

Transformation of Military Fortifications in the Late Roman Period and the Fortification of the Northeastern Border of Italy

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Abstract

During the Late Roman period, profound transformations took place within the military. With the implementation of defence in depth and the expansion of the army, fortifications of a more recognizable and monumental character were confined to the most critical communication routes and strategic nodal points. In the case of other, newly established fortifications, it is primarily their strategic positioning, along with archaeological evidence, that attest to their martial nature. The initial indications of these developments appeared as early as the final third of the 3rd century. Under the reigns of Diocletian and Constantine, efforts were renewed to consolidate the *limes* and secure key strategic locations within the empire's interior. However, the most extensive transformation unfolded in the second half of the 4th century, marked by the renewed fortification of the *limes* and an unprecedented wave of fortress construction deep within imperial territory. This study offers a concise overview of the fortification of the northeastern frontier of Italy, a region that vividly exemplifies these military developments. By the latter half of the 4th century, this frontier had evolved into a fully militarized zone, characterized by a network of defensive walls and numerous new fortifications.

Keywords: Late Roman period; Late Roman army; Late Roman fortifications; defence in depth; *Claustra Alpium Iuliarum*; frontier defence (*limes*)

Izvleček

Preobrazba vojaških utrd v poznorimskem obdobju in utrjevanje severovzhodne meje Italije

V poznorimskem obdobju so se v vojaški organizaciji zgodile globoke spremembe. Z uvedbo globinske obrambe in povečanjem števila vojakov so bile bolj prepoznavne utrdbe prisotne predvsem ob pomembnejših komunikacijah in strateških vozliščih. Pri drugih novonastalih utrdbah pa le še njihova strateška lega, ostanki vojaške noše in orožje potrjujejo njihov vojaški značaj. Deloma so se te spremembe nakazale že v zadnji tretjini 3. stoletja. V času vladavine Dioklecijana in Konstantina so znova utrjevali *limes* in ključne strateške točke v notranjosti imperija. Največja preobrazba pa je nastopila v drugi polovici 4. stoletja, ko je prišlo do ponovne utrditve *limesa* in do množične gradnje utrdb globoko v notranjosti imperija. V študiji je kratko podan tudi pregled utrjevanja severovzhodne meje Italije, območja, ki nazorno ponazarja te vojaške spremembe. V drugi polovici 4. stoletja se je to obmejno območje razvilo v militarizirano cono, zaznamovano z mrežo zapornih zidov in s številnimi novimi utrdbami.

Ključne besede: poznorimsko obdobje; poznorimska vojska; poznorimske utrdbe; obramba v globino; *Claustra Alpium Iuliarum*; obramba meja (*limes*)

The Late Roman period witnessed profound transformations that permeated all spheres of life, and the settlement landscape also underwent significant changes: Roman urban centres were increasingly fortified, while in rural areas, unprotected settlements were largely abandoned in favour of newly constructed, fortified dwellings. These shifts are particularly apparent in the military architecture of the period. Previously, Roman fortifications were characterized by their lowland locations, regularized layouts, robust curtain walls, and symmetrically organized internal structures, making them easily recognizable elements within the Roman settlement system. However, the features of military installations began to evolve rapidly by the final third of the 3rd century, accelerating even further in the latter half of the 4th century. Changes in military strategy and tactics, alongside the necessity for swift mobilization, increasingly obscured the formal characteristics that once rendered military fortresses readily identifiable.

Following the tumultuous military conflicts of the 3rd century, the army underwent comprehensive restructuring under the reforms of Diocletian and Constantine. Contemporary sources reveal significant shifts in military strategy, including the division between frontier troops (*limitanei*) and mobile field armies (*comitatenses*), the expansion of military manpower, the redistribution of legions, and their fragmentation into smaller, more flexible units.¹ However, the corresponding transformations in the siting, construction, and operational roles of military fortifications remain comparatively underexplored. While fortifications along the vulnerable Danubian *limes* were modified but continued to be clearly recognizable, those situated in its hinterland – and especially within the interior zones of the Eastern Alpine region – became notably more varied and increasingly difficult to interpret archaeologically.

To better grasp the complexity and scope of these developments, it is essential first to outline the evolution of military fortifications within the broader area between the Rhine-Danube frontier and Italy. Such an overview helps to elucidate regional distinctions in the conception, construction, and chronology of fortifications. The insights gained from this wider context will then be applied to the defensive network established in northeastern Italy, which functioned as a critical barrier against incursions from the north and east into the imperial heartland. While some fortifications are clearly identifiable in this region, many others remain less securely defined yet undoubtedly played a pivotal role in the defence of Italy during Late Antiquity. By examining several better-documented sites, this study presents their key features, including defensive architecture, spatial organization, proximity to strategically vital routes and passes, and associated military material culture such as weaponry and equipment.

The discussion is structured chronologically, as archaeological excavations – complemented by textual sources – have produced substantial bodies of data. These advances now allow for at least a preliminary reconstruction of major construction phases and provide a clearer understanding of patterns of military presence during this critical period of transition.

¹ Southern, Dixon 1996, 15–38; Wilkes 2005, 265–268.

Methodological challenges

Recent research on Late Roman fortifications has resolved many issues concerning their chronology, yet for many sites, their military character cannot be confirmed with full certainty. The problem of distinguishing between military, civilian, as well as hybrid or multifunctional installations, is frequently addressed in the scholarly literature.² In this context, we primarily rely on the layout of the fortifications, construction techniques, the positioning and design of defensive towers, the fortification of entrances, and the buildings within the interior. However, even these elements often provide only partial support for dating and identifying the character of these sites.³ In many cases, without extensive archaeological investigation it remains difficult to determine the true nature of these fortifications, as they are typically known only through the discovery of military equipment and weaponry, while characteristic defensive architecture is lacking. Are these fortified settlements, fallback military positions, or a combination of military and civilian functions? This is a problem encountered across much of the Late Roman world.⁴

A comparison between the better-documented military fortifications along the *limes* and those in the interior does not permit direct parallels. Undoubtedly, fortifications along the *limes* and its immediate hinterland were constructed by military engineers. This is evident in nearby Pannonia, as well as in the Norican-Raetian sectors of the *limes*, through the prevalence of distinct architectural features such as fan-shaped corner towers and U-shaped towers, which allow for at least approximate dating. In the interior of the Eastern Alpine region, however, such features are absent.

Numerous newly discovered, improvised fortifications vividly reflect the situation that emerged when the offensive phase of the Roman Empire came to an end, and the construction of fortifications extended into the interior regions. Raids by foreign ethnic groups from beyond the *limes* were unpredictable and, due to their scale, did not follow only the main invasion routes. These incursions were predominantly plundering expeditions, avoiding direct assaults on major fortresses and fortified cities, since the raiders lacked siege equipment. Instead, they targeted more accessible and poorly defended settlements and rural villas. Similar challenges arose when the region frequently became the theatre of civil wars, during which military detachments also plundered along secondary routes.

As a result, the network of temporary and often completely improvised fortifications had to be designed on a broad scale. These fortifications were built in haste, frequently making use of older, pre-Roman hillforts with naturally defensible positions and partially preserved ramparts. Since most of these sites lack characteristic defensive architecture, their identification relies primarily on finds of military equipment,

² Cf. Ciglenečki 2023, 327–329.

³ Cf. Petrikovits 1971, 179–181; Wilkes 2005, 263–264; Mackensen 2018, 49–51.

⁴ Cf. Poulter 2007, 92–93; Hunold 2011, 417–418; Possenti 2013, 28.

weaponry, and imported transport and tableware (such as amphorae and fine ware). This raises recurring concerns about the quality of data regarding small metal finds, as these were mostly recovered by non-professionals, often lacking precise find locations and archaeological context. Furthermore, identification is complicated by the frequent combination of military garrisons and civilian settlement at all three chronological stages discussed below.

Efforts to identify the full spectrum of Late Roman military fortifications are thus primarily limited to their location (strategic significance and communications), their spatial layout, defensive and residential architecture, and, above all, the increasingly abundant small finds and coinage evidence.

Recent investigations have increasingly clarified three significant phases in the development of military fortifications during the Late Roman period. However, at the regional level, these phases vary chronologically, as they correlate with different waves of incursions from beyond the imperial borders as well as the strategic objectives of Roman rulers. Each phase is marked by numerous changes in fortress construction and the organization of defence. A comparison of fortifications from the *limes* and the Eastern Alpine region clearly illustrates both imperial strategic planning and simultaneous local initiatives in settlement and militarization of the landscape.

