

The Provisioning of the Military Construction Workers of Sveaborg 1747– 1752: The Magazine Supply System in Peacetime

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The topic of this article is how a system to produce and supply foodstuffs, especially bread, to soldiers was developed and maintained by the military authorities in Finland in the middle of the eighteenth century. I shall show how this supply system enabled the authorities to provide food for thousands of soldiers engaged in building the fortress of Sveaborg outside Helsinki (Helsingfors in Swedish), which at the time was a small town of 1,500 inhabitants. The fortress of Sveaborg was part of Sweden's military strategy that was developed after the great losses she had experienced against Russia in the first half of the century. The fortress was built in many phases over the eighteenth and nineteenth centuries, and it was a large construction site for decades. In this study the focus is on the first construction phase of 1748–1756.

The systematic studying of military logistics in the early modern period began in the 1970s. Since then much interesting work has been done concerning logistics and war. In these studies the focus has mainly been on times of war. During the European wars of the seventeenth and eighteenth centuries tens or even hundreds of thousands of soldiers had to be fed and supplied throughout long military campaigns. The strain on the land was enormous and the management of logistical problems could often decide the outcome of the whole campaign.¹ However, by studying only times of war, the importance of peacetime supply systems can be forgotten, or at least not enough emphasized.

In an era of standing armies, large numbers of soldiers were stationed in various garrison towns across Europe, and they had to be fed year after year. How was this organised? This question has received little attention from historians until now. For example, Martin van Creveld mentions that during the reign of Louis XIV even in peacetime the French Army seldom fell below 150,000 men, yet he does not really discuss how such a force was supplied.² Martin Hårdstedt has dealt with this subject in an article 'Att föda en garnison', which investigates how

the Russian garrison of Åland was supplied in the beginning of the nineteenth century. He too has pointed out that peacetime demands are often forgotten, even though large-scale military activities also took place during peacetime.³ In Sweden, a tenure system (*indelningsverket*), ensured the supplies required for most of the army in peacetime. Nevertheless even Sweden had some garrison troops. The tenure system will be discussed later in more detail.

Furthermore, the foundations for wartime military actions were often laid during peacetime. Although the supply organisation was much larger and more complex during a war than at other times, even then it was mostly based on the same preconditions: stores of food, mills, bakeries, means of transportation, and ways to procure goods. This was especially true in the case of a defensive war, when it was impossible to supply an army from enemy territory and the army had to rely solely on the resources of its own land. Living off the country and pillaging was not a real option in such a situation.

The aim of this article is to demonstrate – through a case study – how important a supply system could be in peacetime and how it could evolve even in a few years into a more complex and better organisation with long-term effects. The focus is in defining what soldiers needed for sustenance and analysing the means used to meet this need. To this end, the organisation of supplies is divided into different categories: procuring grain, manufacturing bread (grinding and baking), magazines and transportation.

Peacetime as a concept is problematic and needs some clarification. Wartime conditions did not necessarily begin or end with a declaration of war or peace. Hårdstedt has argued that it would be better to have a broader view of war and to see it as a process of gradual change in a sequence between peace, war and peace. It might even be preferable to use the concept of not-war (*icke-krig*) instead of peace.⁴ In this study the concept of wartime is used for practical reasons to describe a formal state of war and peacetime a formal state of peace. But the validity of these concepts in connection with the military supply system will be critically examined.

The subject of this study is the organisation of provisions for the military construction workers of the fortress of Sveaborg in the first construction phase 1747–1752. It was not uncommon to use soldiers as a workforce to build canals, fortresses and roads in pre-modern Europe.⁵ The construction work of Sveaborg was, however, an exceptionally large project by Swedish standards. Every regiment in Finland was mobilised to build the fortress at one time or another, and during the most intensive years regiments from Sweden were also used.⁶ Sveaborg's workforce was many times larger than the population of the nearby town of Hel-

sinki. As such, this construction work was challenging to support, and it offers a good opportunity to study the workings of the magazine system.

