



Author's artistic interpretation showing a hypothetical reconstruction of a cubete artillero based on the structural remains discovered at Mdina.
(Image Source: Dr Stephen C. Spiteri Ph.D.)

A Cubete Artillero at Mdina? Gunpowder fortifications in Late Medieval Malta¹

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The recent archaeological discoveries at Mdina have revealed how little is really known about the true shape and form of this city's ancient and medieval fortifications. The discovery of the remains of what appears to have been a small semi-circular bulwark from the early-gunpowder era sheds important new light on both the nature and quality of Mdina's defences during the fifteenth century as well as the level of the local understanding of the concepts of gunpowder warfare prior to the coming of the Knights of St John to Malta in 1530. This new physical evidence shows that Maltese medieval strongholds and fortified encintes were far from the simple featureless walled enclosures that they have often been thought to be. On the contrary, the new evidence hints at what was once a sophisticated enceinte stiffened with dedicated defensive structures and devices, clearly evolving over time and absorbing many of the influences that shaped medieval fortress-building throughout Europe and the Mediterranean region.

Maltese late medieval fortifications

The medieval castle is missing from the Maltese landscape. Its distinctive silhouette of crenellated battlements, towers, and barbicans finds no echo in the network of Hospitaller and British fortifications that dominate the island's harbours and shores. Nearly all of the ramparts that can be seen today date from a much later period in

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the history of the island, when the shape and form of military architecture were dictated by gunpowder-operated artillery.

This was not always the case, however, and up until well into the seventeenth century, visitors to these shores could still easily make out the presence of a few ancient strongholds and towers, or remnants of ancient enceintes. Indeed, when the knights of St John first set foot in the Maltese islands in 1530, they found an existing, albeit modest, defensive network of three castellated sites and a handful of outlying towers. Two of the main fortified locations, Mdina and the Gozo Castrum, could then already lay claim to a great antiquity. By the early sixteenth century, however, practically all these defences were considered obsolete, offering very little military advantage to the warring Hospitaller knights in an age increasingly dominated by cannon. Compared to the mighty ramparts and bulwarks of Rhodes, which had bristled with solid, earthen-packed polygonal bastions, aggressive countermines, and outerworks (a massive fortified system which the Order of St John had been unwillingly forced to give up to the Turks after a six-month long siege) the puny fortifications of Mdina, Gozo and the Castrum Maris were but inconsequential outposts, their weak walls, obsolete, rundown, and decaying.

Consequently, it was not long before these ancient walls began to disappear. Slowly but steadily, as the knights sought desperately to drag the old fortifications into the modern gunpowder era, new bastions and terrepleined curtains began to replace the fragile old enceintes. In less than a century, large tracts of old walls had given way to new bastions and ramparts *alla moderna* and by the end of the Order's 258-year rule, in 1798, very little were left to be seen of what were once the ancient and medieval fortifications of the Maltese islands.

Unfortunately, the Hospitaller records themselves reveal very little about the nature of the then-existing medieval fortification which they inherited in 1530. The Hospitallers' concern to upgrade the fortification of Mdina, the Grand Castello and the Castrum Maris with new bastions and terrepleined curtain walls does, however, imply serious limitations in the ability of the then-existing medieval fortifications to protect themselves against artillery bombardment. In other words, the Maltese medieval fortifications were still geared towards a predominantly vertical form of defence. Whatever provisions for artillery defence they had acquired by the time of the arrival of the knights, and the evidence, as will be shown later on, points to the fact that indeed a number of such features were in place by 1530, these elements were mostly the product of the mid-to-late 1400s and, therefore, largely obsolete by the requirements of the sixteenth-century.

Indeed, by the late 1520s, the concept of the *fronte bastionato* was well understood and most of the fortresses around the shores of the Mediterranean had already acquired a sprinkling of bastions and *rondelle*. The Maltese islands' lack of artillery-resistant fortifications, therefore, betrays serious limitations in

the islanders' abilities to update their system of fortifications, largely because of a lack of financial, organizational, and technical resources and the Spanish crown's reluctance to invest in the islands' defences.