The emergence of new military fortifications in the second half of the 3rd century

The incursions of foreign peoples across the *limes* in the second half of the 3rd century triggered the beginning of major transformations in the construction of fortifications. The fortification of Rome under Emperor Aurelian, with its imposing defensive wall, as well as the construction of walls in numerous other Roman cities, clearly attest to the widespread perception of threats from the north and east across much of the empire.⁵ One of the most notable developments in fortification construction was the relocation of military sites to naturally defensible elevations, where layouts were adapted to the terrain. Their overall size was reduced, but defensive architecture became more robust. Although the earliest changes were still relatively modest (utilizing lower elevations and straight walls), they marked the beginning of a thorough transformation of military architecture.

The line of the *limes* between the Danube and the Rhine was repositioned inland to a more secure so-called “wet frontier,” stretching from Lake Constance along the Iller River to the Danube. In this region, we observe notable innovations in the location and design of fortifications.⁶ The development of the fortress at **Vermania (Isny)** is well-documented (*Fig. 1: B*).⁷ Constructed on a low hill separated by ditches from

⁵ Johnson 1983, 113–121; Southern, Dixon, 1996, 128; Christie 2001.

⁶ Petrikovits 1971, 181; Mackensen 2018, 49–51.

⁷ Garbsch 1971.

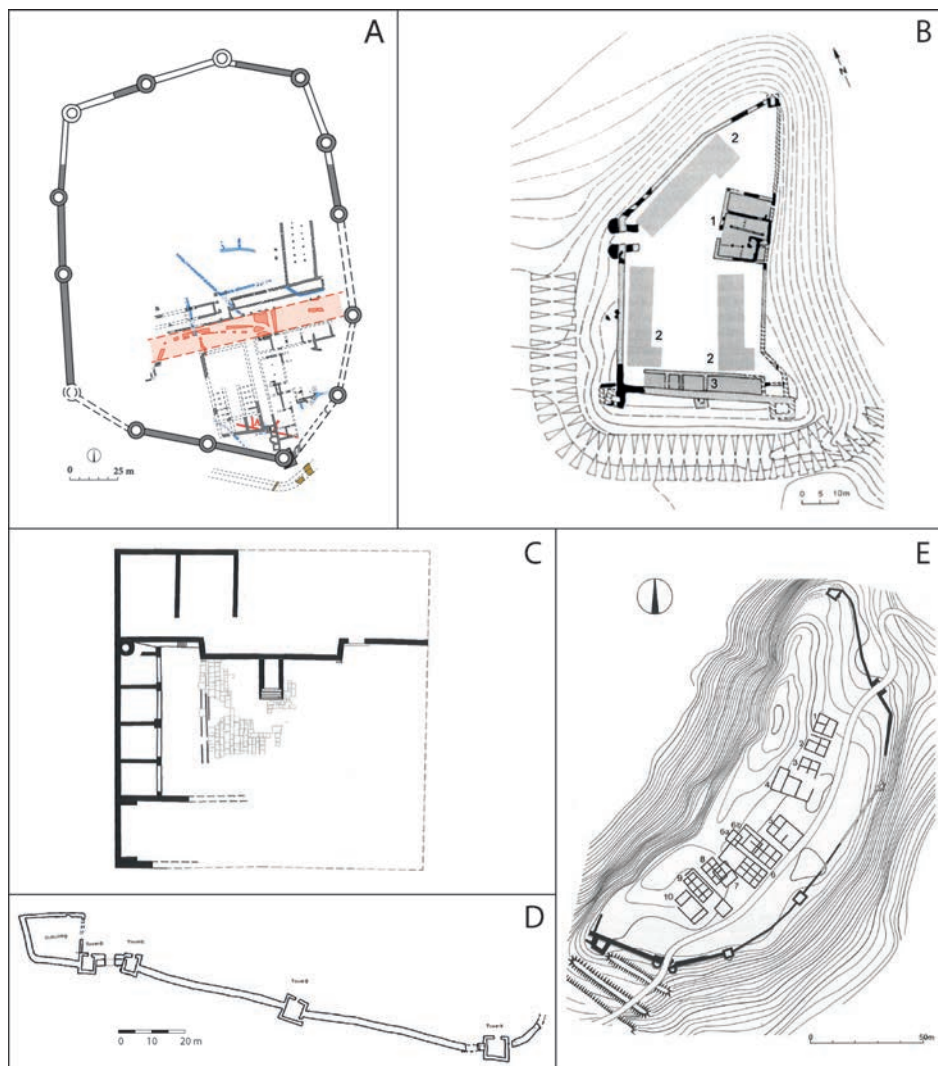


Fig. 1: Selection of better-researched military posts from the second half of the 3rd century (A Ajdovščina (*Castra*) (after Urek, Kovačič 2020, Fig. 1); B Isny (*Vermania*) (after Mackensen 2018, Fig. 5); C Rijeka (*Tarsatica*) (after Višnjic 2019, Fig. 7); D Solin (after Starac 2019a, Fig. 3); E Moosberg (after Ciglenečki 1987, Fig. 12).

the ridge, the fort conformed to the natural contours of the terrain, covering an area of 0.27 hectares. It featured walls up to 2.5 metres thick with several towers and a ditch on the exposed sides. Numismatic analysis has demonstrated the construction

of stone military barracks and fortifications during the reign of Aurelian, as there was a significant influx of coinage into the fortress during the early 270s.⁸

Around this time, fortifications such as the ditched and ramparted fort at Münsterkogel near Konstanz and the palisaded fort at Burghöfe were presumably also established.⁹ In the Norican section of the *limes*, for example at the castellum of Favianis, signs of construction appear in the final third of the 3rd century.¹⁰

Under Emperor Probus, civilian settlements such as Lorenzberg near Epfach and **Moosberg near Murnau** were fortified (Fig. 1: E).¹¹ These hinterland posts share many features with military forts. Particularly characteristic is the fortified settlement of Moosberg, which, in contrast to forts along the *limes*, had thinner walls - on average one metre thick, and up to two metres on exposed sections.¹² Rectangular towers were positioned centrally along the walls, while the entrance was reinforced with two transverse walls. On its more accessible side, it was protected by ditches and a stronger wall. Inside, wooden structures were distributed across much of the interior space.

These fortifications characteristically exploited elevated, naturally defensible positions, while remaining close to vital communication routes. They were protected by strong walls, often supplemented by ditches on the more vulnerable sides. The earlier standardized layouts gave way to designs increasingly dictated by local topography.

In the Eastern Alpine region, few fortifications can be reliably dated to this period (Fig. 6). The construction of forts at Vrhnika, Ajdovščina, and Hrušica during the reign of Gallienus was already hypothesized by Balduin Saria,¹³ and Jaroslav Šašel similarly proposed their establishment prior to the 4th century.¹⁴

Rescue excavations at **Ajdovščina (Castra)** have provided the first reliable data regarding the origins of the largest castellum within the *Claustra Alpium Iuliarum* defensive system (Fig. 1: A).¹⁵ Numerous coins, together with contemporaneous ceramic and metal finds - primarily military equipment - indicate that the fort's walls were likely erected in the 270s or towards the end of the 3rd century.¹⁶ Notably, it was strategically located at the confluence of the Hubelj and Lokavšček rivers and enclosed by walls up to three metres thick, complemented by 14 round towers and a ditch on the more accessible side.

At the southern extremity of the *Claustra* system, the Roman town of **Tarsatica (modern Rijeka)** was fortified in the final third of the 3rd century with a powerful

⁸ Kos 2019, 144–145.

⁹ Mackensen 2018, 51.

¹⁰ Ladstätter 2002, 310; Groh, Sedlmayer 2002, 559–560.

¹¹ Mackensen 2020, 31.

¹² Garbsch 1966.

¹³ Saria 1939, 146.

¹⁴ Šašel 1984, 116.

¹⁵ Osmuk 1997; Žerjal, Tratnik 2020; Urek, Kovačič 2020.