The time period of 1747–1752 makes it possible to study the magazine system as a whole, because it was during these years that Gustav Fredrik von Rosen, a general and Councillor of the Realm (*riksråd*) was Governor General of Finland. In reality his mission was to act as the commander in chief of the army in Finland, which meant that supply questions were also ultimately concentrated under his authority. Otherwise questions of supply would have been dispersed among individual governors and regimental chiefs. von Rosen was appointed Governor General in 1747 and held the office until it was abolished by the estates of the Diet (*riksdag*) of 1751–1752.

The main sources for this study are the letters from the Governor General to the King, or in other words to the aristocratic Council of the Realm (*riksrådet*), which at this time ruled in the name of the King. In addition, I have used letters addressed to the Governor of the Province of Uusimaa and Häme (Nylands och Tavastehus län), as well as minutes of the Town Council (magistrate) of Helsinki. No archives for von Rosen himself exist, so it is not possible to use letters that he received, except for some drafts of letters. Another problem with the source material is that only few accounts of the army magazine of Helsinki have survived to this day. The surviving accounts are not complete and are divided between two different archives: *Helsingfors fästnings arkiv* in the Military Archives (Krigsarkivet) and *Strödda militieräkenskaper efter 1630* in the National Archives, both in Stockholm. Only accounts for the years 1750 and 1751 are in adequate condition. In addition to these accounts, there are the accounts of the war commissariat for 1747 in the Military Archives. By combining the letters, the minutes and the surviving magazine records, one can reconstruct the supply organization reasonably well.

The Magazine System in Northern Europe

The magazines were the core of the eighteenth-century supply system. Mostly grain, flour and bread were stored in the magazines, but also some meat, fish and butter. Bread was the most important provision for the soldiers.⁷ Historians have argued about the importance of magazines in the European seventeenth- and eighteenth-century army supply systems. Traditionally, military historians have thought that the supplying of armies was based on pillage and plunder until the middle of the seventeenth century. From that point on France and other central-

ized states began to develop more regular supply organizations. Food and fodder were gathered in magazines in advance, from which they were then transported to the troops by wagons and river crafts. These ‘umbilical cords’ of supply bound armies until the late eighteenth century.⁸

This view has been criticized by Martin van Creveld, who has argued that throughout the seventeenth and eighteenth centuries armies continued to live off the country and had no need to rely on supply convoys and magazines. He has stated that it was primarily when sieges were undertaken that such convoys were needed. When an army was on the move, it could get what it required from the campaign area.⁹ John A. Lynn has opposed this view by pointing out that Creveld did not make a distinction between food for men and fodder for animals. Fodder had to be harvested locally because it was too cumbersome to transport. Bread, on the other hand, had to be supplied from magazines and army ovens. It was just not possible to find large quantities of bread for use during a campaign and on the move. It had to be manufactured beforehand and transported from the rear.¹⁰ These arguments, however, have only concerned wars in Central Europe. In Northern Europe the importance of magazines was more prominent than in Central Europe.

During the eighteenth century Sweden suffered from a continuous shortage of grain, which was the realm’s most important import. Unlike the part of the realm that is now modern Sweden, the Finnish part had a small surplus of grain during good harvest years, but if the crops failed most people were forced to resort to eating famine bread.¹¹ Given this situation, it is not surprising that large armies had trouble finding sufficient food in Finland. When Russia occupied Finland in 1713–1721, most of the provisions for the occupation army had to be brought in from Russia.¹² Sweden also encountered serious supply problems when transporting thousands of soldiers to Finland in preparation for war against Russia at the beginning of the 1740s.¹³ Even in the Finnish War of 1808–1809 supply problems were still evident. Scarce local resources made a supply system based on magazines necessary.¹⁴

Magazines had long traditions in Sweden. The first magazines in Sweden were established in castles and towns during the Middle Ages. In the seventeenth century they had become a common means of supporting garrisons, although during wartime pillaging and contributions were still widely used to support armies.¹⁵ The importance of magazines grew during the next century. When Swedish statesmen debated military policy in the eighteenth century, plans for sufficiently large grain stores were brought up time and again in these discussions.¹⁶ Councillor of the Realm and General Axel Löwen was a particular advocate of a strong magazine

system. In his detailed defence plan of 1738, he argued that there was a need to establish more magazines, mills and bakeries in Finland as well as building supply wagons specifically for the use of the army. He also pointed out that after a war had begun it would be too late to start laying in stores. People would flee into the forests and no proclamations could force them to supply the armies.¹⁷ Given that Löwen's ideas were not implemented before the disastrous Russo-Swedish war of 1741–1743, he could state after the war that he had been right to demand reforms in the supply organization.¹⁸