In striking contrast, however, no effort was spared to turn the citadel of Tripoli, captured by the Spaniards in 1510, into a bastioned fortress heavily fitted out with bastioned ramparts and artillery. Even the few resources available to the Maltese islands were exploited for this venture – Notary P. Alaymo gives a list of seventy two labourers who were sent from Malta to work on the fortifications of the new Spanish outpost in 1519. Admittedly, Tripoli was a very sensitive frontier stronghold, maintaining Spain's precarious foothold on the North African coast and, therefore, by its very nature dangerously exposed to continual Muslim threat – hence the upgrading of its fortifications. But the inability, or even unwillingness, of the Spanish crown to invest in the defences of the Maltese islands, similarly perched on the frontier with Barbary, with more than perfunctory repairs says much about the archipelago's real strategic value in Spanish eyes.

Evidence for gunpowder defences in pre-Hospitaller Malta.

Concern for artillery defence in the Maltese islands first comes to light in the third quarter of the fifteenth century. The earliest documented mention of cannon dates to 1474 when the sum of 25 *uncie* was disbursed by the *Universitas* (Mdina town council) for the purchase of '*cherti bombardii*' and again in 1479 when the sum of 8 *tari* was disbursed by the town council for the repair of gun carriages ('*per li charretti della artiglieria*'). The President of Sicily's promise, in 1485, to send bombards, saltpetre, and sulphur shows that the local defences were still considered under-gunned. Indeed, in January 1485 we find Johannes de Nava's ship sailing to Messina and elsewhere in Sicily in search of '*bonbardi et altri artiglierii*' for use in the Castrum Maris.

Local demands to the Viceroy for more artillery pieces are encountered again in 1488. By 1495 there is an established presence of bombardiers – all foreigners – three to four in Mdina, two in the Gozo *castrum* and an unknown number at the Castrum Maris. By 1500 there was enough local expertise to enable the manufacture and refinement of gunpowder, the construction of gun carriages and the repair of cannon. The number of gunners does not seem to have increased by 1530, however, implying that the arsenal of fortress guns had changed little in quantity.

Although no inventory of the type and quality of guns from the pre-1530 period has been found to date, the severe limitations of the quality and quantity of this equipment is attested by the early Hospitaller accounts. For example, Bosio states, disparagingly, that the Castrum Maris could only boast a *mezzo canone pietrero*, *due falconetti* and some bombards.

The lack of a proper account of the nature and type of cannon employed in the three fortresses also poses a great difficulty in understanding the manner in which this equipment would have been deployed and mounted on the ramparts, and hence, indirectly, on the typology of fortress construction. Although the small artillery pieces could be easily deployed from any narrow medieval *chemin-de-ronde* and discharged over battlements and crenellations in the same manner of bows and crossbows of the period, the heavier pieces – the bombards and large *pietriri* – however, required solid, stable, and spacious platforms, all shielded by parapets to protect the gunners themselves from enemy fire and bombardment. What this meant, technically, was that by the 1470's, and perhaps even earlier, the walls of Mdina would have had to be adapted both to be able to mount the defensive ordnance and equally important, to absorb greater punishment from enemy bombardment.

In most medieval castles, this was generally achieved by the widening and thickening of the ramparts with added layers of earth, often by back-filling of the houses lining the walls on the inner side of the ramparts. Existing towers were likewise filled in with earth and transformed into solid cylindrical or rectangular bulwarks. In fact, we can catch a glimpse of this happening in Gozo, for example, when a section of wall on the southern part of the enceinte of the *castrum* was dismantled and rebuilt anew, (*'alargandulu di lu antiquu pedamentu'*) in an attempt to thicken the ramparts, while some form of *scarpa* is recorded as having been erected along the Birgu front of the *Castrum Maris* in 1487. It is not clear yet if similar interventions were carried out on Mdina's medieval walls. So far, the records are rather vague on the nature of the works undertaken in the second half of the 1400s, which usually only mention the widening and completion of the main ditch.

It is now known that by the 1400s Mdina had a system of double walls for most of its enceinte. A high inner main wall, the *megateichos*, and a lower outer *antemurale* (the *proteichisma*), a sort of *faussebraye* separated from the main wall to its rear by a fighting corridor, the so-called *fasil*. Albert Jouvin de Rochefort could still very clearly make out these double walls in 1663 and a large part of this enceinte survived well into the eighteenth century. Today, however, only a small section of this system of double walls has survived. A portion of main inner wall, (*megateichos*) situated to the rear of De Redin Bastion has survived to reveal the unique remnants of two circular gun loops of the type that can be found on many castle walls dating to the second half of the 1400s. The width of the *megateichos*, around 3m made it a rather narrow gunplatform and reveals that the main wall had not been thickened. As a gun platform these ramparts (between 9 to 10 m in height) seem to have stood relatively high in the ground and exposed to bombardment. Indeed, the documents show that some of the guns in Mdina were mounted high on the ramparts, such that in 1522, it took a number of slaves three days to *'xindir*



General view of the lower courses of the unearthed platform found at Mdina. (Image Source: Author's private collection)

l'artiglieria dili mura' (i.e., to bring down the guns from the walls) before these could be serviced.