¹⁶ Žerjal, Tratnik 2020, 22–24; Urek, Kovačič 2020, 48–58.

city wall and a *principia* (headquarters building) at its centre (Fig. 1: C).¹⁷ At that time, the town was transformed into a major military base and command post, and it also served as the sole seaport within the defensive network. Excavators date the construction of the *principia* to between 260 and 270, while numismatic evidence suggests a period between 270 and 280.¹⁸ The partially excavated *principia* revealed a complex of buildings arranged around a large internal courtyard, with the administrative building located on slightly elevated ground. The city walls, indirectly dated through the construction of the *principia*, were further reinforced on the inner side during the 4th century. The Tarsatica *principia* was abandoned by the end of the 4th or the very beginning of the 5th century, marking the end of military presence in the town.

Likewise, the fortress at **Gradišće near Velike Malence** likely dates to the final third of the 3rd century. Noteworthy for its size (8 hectares) and strategic significance, it overlooked the Roman road from Siscia to Emona and the crossing over the Krka River.¹⁹ In its earlier phase, it likely featured only a 2.1-metre-wide wall without towers, with wooden barracks in the interior.²⁰ The pentagonal castellum at **Gradišće near Vrhnika**, though poorly understood, is probably of similar date based on its location and layout.²¹

Due to its brief occupation, the fort at **Pasjak near Klana**, along the itinerary road from Tarsatica to Tergeste, is of particular significance.²² Situated on a low hill, the remains of an approximately rectangular fort with 3-meter-thick walls and a tower were identified. The entrance was fortified with two transverse walls set perpendicular to the main wall. A thin cultural layer and a coin hoard beneath the collapsed wall have allowed for secure dating of the fort's construction and destruction to around 270.²³

Above the bay of Martinšćica near Rijeka (Tarsatica), a fortress at **Solin** was constructed between the second half of the 3rd and the early 4th century (Fig. 1: D).²⁴ Built on a steep hill, it featured 2-meter-thick walls with four rectangular towers and a fortified entrance. The fort served a dual purpose: it protected the local population and provided oversight of the important harbour at Martinšćica as well as the state road between Tarsatica and Senia. Sparse archaeological finds indicate that the fort was used only intermittently.

Given the challenges in distinguishing between civilian and military installations, it is necessary to consider sites lacking masonry defensive architecture but strategically located and yielding military-related finds. One such case is **Invillino**.²⁵ Exten-

¹⁷ Višnjić 2019.

¹⁸ Bekić 2009, 221; Kos 2012, 287.

¹⁹ Saria 1929; Saria 1930; Ciglenečki 2003, 586–587.

²⁰ Saria 1939, 144.

²¹ Horvat 2020, 104–105.

²² Starac 1993; Starac 2009, 286.

²³ Starac 2009, 286.

²⁴ Starac 2019.

²⁵ Bierbrauer 1987, 191–192; Martin 1992, 261.

sive investigations at the hillfort of **Kuzelin near Donja Glavnica**, on the edge of the Pannonian Plain, have identified a naturally well-defended site near the important road from Andautonia to Poetovio.²⁶ Coins ranging from Gallienus to Aurelian and residential structures paved with square bricks confirm occupation in the final third of the 3rd century. Defence appears to have relied solely on an earthwork with a palisade.²⁷

A particular challenge is posed by the function of outposts somewhat removed from major communication routes. At **Veliki vrh above Osredok**, traces of a thin cultural layer dating to the 260s and 270s, along with some artefacts suggesting a military presence, were identified on a prehistoric hillfort.²⁸ Improvised dwellings were found on the terraces, while defence relied exclusively on the prehistoric ramparts. Given its commanding views, the site likely served not only as a refuge but also potentially as a lookout or signal station.

A similar role is indicated for the panoramic prehistoric hillfort at **Pančičev vrh near Javorje**, where 34 coins, primarily from the mid- to late 3rd century, were discovered.²⁹ Trial trenching revealed only prehistoric ramparts and terraces.³⁰ Coins and small finds likewise point to activity at other prehistoric hillforts, such as Rudna,³¹ Dunaj near Mladevine,³² and the complex of sites above Mihovo in the Gorjanci Hills.³³

These outposts, located deep beyond the *limes*, reflect the protective reflex of the Roman Empire, already datable to the 270s and, in some cases, slightly later. This is supported primarily by numismatic analysis, which shows a marked increase in coin losses during this period (see diagrams; *Figs. 4, 5*). While an increase in coinage under Gallienus is characteristic of most archaeological sites, even in lowland regions, it is precisely the sites that were not reoccupied later that confirm settlement at this time. Fortifications such as Castra, Tarsatica, Pasjak, Solin, and possibly Vrhnika and Velike Malence reflect state responses to incursions from beyond the *limes*. Proximity to major roads was decisive, and minimal natural protection, heavily reinforced by artificial fortifications, sufficed for defence (*Fig. 6*).

In the second group of short-lived, improvised outposts, we may infer local initiatives that reutilized prehistoric hillforts as refuges for the civilian population. These sites could be temporarily used by the army for troop movements, route control, observation, and signalling (Invillino, Veliki vrh, Pančičev vrh). In contrast to the larger

²⁶ Sokol 1994; Sokol 1998.

²⁷ Sokol 1994, 202.

²⁸ Ciglenečki 1990; Ciglenečki 2008, 486.

²⁹ Šemrov 2010, no. 96.

³⁰ Pavlin, Dular 2007, 81–83.

³¹ Ciglenečki 1991; Kos, Šemrov 1995, no. 171; Šemrov 1998, no. 177; Šemrov 2004, no. 142; Šemrov 2010, no. 155.

³² Ciglenečki 1992, 24–27.

³³ Križ 2021.

masonry forts, which remained in use throughout the Late Roman period, these improvised fortifications in the interior were soon abandoned. Such an improvised character is not unusual when compared with sites along the Danube-Illyr-Rhine *limes*, where at Burghöfe (*Sumontorium*), a ditch associated with a palisade was dated to between 272 and 282.³⁴

Phase II of the transformation: the Diocletianic-Constantinian period

A comprehensive reorganization took place during the reigns of Emperors Diocletian and Constantine, which also encompassed a new approach to the defence of the empire.³⁵ Roman strategists restructured the military into two main groups: frontier defence forces stationed along the *limes* (*limitanei*) and mobile units deployed deeper within the empire, typically near imperial capitals. The system of fortifications along the *limes* was renewed (e.g. at Visegrád), while only a limited number of major fortresses were constructed inland at critical strategic points (e.g. *Ad Pirum*). The *limitanei* were stationed in older, partly refurbished, or newly built forts along the frontier line, whereas the forts of the mobile army remain poorly documented. For the Eastern Alpine region, three legions of *Iuliae Alpinae* are attested, of which one was a *comitatensis* and two were *pseudocomitatensis*. Jaroslav Šašel believed that the two Italian legions were headquartered at Castra or Forum Iulii, while the third *pseudocomitatensis* operated along the eastern approaches into Italy. He therefore proposed legionary commands in the cities of Emona or Tarsatica, as well as in the fortress at Velike Malence.³⁶ The increase in military material culture in these cities during the 4th and early 5th centuries supports their military presence.³⁷ Andrej Gaspari has hypothesized the at least occasional presence of one of these legions in Emona.³⁸

In the Eastern Alpine region, the construction of forts at strategically significant locations – such as at the Hrušica pass and at the confluence of the Sava and Ljubljana rivers at Zalog – can be observed at this time (*Fig. 6*).

Extensive fortification efforts along the *limes* under Diocletian are well-documented both in written sources and archaeological evidence, while for the time of Constantine, archaeological sources are predominant.³⁹ Numerous renovations of older forts, as well as new constructions featuring distinctive defensive designs, are known. In pre-existing forts, these modifications typically included the reinforcement of walls, blocking of gateways, and renovation or addition of towers. Specific features are no-

³⁴ Mackensen 2018, 50.

³⁵ Jones 1964, Vol. 3; Elton 1996, 89–101.

³⁶ Šašel 1988, 815; Bratož 2014, 199.

³⁷ Gaspari 2014, 235–238; Tomažinčič 2018.

³⁸ Gaspari 2014, 235.

³⁹ Cf. Soproni 1978, 194–195; Wilkes 2005, 265–267; Mackensen 2018, 51–60.