At the same Diet of 1746–1747 in which Löwen had criticized earlier policy, the Estates decided to build the fortress of Sveaborg. This large-scale construction work, begun in 1748, clearly reveals how important it was to have an efficient supply organization in a country with a severe climate and sparse population.

The Number of Soldiers and the Demand for Provisions

The construction work of Sveaborg was preceded by a serious risk of war with Russia. War was considered to be so imminent that all the regiments in Finland were mobilized in July 1747. The army included nominally 6,342 infantrymen and 2,238 dragoons, or 8,580 men in total. These soldiers all belonged to the tenure regiments. Four hundred and eighty artillerymen were the only enlisted troops in Finland at that time.¹⁹ In the tenure system (*indelningsverket*) peasants maintained infantry and cavalry soldiers for the Crown instead of a system of conscription. A group of peasants provided a tenure soldier with a croft which included a small field, a cabbage patch and a meadow. In their fields soldiers themselves could grow some of the food they needed.²⁰ From the perspective of supply, this meant that the Crown had a standing army at its disposal without the need to supply it unless there was a war or a mobilization. However, when the army was mobilized, the burden of supplying the army passed to the Crown.

The risk of war began to decline in the autumn of 1747. Although most of the soldiers of the Finnish tenure regiments were ordered to return to their crofts in September, some of the soldiers stayed and began preparing for the following year's construction work.²¹ Many of the soldiers came back next spring, but the workforce in the area of Helsinki-Sveaborg only rose to around 2,400 men in 1748 and 1749, because a lot of soldiers were needed for guard duty. Many were also sick and granted leave. In addition, many soldiers were needed in Degerby (later Lovisa), where another fortress, Svartholm, was being built farther to the east by the coast of the Gulf of Finland.²² The workforce

in Helsinki was at its peak in 1750, when all the infantry and cavalry regiments were ordered in full strength to take part in the construction work. It has been estimated that there were over 6,000 soldiers employed that year, probably somewhat exaggerated.²³

It was not self-evident that soldiers would get food from the Crown as payment for their work instead of being paid in cash, but in the prevailing conditions it was vital. Food prices would have been too high for the soldiers to buy what they needed, and besides this there was practically only grain to be had. In 1748 there was only one baker in Helsinki and the Town Council did not want to allow more bakers to work in the town because the construction work was considered to be only temporary. One baker was enough for the town's regular population of approximately 1,500 people. In addition, the only grocer in Helsinki gave up his work in November 1747, just before the construction work began, because he could not get enough food to sell. In such conditions it was impossible for the burghers in Helsinki to secure enough bread for the soldiers. If the soldiers had bought grain, they would have needed to grind it and bake it into bread themselves. There were only a few places where this was possible and it would have hampered and delayed the construction work. Because of this, Governor General von Rosen decided it best to pay part of the soldiers' salary in bread from the Crown's magazines.²⁴

Basically, this was the same situation as in Central Europe during and after the Thirty Years' War. When too many soldiers were concentrated in too small an area, there was not enough food to buy even if the men had money. In the seventeenth century this had compelled the soldiers to pillage. Later it was one of the reasons why more elaborate supply systems were established to secure a direct supply of food for the soldiers by state agents or private contractors.²⁵

