications, a clear sign of deep crisis.

Finally, *Chapter Nine* summarizes the new scientific findings of my research, detailed below in the next paragraph.

New scientific findings

In my dissertation, I provided evidence that in the late Roman period a highly sophisticated, integrated, multi-stage defensive system was implemented in the Carpathian Basin, and refuted the widely held scientific hypothesis that late Roman frontier defence was based on a single-stage, linear model. Considering that the design, installation, maintenance and operation of this comprehensive system implied high level of sophistication and complex

engineering skills, I proved that the art of warfare in the late Roman period achieved higher strategic standards than previously assumed.

During my research, I was the first to examine the use of natural frontiers, artificial barriers and a series of fortifications in late Roman military establishments in Pannonia to prove that military installations in the 3rd and 4th century AD conformed to both central regulations and local topographical and military-related characteristics. I was the first researcher to underscore the importance of projectile weapons in the protection of late Roman fortresses in the region, and pioneered to study the role and interrelationship of auxiliary barricades and projectile weapons in fortress defence.

I was the first to observe the late Roman integrated defense system in the Carpathian Basin as a comprehensive system embracing the Devil's Ditch, military outposts, fortified crossing points, frontier forts, watchtowers, stations, fortified towns, internal fortresses and marching camps.

I provided evidence that top administration officials in central government agencies exercised authority over important military affairs, which implies that government officials possessed considerable expertise in the field, contrary to earlier scientific judgement. I also proved that the recommendations of military publications issued by government officials were implemented in Pannonian fortress architecture.

I demonstrated that despite the late Roman army applied a defensive strategy in the

Carpathian Basin, it frequently adopted additional offensive elements to achieve its strategic goals. My argumentation disproved the widely held scientific theory of passive defense with reference to the late Roman army.

As a military historian, I was the first to integrate the origin and purpose of the Devil's Ditch, the longest defensive line in the Carpathian Basin, into the wider context of a series of well-documented historic events in the region. My cooperation with the researchers of Szent István University, Gödöllő, resulted in an educational booklet and a travelling exhibition on the Devil's Ditch.

Recommendation

With reference to the conclusions of my thesis, it is recommended to carry on further research in the field, as the late Roman period and the Devil's Ditch are among the most neglected subjects in the history of the Carpathian Basin for military historians. An interdisciplinary research will possibly explain several unanswered questions and reveal interesting details about the region's history prior to the Hungarian Conquest.

Applicability of research findings

The Hungarian section of the Roman frontier defence line, the subject of my thesis, is nominated for World Heritage Site status. Being granted the status would bring enormous prestige, publicity and economic benefits for Hungary. In order for the country to win the award and exploit its benefits, we shall have profound knowledge of the nominated Roman frontier defence line and related establishments. My thesis is a contribution to gaining a

deeper insight into the subject.

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THE AUTHOR'S SCIENTIFIC ACTIVITIES

In 2002, the author won the *Sic Itur Ad Astra* military history competition. Between 2004-2006, he was a graduate assistant at the Department of Political Science, Faculty of Social Science, Eötvös Loránd University, and the editor of the department's journal called Polinfó. In 2007, he made a presentation titled "Military and war in the late Roman period" at the Military History Institute and Museum. During the 2007/08 school year, he gave several lectures in university courses on behalf of the instructors of Zrínyi Miklós National Defence University. Since 2008, he is a member of the Devil's Ditch research team of Szent István University, Gödöllő. As a member of the research group, he contributed to the compilation of a booklet and a travelling exhibition on the Devil's Ditch. He is a regular speaker in scientific seminars on the Devil's Ditch, and author of a related study for a forthcoming publication. Since 2009, he is an active member of the Hungarian Limes Association, and personal assistant to the executive chairman. In this function, he contributes to the organization of conferences, scientific programs and meetings. Currently, he cooperates as an expert in the limes association's negotiations with the government, and coordinates a project to search for a Roman galley. Since 2011, he is an associate lecturer at the Balassi Institute.

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