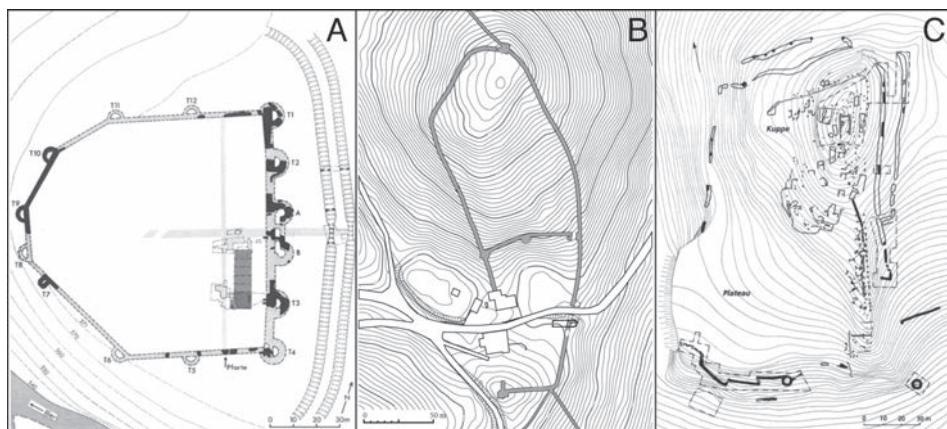


Fig. 2: Selection of better-researched military posts from the Diocletianic-Constantinian period: A Kellmünz (*Caelius Mons*) (after Mackensen 2020); B Hrušica (*Ad Pirum*) (after Kos 2020, Fig. 1; C Katzenberg near Mayen (after Hunold 2012, Fig. 2).

table in the Norican-Pannonian sector of the *limes*, such as fan-shaped corner towers and prominent U-shaped towers integrated into the curtain walls.

During the Tetrarchic period, several important *castella* were constructed along the Raetian *limes* and in its hinterland, utilizing lower elevations for defences. Recent research dates the construction of *castella* at Münsterhügel in Konstanz, Kellmünz (Fig. 2: A), Bürgle, and the significantly reduced *castellum* at Eining to the period between 295 and 300.⁴⁰

In northern Gaul, numerous elevated fortified outposts were established in the hinterland of the Rhine *limes* during Late Antiquity. These were initially interpreted primarily as settlements or civilian refuges.⁴¹ However, recent studies have revealed that they were predominantly military outposts established during the time when Augusta Treverorum became one of the empire's capitals. These numerous hilltop forts in northern Gaul were positioned along communication routes, especially rivers, and are now recognized as military fortifications integrated into a broader defensive system.⁴² They safeguarded civilian and economic life in the countryside and represented a key element of the in-depth military defence system of Late Antiquity.

The best-researched example is the fortification at **Katzenberg near Mayen**, which, with its location, defensive elements, domestic architecture, and small finds, strongly resembles fortifications in the Eastern Alpine region (Fig. 2: C).⁴³ Located on a natu-

⁴⁰ Mackensen 2018, 51–58.

⁴¹ Cf. Johnson 1983, 231; Gilles 1985.

⁴² Gilles 2008, 110–113.

⁴³ Hunold 2011; Hunold 2012.

rally defensible hill, it covered an area of 1.8 hectares. On its more exposed sides, it was enclosed by a 1-metre-thick dry-stone wall with two towers. The upper section was encircled by a wooden palisade – forming an acropolis of sorts – and contained the main building with stone foundations and a hypocaust system. Foundations of several smaller houses, cut into the bedrock, have also been preserved. A larger terrace below the summit, devoid of buildings, likely served as a refuge for residents of the nearby settlement. Based on the finds, the fortification was built around 300 and remained in use until the mid-5th century. Angelika Hunold has suggested that Katzenberg, along with similar sites, formed part of the Late Roman defensive system in northern Gaul, where the concept of defence in depth is clearly observable.⁴⁴

The long fortified frontier line along the Danube (*Ripa Pannonica*) was marked by numerous forts exposed to continuous pressure from the north and east beyond the *limes*.⁴⁵ In many locations, the trend from the final third of the 3rd century continued, with forts being built on elevated, naturally defensible sites. A typical example is **Sibrig domb near Visegrád**, which featured distinctive fan-shaped and U-shaped towers.⁴⁶ Constructed in the 320s on a high hill, it provided excellent oversight of the broader *limes* region in the bend of the Danube. In comparison to lowland fortifications, its defences consisted of walls only 1.1 metres thick.

Following Diocletian's reinforcement of the Danubian *limes*, conditions in the interior stabilized during the first half of the 4th century. In the Pannonian region, this period saw the construction of large so-called "interior fortifications" along major invasion routes toward Italy.⁴⁷ These sites functioned as centres of agricultural estates and administrative hubs. Their strategic locations, robust walls with numerous towers, and military finds indicate a strong military presence. In the literature, they are often described as logistical bases for the front line, accommodating both military and civilian elements. Excavations have revealed numerous residential and economic buildings within their walls, notably *horrea* (granaries). The well-defended and not fully built-up interiors provided shelter for the local population in times of danger. The best-known example of such a combined military-civilian post is **Keszthely-Fenékpuszta**, an entirely new Late Antique settlement covering as much as 15 hectares.

In contrast to the *limes* and its immediate hinterland, military posts from this period are exceedingly rare deeper within the Alpine and Pre-Alpine regions, with only a few strategic points being fortified. At the key military fortress of **Ad Pirum (Hrušica)**, signs of an increased military presence were already evident by the end of the 3rd century.⁴⁸ However, excavations have confirmed that its construction dates to the 320s (*Fig. 2*:

⁴⁴ Hunold 2012, 107.

⁴⁵ Soproni 1978; Soproni 1985; Visy 2003; Durr et al. 2022.

⁴⁶ Soproni 1978, 55–58.

⁴⁷ Tóth 2000; Heinrich-Tamáaska 2015; Szabó 2022.

⁴⁸ Kos 2012, 285.

B).⁴⁹ Adapted to the terrain, the 1.5-hectare *castellum* was enclosed by walls 2.7 metres thick with towers. Excavations have revealed multiple renovations, well-dated by small finds and coinage.⁵⁰ An intensification of settlement activity during the Diocletianic-Constantinian period is also observable at Ajdovščina (*Castra*), Rijeka (*Tarsatica*), and at Gradišče near Vrhnika.

Near the confluence of the Sava and Ljubljanica rivers at **Zalog**, a Late Roman *castellum* was constructed, which Balduin Saria dated to the 3rd–4th centuries based on its construction technique.⁵¹ Trial excavations inside the fort suggest that it was established after the end of the 3rd century.⁵² This is supported by its relatively regular layout and walls over 2 metres thick.

The poorly understood, presumably military outpost at Čentur in the hinterland of Koper may have existed prior to 310.⁵³ The rich coin hoards found there, potentially representing a headquarters treasury, hint at an otherwise undocumented incursion by Licinius into Italy in the summer of 310.

Phase III of the transformation: second half of the 4th century / first third of the 5th century

In the second half, and particularly in the final third of the 4th century, renewed pressure from foreign ethnic groups and outbreaks of civil war led to an intensified construction of fortified outposts, both through the renovation of older fortifications and the building of new, often highly improvised positions. Under Emperor Valentinian, fortifications along the *limes* were restored and numerous *burgi* were built, representing the last grand-scale attempt to strengthen the empire's borders.⁵⁴

In the hinterland of the Raetian *limes*, characteristic small square *castella* with four corner towers (*quadriburgia*) were built at this time. These forts, with their storage facilities, enabled the supply of troops along the *limes*. The well-researched *castellum* at Schaan in Liechtenstein,⁵⁵ located along an important Roman road, is a prime example of this kind of structure, alongside similar forts at Aying, Irgenhausen, and Innsbruck-Wilten, the latter featuring two large *horrea*. To these can be added the harbour *castellum* at Bregenz-Leutbühel and numerous other *burgi*.⁵⁶

The well-excavated fort at **Tokod**, located at an important crossroads along the

⁴⁹ Ulbert 1981b, 43–44; Kusetič 2014, 94–95; Kos 2014; Kos 2020.

⁵⁰ Ulbert 1981a; Kos 2020.

⁵¹ Saria 1939, 147.

⁵² Mikl Curk 1986.

⁵³ Jeločnik 1973, 93, 180; Jeločnik, Kos 1983, 23–24, 39–40.

⁵⁴ Petrikovits 1971, 184–187; Johnson 1983, 193–194; Southern, Dixon 1996, 40–45; Mackensen 2018, 60–62.