The supplying of bread was based on the supply regulation of 1730 (*kongl. förplägnings ordning*). The daily ration of bread was 567 grams (1 1/3 marker) and its value was considered to be 1 1/3 öre in silver, which was deducted directly from a soldier's pay. On normal working days a soldier's salary was 6 öre, so this left 4 2/3 öre per soldier to be used at his own discretion.²⁶ In practice this meant that the soldiers, for example, in 1749 (up to July) got altogether 145,622 kg (17,132 lispund²⁷) of bread from the magazine in Helsinki.²⁸ When the workforce rose, the burden of supply rose accordingly. In the peak year of 1750 the Finnish regiments working in Helsinki-Sveaborg needed 325,108 kg (38,248 lispund) of bread.²⁹ This made around 573,600 rations and was enough to feed 4,780 men for four months. Producing such a large amount of bread required around 557,000 litres (3,800 barrels³⁰) of grain.³¹

When the Swedish regiments arrived to work with the construction of the fortress in 1751, more bread was needed than before. Soldiers of the Finnish tenure regiments returned to their crofts in the autumn, and the Crown did not have to take care of these troops until the next construction period (from spring to autumn). Soldiers of the Swedish tenure regiments, on the other hand, whose crofts were in Sweden, spent the winter in Finland. This meant that the Crown had to arrange for the provisioning of these soldiers during the winter months.³² Finnish and Swedish regiments were given 370,863 kg (43,631 lispund) of bread from the main magazine in Helsinki in 1751.³³ In addition, during the winter Swedish regiments got provisions from the subsidiary magazines.³⁴

Initially, the intent was to provide the soldiers with only their basic daily ration of bread. The soldiers were then expected to buy more foodstuffs themselves. This did not work as planned. Especially in 1748, the first year of construction, there was a continuous shortage of foodstuffs in Helsinki and prices were high. Finally, the Governor General had to accept that the burghers simply could not provide the soldiers with food because there was not enough food available for them to sell. To secure the livelihood of the soldiers, the Crown had to provide them with other foodstuffs from the magazine in addition to bread.³⁵ This practice continued in the years that followed. In 1750 the magazine of Helsinki provided the regiments with peas, flour, hulled barley (*gryn*), meat and butter.³⁶ It should be noted that the soldiers did not get any beer and only a small amount of spirits from the Crown magazine, although beer in particular was a significant part of the diet of early modern armies.³⁷ In this article I mainly concentrate on bread, because it was the most important item of these soldiers' provisions.

Given that the Crown provided tons of bread for the soldiers, one can safely conclude that careful preparations were needed before each construction period. When the work began, most of the bread was already supposed to be in the magazine. In the following sections I will concentrate on the methods used to achieve this. First, however, the preconditions of supply of the army in southern Finland need to be considered.

Supplying an Army in Southern Finland

Finland, situated as it was in the northernmost part of Europe did not have a climate favourable for agriculture. It was part of the boreal climatic zone, which was the northernmost area where agriculture was possible. Even in this zone only the southern and middle parts of the country were suitable for large-scale agriculture.

The climate was still somewhat colder than on an average up to the year 1760 in the wake of the so-called Little Ice Age.³⁸

The construction site of Sveaborg was in the province of Uusimaa and Häme (Nylands och Tavastehus län). The province stretched along most of the coast of the Gulf of Finland and reached back inland to the town of Hämeenlinna (Tavastehus). Although it was one of the more populous areas of the country, it still had only 110,141 inhabitants in 1754, which constituted about 5 % of the total population of the Swedish realm.³⁹ Towns were small and the population living in them numbered only a few thousands.⁴⁰

The main cereals in cultivation were rye and barley. In the middle of the eighteenth century, the slash and burn technique was still widely used even in the south, and it has been estimated that 50 % of the rye crop in the region was obtained in this way. By using the slash and burn technique, crop yields were much higher than those produced in normal field cultivation, but the downside was that it required a lot of forests to be burned and a sparse population.⁴¹ There are no comprehensive figures for crop yields in southern Finland in the eighteenth century, but in the 1830s rye crop yields were 1:6.2 (seed–yield ratio) in Uusimaa (*Nyland*) and 1:5.89 in Häme (Tavastland). Taking into account the relatively low density of sowing found in field cultivation at the time, it can be concluded that rye harvests in Uusimaa (14.28 hectolitre/hectare) and Häme (13.78 hectolitre/hectare) were mediocre in comparison with Finland as a whole. Crop yields for barley were 1:4.93 in Uusimaa and 1:4.38 in Häme.⁴² Jan Lindegren has established that it was risky and difficult to wage large-scale war in an area with a crop yield below 1:4.⁴³ Even though yields were probably somewhat lower in the eighteenth century than in the beginning of the nineteenth century, it can be assumed that the province of Uusimaa and Häme was, at first sight, an area that could sustain an army.