The recent archaeological excavations have now also confirmed the presence of double walls on the east and west sides of the town's enceinte, below Vilhena Palace and Xara Palace Hotel, as well as at the foot of Magazine Curtain respectively. The presence of these remains had long been suspected by the author. In his earlier research on Mdina, the present author had come across various papers by the Order's resident French military engineer, Charles Francois de Mondion, then involved in the reconstruction of Mdina's fortifications and the magistral palace in the early 18th century, which mentioned the presence of the remains of ancient outer walls at the foot of the ramparts, *'... quali vestigi non solamente si vedono nel detto fondo ma anche si distendono fin quasi il posto baccar dove s'attacano con il roccame che resta scoperto sotto le mura di essa Città.'* Mondion's report mentions that these *'replicati vesitgi di falsabraga'* (hence *antemural*) also spanned all the way from below St Peter's Bastion – then being fitted out with a low battery – round to the Ta' Bacchar, or St. Mary Bastion overlooking Mtarfa.

The extensive archaeological investigations initiated by the Restoration Unit in the Works Division, Ministry for Resources and Rural Affairs in 2007, and then expanded by the Superintendence of Cultural Heritage, were instrumental in exposing the remains of a trace of outer Byzantine *antemurale*. This Byzantine outerwall was faced largely with re-utilized Roman blocks of hardstone and, at two points, even found to have been revetted with a masonry talus.

This Byzantine *antemurale*, however, was found to have been partly dismantled and replaced in one area by a sizeable semi-circular structure, revetted in smooth faced ashlar *kantuni*. Understandably, the discovery of the remains of the base of this large semi-circular structure, which was only hidden from view by a thin surface layer of soil, generated considerable excitement. The platform, with a diameter of some 12 m, was grafted onto the base of the existing main wall. The semi-circular structure itself consists of a very tightly-packed terreplein of rubble and earth, revetted with neatly-laid courses of finely-worked medieval ashlar blocks.

A *Cubete Artillero*?

Initially, it was thought that the structure formed the base of some unrecorded medieval tower (all towers along the Mdina front are recorded and accounted for). However, it was soon discovered that it did not have the desired solid foundations that could have possibly enabled it to rise to any significant height so as to match the adjoining rampart, resting as it does, not on bedrock, but on a bedding of packed rubble. As a result, it soon became clear to the author that this was not the base of a tower but some sort of gun-platform that had been grafted onto the base of the main rampart walls in order to provide a flanking position along what appears to have been a towerless eastern flank of the town. From this position, the platform controlled both the approaches to the town walls from Saqqajja and an old road coming up from Ta' Qali.

The semi-circular plan of the unearthed structure immediately suggested a typology of flanking devices of the kind constructed in Spain in the latter half of the fifteenth century and known as *cubete artillero* (translated literally as 'artillery barrel'). This was a sort of hollow or casemated semi-circular artillery bulwark, of small dimensions and low in height, with its walls pierced with circular gun-loops and loopholes, projecting from the foot of the rampart which it was designed to enfilade. More than a bulwark, the *cubete* is often described as a proto-caponier as, unlike a bulwark, it projected from and covered only the lower part of a rampart, much in the manner of later fighting caponiers.

Well-preserved examples of *cubete artillero* can be found at the north-west angle of the Alcazar Real de Carmona (Seville), the castle of Astudillo (Palencia)

and at the castle of La Calahorra in Granada. The Carmona *cubete* is attributed to Francisco Ramirez de la Madrid, or de Oreña, who was appointed by Queen Isabela I as '*obrero mayor des alcazares y ataranzanas de la ciudad de Seville*' in 1478 and later as *Artillero Mayor* before his death in 1501. The construction of the Carmona *cubete* is considered to have occurred sometime between 1486-8, and was followed by that at Astudillo some time later, and that of La Calahorra around 1509. Both the Astudillo and Calahorra *cubete*, provide close models for the Mdina structure.

By the late fifteenth and first decade of the sixteenth century the semi-circular/circular type of gun-platform could be found being built across Europe and the Mediterranean. Italian engineers like Bartholino de Castiglione and Baslio della Scuola were busily working for the Hospitaller knights building semi-circular and circular artillery bulwarks at Symi and Kos (Andimacchia and Narangia) and the Bastion of Italy on the enceinte of the city of Rhodes.