⁵⁵ Overbeck 1982, 108–110; Wyss Schildknecht 2024.

⁵⁶ Mackensen 2018, 60–62.

Danube, has been dated to the Valentinian period.⁵⁷ This large fortress, with 1.6-metre-thick walls, was fortified with horseshoe-shaped, semicircular, and rectangular towers and housed a large *horreum* in its interior. Renovations were also evident in the so-called “interior fortifications,” and some, such as Kornye, were newly established during this period.⁵⁸

In the Eastern Alpine region, numerous fortifications were built in the final third of the 4th century, whose strategic positions, defensive architecture, and military finds attest to a strong, and in some cases exclusively military, purpose. Their construction corresponded to the historical events of the time. The Quadi and Sarmatians invaded during the reign of Valentinian, in 374, and following his death the Roman army suffered a catastrophic defeat at the Battle of Adrianople in 378.⁵⁹ This defeat allowed numerous ethnic groups led by the Goths to spread beyond the borders of the *limes*, penetrating deep into the interior of Illyricum and reaching the Julian Alps.⁶⁰

These invaders, often in smaller, mobile formations, avoided main invasion routes and dispersed across the countryside in search of plunder. The changing security situation demanded a new defence strategy, focusing on fortifying the empire's interior. Consequently, Roman military strategy emphasized establishing numerous outposts in depth, designed to protect the population and slow the advance of enemies. With this, military units often cohabited with civilians, while supplies for major forts were provided through a centralized system (*annona*).

On naturally protected sites with hastily constructed improvised defences, both civilians and military units could more effectively resist smaller raiding parties. Many of these fortifications were built hurriedly, often reusing locations that were already naturally well-defended, as had been the case in the late 3rd century. As previously emphasized, these forts lost the distinctive features of earlier Roman military architecture, being heavily adapted to the terrain, thus complicating the distinction between civilian and military posts.⁶¹ Nevertheless, the abundant military equipment found at many sites allows for a reliable identification of their military function.

The construction and duration of these fortifications are dated primarily through coin finds, which frequently indicate an intensification of settlement during the reign of Valentinian and shortly thereafter.⁶² The renewed military forts and the proliferation of new fortified spaces mark the onset of an improvised defence in depth.⁶³

At **Hrušica (Ad Pirum)**, renovations to the defensive tower indicate repairs during Valentinian's reign.⁶⁴ Large quantities of coins found in this fortress confirm intensi-

⁵⁷ Mocsy 1981; Soproni 1985, 58–60; Kocsis 2020.

⁵⁸ Tóth 2000, 35; Szabó, Heinrich-Tamáska 2011.

⁵⁹ Šašel Kos 1996, 154–173; Bratož 2014, 137–146.

⁶⁰ Bratož 2014, 136–146.

⁶¹ Overview: Ciglencečki 2023, 17, 342.

⁶² Kos 1986, 197; Kos 2012, 278–282.

⁶³ Šašel 1983, 108; Christie 1991, 420; Ciglencečki, Milavec 2009, 183–184.

⁶⁴ Svoljšak 2015.

fied occupation in the second half of the 4th century, similar to observations at Castra on the western side of the mountain pass. The large tower at Lanišče was constructed only in the 370s or 380s, as was the fortress at Martinj hrib, which secured a junction off the main route. Both were destroyed and abandoned before the end of the 4th century.⁶⁵

Renovations at **Velike Malence** may also belong to this wave of fortification efforts. Balduin Saria dated the second phase of construction to the late 4th or early 5th century, when the robust walls were further strengthened with towers, showing similarities with the “interior fortifications” of the Pannonian plain.⁶⁶ A solid foundation for an apse was discovered, likely the base for a substantial multi-story building – possibly the *principia* or *praetorium* – and not, as Saria once suggested, an early Christian church. However, based on the layout and tower positioning, a tighter dating of the second construction phase remains questionable.⁶⁷ In the absence of definitive material evidence, the middle placement of the towers might even suggest an earlier date, possibly in the early 4th century, during the Diocletianic or Constantinian periods.

The large fortress at Črnomelj (3 hectares) has been dated to the late 4th or early 5th century.⁶⁸ Surrounded by walls up to 2 meters thick and towers along the outer perimeters, its interior contained mostly wooden structures, as well as what is presumed to be an early Christian church. The abundant imported ceramics and transport amphorae indicate a centrally supplied garrison.

This group also includes the well-researched small fort at **Cuol di Castiel near Forni di Sopra** (Fig. 3: B), situated on a low hill along a secondary route.⁶⁹ Enclosed by walls up to 1.8 metres thick and reinforced with two towers and a ditch, it had a single entrance. Modest traces of wooden houses were found inside. Small finds confirm the presence of a small military garrison tasked with monitoring the road and defending against raids from the second half of the 4th and early 5th centuries. Imported *sigillata* and transport vessels indicate centralized provisioning.

Also noteworthy are the less robustly fortified outposts built or reinforced primarily in the final third of the 4th century. These sites feature simpler defensive architecture, typically consisting of 1-metre-thick walls and often reinforced gateways. More than the previously discussed forts, they conformed to the rugged landscapes of the Alpine and pre-Alpine regions, complicating their identification. It appears that Late Roman strategists managed to secure these exposed locations with minimal construction, creating posts capable of hosting military detachments and their families, and providing control over traffic and population movement. The arrangement of buildings along the defensive wall is similar. These structures likely accommodated small military units with their families, as well as providing space for refugees.

⁶⁵ Kos 2014, 34–35.

⁶⁶ Saria 1939, 145.

⁶⁷ Cf. Wilkes 2005, 261–264.

⁶⁸ Mason 1998; Ciglencečki 2015, 408–410.

⁶⁹ Gelichi et al. 2022.

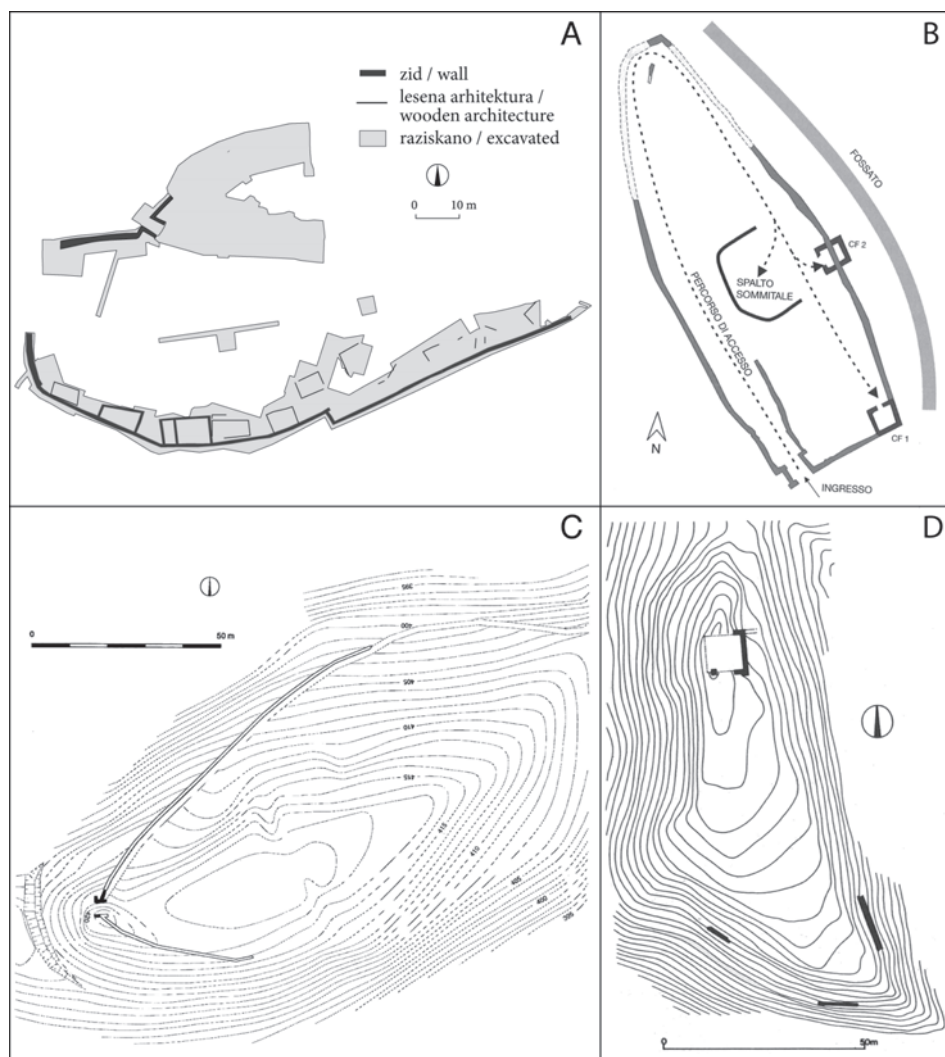


Fig. 3: Selection of better-researched military posts from the second half of the 4th / first third of the 5th century (A Ančnikovo gradišče (after Modrijan 2020, Fig. 3 with Strmčnik, Ciglencečki 2023, p. 48–49); B Cuol di Castiel (after Gelichi et al. 2020, Fig. 3); C Šumenje (after Breščak, Dular 2002, Fig. 17); D Gröbming (after Ciglencečki 1987, Fig. 18)