However, this only holds true when there were good harvests. As the governor of the province Gyllenborg informed the Diet of 1746–1747, harvests often failed in Uusimaa because of cold, wet weather and hail showers.⁴⁴ At the beginning of the construction work there were bad harvests in 1746 and 1747, which caused a shortage of grain and a rise in prices.⁴⁵ In addition, though there was a surplus of grain in the province as a whole, Helsinki itself was not a centre of the grain trade. In fact, in 1748 Gyllenborg stated to von Rosen that generally the town acquired an amount of grain that was only just above the level required by its own inhabitants. The Crown could not buy enough grain from there.⁴⁶

Considering these prevailing conditions it can be determined that the area around Helsinki was not in the late 1740s or early 1750s sufficient to feed the

whole workforce on its own. The Crown also had to bring grain and bread in from elsewhere for the construction workforce.

Procuring Grain

The Crown had two ways at its disposal to procure grain. The first was to collect some of the taxes in kind instead of in cash. Although it was advantageous for the Crown to avoid intermediaries such as merchants the amount of grain collected in this way was modest. Tax collected in grain from Finland amounted altogether to only 804,687 litres (5,489 barrels). Most of the grain was from Ostrobothnia, which, given its remoteness, made the exploitation of this source of grain less beneficial than one might have wished because of the difficulties involved in transporting it to Helsinki.⁴⁷ The grain collected in lieu of cash was therefore not sufficient to supply the construction workers of Sveaborg. At best it could be used to supplement other grain.

The second way for the Crown to procure grain was to buy it either directly from peasants or from merchants. The latter approach was more common. The purchasing of grain began even before the construction work started because of the risk of war in 1747. The Council of the Realm decided to order acting Governor General Stiernstedt to buy 2.2 million litres (15,000 barrels) of grain from the towns of southern Finland.⁴⁸ Regardless of the bad harvest, the stated goal was almost achieved in June 1747. Nearly all the grain came from Porvoo (Borgå), Degerby and Turku (Åbo). The merchants of Helsinki could sell only 175,920 litres (1,200 barrels) of grain.⁴⁹ Buying this grain would not have been possible without the strict regulation of trade in Finland. The Crown ordered a ban on the export of grain, which forced merchants to sell their grain to the Crown.⁵⁰ Normal trade was possible only after the Crown had obtained what it needed. This strict control of trade was similar to that used in wartime.⁵¹

The following year the Council tried to procure enough grain by ordering merchants to offer their goods to the Crown first. Only after the Crown had bought what it wanted could merchants freely sell their goods.⁵² However, because the prices demanded by the merchants were too high, Governor General von Rosen issued another ban on exports.⁵³ The ban on exports was also needed the next year (1749) to force the merchants to sell their goods to the Crown at prices deemed acceptable by the crown.⁵⁴

The export bans made it possible for the Crown to buy 1.14 million litres (7,794 barrels) of grain and flour in 1748 and 1.67 million litres (11,375 bar-

rels) in 1749. Some grain was also obtained through taxes. Together this was enough to support the construction work during these years.⁵⁵ Up until 1749 grain was mostly obtained from various areas and towns in Finland. Because Finland produced more grain than it needed, it was possible, through coercion if necessary, to harness this surplus to the service of the Crown. Thereafter however, in 1750 and 1751, grain and other foodstuffs for the construction workers were mostly transported from Sweden. The arrival of Swedish regiments and the increased burden of supplying these extra troops was the main but not the only reason for this. Grain did not play as great a role as before. Instead, the ships arriving from Sweden brought mostly flour and bread.⁵⁶