The Mdina platform echoes both the typological and structural features, dimensions and positioning, of a *cubete artillero*. A precise date for its construction is difficult to determine. The archaeological evidence, however, does point to the fifteenth century.

Dating the period of construction

There are two known major fortification efforts occurring during the latter half of the fifteenth century which can provide a specific context, and a possible date for the construction of Mdina's *cubete*. These were the general mobilizations and extensive military preparations of the 1450s and 1580s respectively, prompted by the fear of Barbary and Turkish invasions. The episodes of the 1450s saw most of the effort directed at the widening of the land front ditch and the dismantling of the badly maintained *castrum civitates*, the town castle occupying the south-east angle of the enceinte. The 1450s, however, are unlikely as proving to be the period when the *cubete* was constructed. For one thing, there is no hint in the available documentation of the presence of guns or bombardiers at Mdina during this period to justify the construction of such a dedicated structure. It appears that Mdina had no gunpowder operated artillery at this time so there would have been little need for a dedicated artillery platform.

The extensive military preparations of the 1480s, on the other hand, are a different matter. By this time there is clear evidence of *bombardi* deployed along the walls of Mdina. Although, again, the authorities seem to have been largely concerned with '*lu spachamento di li dicti fossi*' during this general emergency, for which a nation-wide corvée (the *angara*) was organized to provide the necessary

January 1481, the Viceroy Gaspar Despesent over Julianus Mundo to take over the office of Captain at Arms and a few years later, in 1485, one of the two presidents, Johannes de Valguarnera, Baron of Asaro, himself came over to inspect that state of the island's defences and order 'quillo sarra necessariu in defensioni dilo dicto regno'. In 1486, Alvarus Peres, recommended by the Castellan of the Castrum Maris Johannes de Navaz, was appointed as *marammerius* (overseer of works). Again in 1488, following the Turkish assault on Malta that year, the President, Julianus Centelles promised to send Mastro Portolano as *Capitan d'Armi*. Unfortunately, the minutes for the council meetings for the vital period from late July 1483 to October 1498, have not survived to provide any clues on the nature and type of works carried out during these important years. It was during these seminal years that many of the new concepts and ideas on gunpowder fortifications began to rapidly gain ground around the shores of the Mediterranean.

Although no particular reference to the presence of Spanish or Italian military engineers has been recorded on the island throughout the period under review it is clear that there existed plenty of opportunities for the influx of new concepts of gunpowder fortification to fitter into the Maltese *milieu* in the late fifteenth and early sixteenth centuries from both Sicily and Spain, through both military and political channels. The discovery of the remains of a cubefe-style of structure at Mdina shows that the degree of influence and assistance from Spanish fortification experts in the late fifteenth century was indeed considerable.

Why this awareness did not eventually translate itself into more modern gunpowder bastions and defences, such as the veritable polygonal bastions erected *alia moderna* by the Spaniards at the citadel of Tripoli after its capture in 1510, is difficult to explain given the positioning of the Maltese islands *in Fronteria Barbarorum*. A primary reason would surely have been the lack of local financial resources. The cubete was a relatively small structure and the expenses of its construction would have been absorbed, albeit with some difficulty, by the local authorities through taxation but the construction of much larger and increasingly complex bastions of the sixteenth century would have required more substantial resources and expertise which neither the Maltese nor Gozitan *Universitas* could have mustered on their own accord without direct Imperial assistance.

Constructional details of the remains of the revetment and earth-packing of the unearthed platform.

(Image Source: Author's private collection).

manpower, the contemporary records also mention the need for '*altru riparu di mura*', works which could have also involved the addition of new defensive structures such as the gun platform in question.

That modern notions of artillery defence were then beginning to seep into the minds of the local community can be easily gauged from some of the defensive provisions that were put into force on that occasion: in 1480, for example, the council of Mdina met to discuss the demolition of churches, houses, and taverns situated outside, and close to the walls of the town in order to create a clear field of fire for the town's few cannon, and indeed a number of structures were eventually razed to the ground to this end. A similar concern would undoubtedly have been shown, at some stage, for the need to provide enfilading fire along the flanks of the town, for which some sort of projecting platforms would have been absolutely necessary given the absence of wall towers and jinks in the trace of walls along this part of the enceinte.

It is also interesting to note that the defence preparations of the 1480s were directed and guided by various experienced military men sent over from Sicily. In