An example from Austrian Styria is **Schlossbühel near Gröbming**, situated on a

low but naturally defensible hill (Fig. 3: D).⁷⁰ It was surrounded by a 1-metre-thick wall and further secured with a tower on its more accessible side.

Extensive excavations at **Ančnikovo gradišče near Jurišna vas** (Fig. 3: A), located high above the valley traversed by the Poetovio–Aquileia road, revealed a fort whose summit was enclosed by walls 1.6 metres thick at the most exposed western side, and significantly thinner elsewhere.⁷¹ The entrance was fortified with two parallel walls (forming a gate tower). Adjacent to the walls were two larger stone buildings and several smaller wooden structures, while much of the interior remained open. The military garrison likely occupied the stone buildings along the most vulnerable section, taking advantage of the elevated position for observation and signalling. Wooden buildings were probably homes for farmers and shepherds, while the large open space could have accommodated refugees and livestock during times of danger.

At **Kuzelin near Donja Glavnica**, a strong wall was built during this phase, behind which the outlines of houses or tents, with only their floors preserved, were discovered.⁷² Numerous military items emphasize the fortress's role along the shortest route between Siscia and Poetovio, while small finds and a female grave reflect the presence of civilians. Concentrations of coins and other finds date this phase to the final quarter of the 4th and the first half of the 5th centuries.

Based on the nature of the finds and preserved defensive architecture, the fortified settlements at **Brinjeva gora**,⁷³ **Šumenje near Podturn** (Fig. 3: C),⁷⁴ **Ljubična above Zbelovska gora**⁷⁵ and **Crkvišće Bukovlje near Generalski Stol**⁷⁶ can also be included in this group. Stone defensive structures have also been suggested at the less known late Roman phases of **Tonovcov grad near Kobarid**⁷⁷ and **Puštal above Trnje near Škofja Loka**.⁷⁸

Particularly noteworthy is the large hilltop fortified settlement at **Ajdovščina above Rodik**.⁷⁹ Although its densely built interior complex was not enclosed by contemporary walls, it appears that the prehistoric ramparts sufficed. Rich small finds confirm the site's occupation from the 4th to the mid-5th century. Imported ceramics from the first half of the 5th century indicate centralized provisioning.⁸⁰

Prehistoric fortifications were also reused in Late Roman period at **Castelazzo near Doberdò del Lago**.⁸¹ Excavations revealed two phases of fortification of the pre-

⁷⁰ Modrijan 1978; Ciglenečki 1987, 28; Steinklauber 2005, 136.

⁷¹ Strmčnik Gulič, Ciglenečki 2003; Modrijan 2017; Modrijan 2020.

⁷² Sokol 1994; Sokol 1998.

⁷³ Pahič 1980; Pahič 1981.

⁷⁴ Breščak, Dular 2002.

⁷⁵ Ciglenečki 2015, 415.

⁷⁶ Azinović Bebek, Sekulić 2014, 167–168; Azinović Bebek, Sekulić 2019.

⁷⁷ Ciglenečki, Modrijan, Milavec 2011; Modrijan, Milavec 2011.

⁷⁸ Štukl 2004; Ciglenečki, Milavec 2009, 180.

⁷⁹ Slapšak 1978; Slapšak 1985, 136; Slapšak 1997.

⁸⁰ Vidrih Perko, Župančič 2003, 463–467.

⁸¹ Furlani 1969; Maselli Scotti, Montagnari Kokelj 1989.

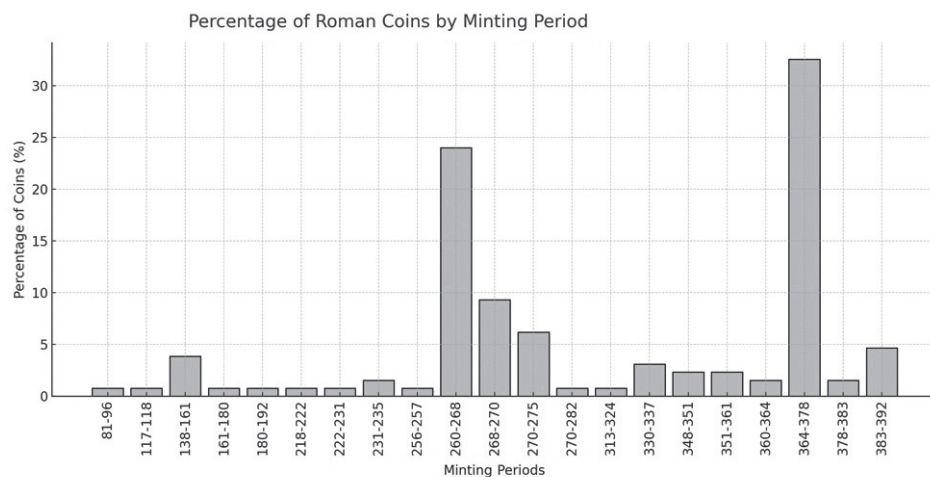


Fig. 4: Coin distribution diagram at the site Rudna near Rudnica.

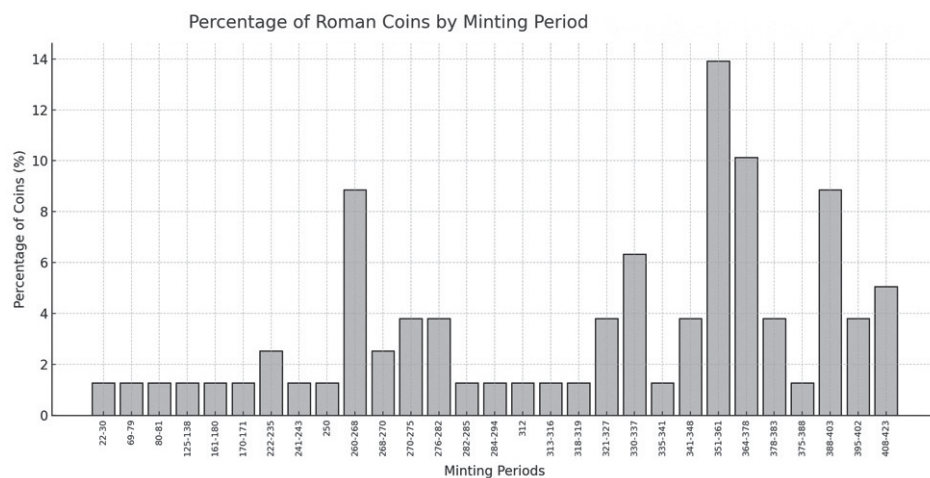


Fig. 5: Coin distribution diagram at the site Tonovcov grad near Kobarid.

historic rampart with a 3-metre-thick mortared wall. Early reports mention several towers and other structures, together with small finds that indicate a strongly fortified military outpost in the 4th and early 5th centuries, protecting the connecting road between the two main invasion routes into Italy from the east.