Grinding and Baking

As Lynn and Perjes have pointed out, grain left unprocessed was as such of little use to the soldiers. It had to be ground into flour and baked into bread before it could be used by an army.⁵⁷ The Crown did not, at first, bake bread itself. Grain was distributed from the magazine to burghers and peasants. They had to grind it and bake it into bread, which they were then supposed to deliver back to the magazine.⁵⁸ This was an old practice that had been used in Sweden even before the Great Northern War.⁵⁹ This type of baking was not, however, the most efficient way of getting bread. Baking was not optional; it was a duty towards the Crown. The burghers of Helsinki were clearly unwilling to carry out this imposed task.⁶⁰ The opposition of the burghers was undoubtedly the reason why the Crown began to repair its old bakeries and build new ones. There were two crown bakeries in Helsinki. One of them was repaired and the other rebuilt, so that by the end of the year 1747 both were in operation.⁶¹

These crown bakeries needed professional bakers who knew how to make dried rye bread called *succariebröd*. The bread had to be dry enough and cut into the small-sized cubes. Dried bread was preferred because it could be preserved better than other kinds of bread. Stiernstedt also claimed that, according to the soldiers, it tasted better. Because there were no available bakers to be had in Finland, the Council had to send a couple of journeyman bakers from Stockholm to Helsinki.⁶² Baking was supervised by journeyman bakers, but the actual work was done by the soldiers.⁶³

The above mentioned features of grinding and baking occurred because of the risk of war in 1747, right before the construction work of Sveaborg began. When the decision was made to supply the soldiers with bread, it meant that the demand

for bread would be high as long as the construction work lasted. The crown bakeries in Helsinki could not produce enough bread for all the soldiers, which was the reason why grain was still distributed to the peasants for grinding and baking.⁶⁴ When von Rosen reported to the Diet of 1751–1752 about the contents of the magazines, he informed them that the peasants had 231,787 kg (27,269 lispund) of bread that was to be delivered to the Crown.⁶⁵ Compared to the mobilization of 1747, the difference was that the baking was now mostly done in the countryside instead of in the towns.

Decentralizing the grinding and baking of this bread was not without its problems. It was difficult for the peasants to be able to fulfil their grinding and baking responsibilities on time. A Crown official of Porvoo district told the governor of the province in February 1748 that there were 293,200 litres (2,000 barrels) of grain waiting to be baked, which was a nearly impossible task for the local peasants because they had neither the required draft animals nor the people to manage the transportation of the grain to the mills, nor indeed for the grinding and baking itself. Each peasant was required to take two barrels (293 litres) of grain to the mills to be ground and baked.⁶⁶

The Crown tried to keep the bakeries continually in operation, but the limited amount of firewood available hindered this. In 1748 the bakeries ran completely out of firewood because of problems with acquisition. In the following year, sufficient firewood was acquired from some woods owned by the Crown, but because of transportation issues it was still hard to get it to the bakeries.⁶⁷

Similarly with baking, the Crown had to develop its own production to make sure that the grinding of grain would keep pace with demand. Governor General von Rosen told the Governor of the Province of Uusimaa and Häme to find out if the Crown could use one of the two watermills in Gammelstad to grind its rye and barley⁶⁸ (see the map on the page 77). The response was affirmative and the Crown made an agreement with the owners of one of the mills.⁶⁹ The Crown did not have its own mill until the so-called ‘Thunberg’s windmill’ was built in Sveaborg in 1749. The windmill was primarily meant to saw planks, but it could also grind grain.⁷⁰

By combining the efforts of the burghers and peasants while at the same time developing its own mills and bakeries, the Crown was able to produce enough bread for the first construction years. With the arrival of the Swedish regiments, large amounts of flour, dried bread and hulled barley were transported from Sweden. For example in 1751 altogether 244,817 kg (28,802 lispund) of flour, 771,350 kg (90,747 lispund) of dried bread and 540,954 litres (3,690 barrels) of hulled barley was shipped from the magazines of Stockholm, Gothenburg and Norrköping.⁷¹

Magazines

There were only a few real magazine buildings in southern Finland in 1747. In Helsinki grain and foodstuffs were stored in a simple wooden building.⁷² Apparently this building was not regarded very highly, because when Colonel Hans Henrik von Liewen reported to the Council in September, he stated that there was not a single storehouse in Helsinki. Stores were distributed in thirty different locations, which caused problems with guard duty.⁷³

Lack of storage space in Helsinki became increasingly evident, when construction work began in 1748, and tons of grain, flour and bread had to be gathered on the site.⁷⁴ Moreover the existing rooms were in bad condition. The old storehouse, which was situated just outside town in a place called Tullhällen (the northern part of Skatudden, Katajanokka), was utterly rotten. It was therefore necessary to build a new storehouse.⁷⁵ In the course of the construction work additional storehouses were also built on Skatudden (see the map on the page 77). By the 1750s there were already four storehouses: three in Tullhällen and the biggest one on the tiny adjoining island of Lökholm. This island is also referred to as 'Magazine Island' (Magasineholmen) on a 1770s map of Helsingfors.⁷⁶ In addition to Skatudden, there was storage space inside the fortress of Sveaborg. Because the fortress did not have enough appropriate buildings to store food, supplies had to be stored in many temporary places.⁷⁷

These different storehouses as a whole constituted the magazine of Helsinki, one of the main magazines in Finland. The amount of grain and foodstuffs grew considerably during the construction work, which can be seen in Table I. As the table shows, the amount of dry bread, salted meat and butter had multiplied many times over.

When the Swedish regiments arrived to help with the construction work of the fortress in 1751, the main magazine could no longer support the troops satisfactorily. Because the regiments were scattered across the Finnish countryside over winter, transporting food from the main magazine would have been burdensome. To resolve these difficulties von Rosen established three subsidiary magazines, which were situated in the parishes of Espoo (Esbo) and Sipoo (Sibbo) and in the town of Porvoo (Borgå). These subsidiary magazines were replenished from the main magazines by sea and the supplies were only then transported by land. This arrangement made it possible to avoid difficult long distance land transport.⁷⁸

When the stores of food and number of magazines increased, it also meant that the amount of work associated with them grew. von Rosen complained to the

Table 1. Rye, barley, flour, hulled barley, meat and butter in the storage magazine of Helsinki in January 1748 and October 1751.

Grain and foodstuffs	1748	1751
Rye (barrels)	1,176	3,360
Barley (barrels)	436	1,192
Hulled barley (barrels)	2	2,622
Rye flour (kg)	1649	0
Dry bread (kg)	46,988	916,708
Dried meat (kg)	459	1,360
Salted meat (kg)	145	231,429
Butter (kg)	740	27,064

Sources: year 1748: G IV b 2 1747 (p. 445), Finska generalkrigskommissariatet: Diverse, Krigskollegium: Intendentsdepartementet, Krigsarkivet, Stockholm; year 1751: Generalguvernörens i Finland riksdagsrelation, Defensionsdeputationen, Riksdagen 1751–1752, Frihetstidens utskottshandlingar, Riksarkivet, Stockholm.

Council in 1749 that Provision Master (*proviantmästare*) Mathias Weckström did not have time to attend to all his duties because the job of provisioning the workers had become increasingly laborious. At that time Weckström had only one servant to help him manage the affairs of the magazine of Helsinki. To ease his work von Rosen suggested to the Council that an additional scribe be appointed to help him. Although this was initially thought too expensive considering the state of the Crown's finances, it was later approved. During the Diet of 1751–1752 von Rosen suggested that Weckström should have another scribe to help him because there were magazines in three different places and because, with the Swedish regiments, he had to supply soldiers of 15 different regiments altogether. In addition to the main magazine's personnel there was one scribe in each of the three subsidiary magazines.⁷⁹ Supervising the magazines had also become burdensome. Referring to his other tasks, von Rosen passed the administration of the Finnish magazines over to Colonel Qveckfeldt in July 1751 and later to Lieutenant Colonel Peter von Törne.⁸⁰