Finally, mention must be made of outposts without reliable traces of defensive architecture, relying instead on natural positions or prehistoric ramparts. These sites likely served as reserve positions that were used briefly during crises, primarily as refuges for local populations, temporarily reinforced by military detachments. Their locations along secondary routes and the discovery of military equipment and weapons from this period indicate such military outposts at **Mali Njivč near Novaki**,⁸² **Korinjski hrib**,⁸³ **Gradišče near Dunaj**,⁸⁴ and **Rudna near Rudnica**.⁸⁵ The difficulty in distinguishing civilian from military Late Roman outposts is particularly acute at **Zidani gaber**, **Gradec**, **Kozji hrbet**, and **Prag** on the steep northern slopes of the Gorjanci Hills.⁸⁶

The cave sites of **Predjama** and **Tominčeva jama near Škocjan** do not represent typical military fortifications, but finds of military equipment and higher-quality pottery suggest a military presence.⁸⁷ Although no contemporary domestic structures were identified, the caves likely provided at least occasional shelter for small military detachments.

Around the year 400, several major fortifications were destroyed or abandoned, particularly along the main route between Logatec and Ajdovščina (Hrušica, Martinj hrib, Lanišče), as well as at other less-documented sites (e.g. Velike Malence, Šumenje, Mali Njivč, Crkvišče Bukovlje). However, some forts established in the second half of the 4th century retained a partial military function into the first third of the 5th century, and a few even beyond.⁸⁸

Among the larger forts mentioned above, Tokod, Keszthely-Fenékpuszta, Ajdovščina (*Castra*), and Tarsatica, all situated at strategic locations along vital routes, stand out. Their garrisons were large enough to ensure effective defence, and they had sufficiently robust economic hinterlands.

At this time, smaller forts in the Eastern Alpine region with modest masonry defences gained importance.⁸⁹ These include Cuol di Castiel, Ančnikovo gradišče, Doberdò, Šumenje, and the two cave outposts at Predjama and Tominčeva jama near Škocjan. For the first three decades of the 5th century, their existence is confirmed by modest coin circulation and typical late military equipment, as well as imported ceramics representing the last traces of centralized military provisioning (*anona*). Here, military garrisons together with civilians formed the final bulwark of the core territories of the once-mighty empire.

The presence of early Christian churches within Late Roman military fortresses by the middle of the fifth century has not yet been convincingly confirmed anywhere.

⁸² Istenič 2015b.

⁸³ Ciglenečki 1985; Ciglenečki, Modrijan, Milavec 2020.

⁸⁴ Ciglenečki 1992, 25–27; Ciglenečki 1994, 242, Fig. 2.

⁸⁵ Ciglenečki 1992; Istenič 2015a, 157, Fig. 185, 188.

⁸⁶ Križ 2021.

⁸⁷ Korošec 1983; Protzel 1996, 140–143; Vidrih Perko, Župančič 2003, 463–467.

⁸⁸ Overview: Ciglenečki, Milavec 2009; Ciglenečki 2015, 423–424.

⁸⁹ Marcone 2004, 351; Ciglenečki 2007, 318–325; Gelichi et al. 2020, 490.

Along the Rhine *limes*, a few better-researched posts suggested their presence as early as around 400, but critical reassessments of older data have shown that early Christian structures were incorporated only after the fortresses were abandoned, mostly in the second half of the 5th century (Kaiseraugst, Zurzach, Boppard, and Schaan).⁹⁰ A particularly telling case is the site of Georgenberg, where the first (although still archaeologically unconfirmed) church building is mentioned during the visits of Saint Severinus in the 470s.⁹¹ This example clearly suggests that the construction of the first churches in fortresses should be expected only in the decade marking the final collapse of the Roman Empire. The supposed early Christian church at Črnomelj likely dates to the time when the fortress had already transformed into a civilian fortified settlement, and perhaps regained a stronger military character only in the Justinian period. A similar case is known at Tarsatica, where the church was built only after the site ceased to function as a military base.⁹² The Late Antique church historian Theodoret wrote around 450 that Theodosius spent the night in prayer in a church on the eve of the Battle of the Frigidus in 394. However, older accounts of the battle do not mention this, and archaeological investigations at Hrušica have not revealed any trace of a church.⁹³

A comparison of the eastern Alpine hilltop fortresses with the posts in the hinterland of the Rhine *limes* reveals notable similarities. The choice of location and construction techniques are comparable: walls were built only in exposed places and reached a thickness of about metre, while towers were rare. Sometimes entrances were reinforced with gate towers (Katzenberg, Cuol di Castiel, Ančnikovo gradišče, Šumenje). The interiors were built up to a limited extent, with buildings mostly aligned along the walls. Rare masonry structures were present alongside more common buildings made of perishable materials or even improvised constructions. Most fortresses featured a larger open space inside, intended for refugees and livestock.

In northern Gaul, military fortresses were already established around 300, safeguarding settlements and economic facilities in the lowlands. This represents a parallel existence of fortresses alongside still densely populated valleys. In the eastern Alpine region, settlement shifted back to the hills only in the last quarter of the 4th century, resulting in a combination of military and civilian settlements, with only occasional open spaces for refugees indicating nearby unprotected settlements. However, lowland settlements became significantly fewer, with most of the population by this time living only in Roman towns, a few rural villas, or poorly known locations away from major routes. Although the timing of fortification in the two compared areas differed, fortresses generally persisted at least into the first three decades of the 5th century (as indicated by coin finds), and some perhaps even until the mid-5th century.

⁹⁰ Prien 2012.

⁹¹ Ubl 1982, 85; Lang 2019.

⁹² Višnjić 2019, 96–98.

⁹³ Ulbert 1981b, 48.

The defence of northeastern Italy in the Late Roman period

Building on the development of Late Roman fortifications outlined above, we now briefly examine the fortification of the northeastern frontier of Italy. Efforts to defend the approaches to Italy can be traced back to the little-documented *praetentura* of Italy in the second half of the 2nd century.⁹⁴ The natural Alpine barrier was further strengthened during Late Antiquity. In the 260s or 270s, there was a brief phase of fortification at strategically vital points along key roads and passes (Castra, Tarsatica, Pasjak, Solin) (Fig. 6). This may correspond to a report in the *Scriptores Historiae Augustae*, which states that in 269/270 the brother of Emperor Claudius II Gothicus, Quintillus, was commanding the defences of Italy (*Claustra Italiae*).⁹⁵

Following Diocletian's restoration of the *limes*, a few new fortifications appeared in the interior (e.g. Hrušica, and possibly Zalog) (Fig. 6). The strengthened frontier brought nearly half a century of peace, allowing for a final flourishing of both urban centres and rural areas. Although civil wars and internal conflicts led to some repairs and even the preventive construction of certain segments of barrier walls, their primary purpose at the time was traffic control. One such example is the southern branch of the linear wall with a gate tower, dating to the mid-4th century, which connects to the fortress at Hrušica.⁹⁶

Fortification efforts peaked in the second half of the 4th century, when the renewed and newly built fortifications along the *limes* were supplemented by the strengthening of the defensive system in the Julian Alps (Fig. 7). Evidence includes the renovation of the fortress at Hrušica (*Ad Pirum*) (with the Valentinian-era reconstruction of the southwestern tower), the construction of fortresses at Martinj hrib and Lanišče, as well as an extensive network of barrier walls with towers, watchtowers, and signal posts protecting Italy from eastern and northern incursions.⁹⁷

The issue of the linear barrier walls and their associated fortifications does not require detailed discussion here, as these structures have been addressed in numerous recent studies.⁹⁸ Archaeological evidence indicates that barrier walls along the main invasion route via Hrušica existed by the mid-4th century. Their abandonment, like that of the fortress at Hrušica itself, can be dated to the early 5th century, while smaller sites (Martinj hrib and Lanišče) were abandoned even earlier. However, the precise duration of other shorter sections of the barrier walls along secondary routes remains uncertain, though the associated fortifications persisted at least into the first three decades of the 5th century (e.g. Puštal above Trnje, Korinjski hrib).

As mentioned earlier, the road over Hrušica was abandoned by the early 5th cen-

⁹⁴ Šašel 1974a, 388–396.

⁹⁵ Šašel 1974b, 257.

⁹⁶ Kos 2012, 286.

⁹⁷ Kos 2014; Kusetič 2019.

⁹⁸ Kos 2012; Kos 2013; Poulter 2013; Kos 2014; Kusetič 2014; Ciglenečki 2015; Ciglenečki 2016; Kusetič 2019.



Fig. 6: Sites mentioned in the text from the second half of the 3rd century (red) and the Diocletianic-Constantinian period (black) in the southeastern Alpine region.

tury at the latest, while fortifications along secondary routes to the north and south of the abandoned main thoroughfare remained in use. With this layered defence in depth, the last military units – or at least local militias and *foederati* – secured all major passes leading into and out of the rugged, mountainous approaches to Italy. Among the already discussed sites, we should mention Tonovcov grad, Ajdovščina above Rodik, Predjama, Castellazzo near Doberdò, and Cuol di Castiel.

The discussion surrounding the *Claustra* reveals a wide range of interpretations, attributing to it various roles: from a significant, militarily organized line of defence,⁹⁹ to a system mainly employed during period of civil wars,¹⁰⁰ a means of controlling traffic and directing migrations.¹⁰¹ Recent decades of research, supported by both known sources and more reliable archaeological evidence, have confirmed both the military significance of the system and its chronology.¹⁰²

The surge in coin finds from the reign of Valentinian at many fortified sites indi-

⁹⁹ Šašel, Petru 1971; Ulbert 1981b, 42–43; Kos 2014; Bratož 2014, 194.

¹⁰⁰ Christie 1991.

¹⁰¹ Johnson 1983, 221; Poulter 2013.

¹⁰² Kos 2012; Bratož 2014, 194; Kos 2014.

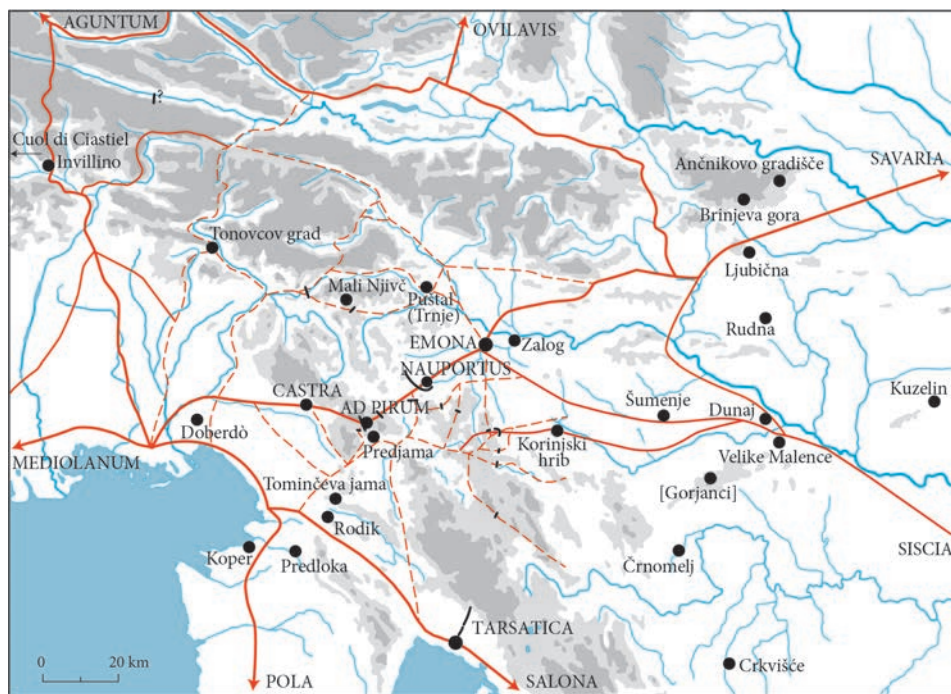


Fig. 7: Defensive walls (black lines), reconstructed road network (red lines), and sites mentioned in the text from the second half of the 4th and the first third of the 5th century.

cates an intensified military and civilian presence. Precise chronology remains elusive, as the dating relies primarily on numerous, often non-professionally recovered coins. While the exact timing of the construction of individual segments of the barrier system remains unclear, it is certain that the walls along the Hrušica route and the northern edge of Istria were at least contemporary with the Valentinian-era renovations. Research shows that fortification efforts intensified precisely when Gothic and other invasive groups dispersed across Illyricum. With main settlements along key roads depopulated, mobile raiding parties sought alternative routes toward Italy, making their protection essential. The expansive defensive system aimed to slow enemy advances, weaken their forces, and prevent the organization of battle formations until they could be confronted by the main Roman forces on Italian soil. Although some have proposed that this defence-in-depth strategy emerged only at the beginning of the 5th century, archaeological evidence supports an earlier inception.¹⁰³

This comprehensively conceived defence zone also included cities that hosted the main military forces, which in times of crisis were redeployed to smaller fortifications

¹⁰³ Cf. Christie 1991, 420.

at strategic points. We have already noted the example of Tarsatica, which by the final third of the 3rd century had been transformed into a major military headquarters. In the area ahead of the barrier system, we must also emphasize Emona, which represented the key to the central sector of the defensive zone. Numerous archaeological finds of military equipment, weapons, coin hoards, and some graves attest to a military presence.¹⁰⁴ Additional evidence includes the substantial quantities of imported ceramics and transport amphorae, indicating organized provisioning (*annona*).¹⁰⁵ During this period, the city's fortifications were strengthened, its gates walled up, and some public buildings renovated.¹⁰⁶ Among the excavated *insulae*, building XIII at the southwestern edge of the city stands out: due to its location and layout, several scholars have suggested a military function, and Peter Petru even identified it as a *praetorium*.¹⁰⁷ Although definitive proof is lacking, its proximity to the western gate and distinctive design suggest a special purpose. Individual burials both inside and outside the city hint at the presence of *foederati* units.¹⁰⁸

Some scholars have sporadically argued that the abandonment of the *Claustra* system coincided with the rise of hilltop settlements.¹⁰⁹ However, reliable archaeological evidence shows that population movements to fortified outposts were contemporaneous with the existence of the *Claustra* and, at least in the central defensive belt, formed an integral part of the barrier system.¹¹⁰

In addition to the fortifications already mentioned, at least two more sites within the defensive zone deserve attention. The remains of Roman military equipment found in the Roman villa on the large, unfortified plateau at **Predloka** suggest the presence of a unit that controlled two important routes. Matej Župančič identified features of military gear, including a *Muthmannsdorf*-type buckle common in the Rhineland, and hypothesized that this item may have arrived in Predloka only after Alaric's invasion of Italy in 401, when Roman troops were withdrawn from the Rhine for the defence of Italy.¹¹¹

The coastal zone also contained fortresses that persisted into the 5th century. In addition to the aforementioned Tarsatica, where military structures remained in use well into the 5th century, there was a fortress on the former island of present-day Koper, which controlled maritime traffic. Jaroslav Šašel had proposed its location at the highest point of the former island, a hypothesis confirmed by excavations in the 1990s.¹¹² Among the abundant small finds from the 4th and 5th centuries were items

¹⁰⁴ Schmid 1913; Plesničar 1997; Gaspari 2014, 235–238.

¹⁰⁵ Vidrih Perko, Župančič 2003, 262–263.

¹⁰⁶ Saria 1939, 144; Plesničar 1997; Gaspari 2014, 224–234.

¹⁰⁷ Schmid 1913, 96–102; Petru 1977; Gaspari 2014, 186.

¹⁰⁸ Vuga 1985; Knific, Tomanič-Jevremov 1996.

¹⁰⁹ Cf. Christie 2001, 241; Vanesse 2007, 118.

¹¹⁰ Šašel 1971, 99–100; Ciglenečki 2008, 487–489.

¹¹¹ Župančič, 2002.

¹¹² Šašel 1974c, 453; Cunja 1996, 130.

of military equipment and weaponry, as well as numerous examples of tableware and vessels for transporting goods.¹¹³

A brief survey of the fortification of northeastern Italy reveals its origins in the 260s and 270s, with the construction of key outposts and a short-lived network of improvised positions. In the early 4th century, only the fort at *Ad Pirum* is reliably attested at a strategically crucial location. By the second half of the 4th century, the Romans had established a complex defensive network, including major military bases (e.g. *Castra*, *Tarsatica*, *Ad Pirum*), smaller camps and posts (Lanišče, Martinj hrib), fortified military-civilian settlements (e.g. Tonovcov grad, Puštal), and an extensive linear system of barrier walls and observation points. This system, known in the sources as the *Claustra Alpium Iuliarum*, was upgraded several times but abandoned in its central section along the main Hrušica route by the early 5th century. At that time, traffic shifted to alternative passes, while fortifications remained distributed in depth across the territory, and many persisted into the first half of the 5th century.

¹¹³ Cunja 1996, 193–194.

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