Transportation

Logistical challenges were a constant problem in the provisioning of the soldiers. This has already been demonstrated in the previous sections in connection with

baking and magazines. Peasants were responsible for land transportation. Because the peasants were also required to transport a lot of building materials to the construction sites, carrying grain, flour and bread from one place to another burdened the peasants considerably. To ease their burdens von Rosen tried to avoid unnecessary transports. Establishing side magazines was one of the measures used to achieve this. In addition, instead of delivering grain in lieu of taxes and then taking it back home to grind it into flour and bake it into bread, von Rosen ordered them to bake it first and then deliver the bread to the magazine.⁸¹

The main problem with the transporting of goods was that land transport was generally inefficient except during the winter months when goods could be transported on sleighs. Governor Gyllenborg estimated that one horse could carry 3 barrels of rye and 3 ½–4 barrels of barley.⁸² Communications between the coastal area and inland were poor. Helsinki, in particular had some notable disadvantages. The nearby river Vantaa could not be used to transport goods because there were too many rapids. In addition, the road inland towards Hämeenlinna was not in a good condition. In 1729 king Fredrik I even complained to the Governor of Uusimaa and Häme that it was completely run down and unfit for travel.⁸³

Because of the poor state of land transportation, goods were transported by sea. Large cargos could be relatively easily transported in ships. For example, in June 1749, 65,970 litres (450 barrels) of rye was brought from Porvoo to Helsinki by one ship.⁸⁴ If this had been transported by land, it would have required 150 cartloads, using Gyllenborg's estimate. Sea transportation was not only used for long distances. Using ships was preferable even over short distances. When the Crown wished to bring grain from Helsinki to a nearby mill in Gammelstad, boats were used.⁸⁵ The disadvantage of sea transportation in northern Europe was that the sea froze from autumn to spring. It was also dangerous to transport anything in late autumn because of storms. In practice this meant that all large-scale transportation had to be done during the summer months.

During wartime managing the transports was also key to a successful supply operation, and failure in transporting supplies had dire consequences for any war's outcome.⁸⁶ The transportation of provisions to Sveaborg during its construction, however, differed from wartime in some notable respects. The soldiers were generally in one place for a long time instead of moving from one place to another. Being stationary and in one's own country it was not possible to 'live off the country', but in peaceful conditions it was not even required. There was enough time to prepare for the required transports in advance before each construction period.

Conclusions

The construction work of Sveaborg demonstrates that even in peacetime significant supply operations were conducted and needed. Large amounts of grain had to be gathered for milling and for baking. To make this possible burghers and peasants alike were obliged to serve the Crown. As long as there were only a few thousand soldiers involved in the work, enough bread could be obtained from Finland alone, but when the workforce grew, supplies were also brought in from the rest of the realm. Careful preparations and coercion coupled with advances in milling and baking made the feeding of thousands of soldiers possible. Sea transportation was utilized whenever possible. In general, all these practices were comparable with those used in wartime.

The building of Sveaborg led to an extraordinary phenomenon in terms of peacetime supply organization. The developments, however, were not solely confined to the construction period. Some of the features of this supply organization only lasted until the end of the construction work. The stores, for example, diminished significantly in later years. Nevertheless, the construction work had a long-lasting legacy. Mathias Weckström continued as Provision Master into the 1770s.⁸⁷ Gammelstad remained the most important place for grinding grain for the fortress. In 1756 a new, more efficient watermill was built to replace one of the old ones.⁸⁸ Thunberg's mill remained in use for the rest of the century.⁸⁹ The magazines of Tullhällén and Lökhölm were still used in the 1770s.⁹⁰ During the construction period of Sveaborg, the foundations were laid for the development of Helsinki-Sveaborg into the main depot in Finland.

The same supply practices that were employed during the construction work were used until the Finnish war of 1808–1809. It is clear therefore that from the point of view of the supplying of armies, there was no clear-cut difference between wartime and peacetime. When a war began, the supply organisation did not spring up from nothing. Magazines, mills and bakeries already existed. For this reason, to understand the workings of the magazine system as a whole, it is important to study events prior to and after the formal state of war.

In Central Europe preparedness for war may not have been as much of an issue as it was in the north. If the food surplus was more abundant, it was not so vital to gather sufficient stores in advance. Hopefully, further studies will reveal how important peacetime was for the development of the magazine system in Central Europe and other parts of Europe. By doing so, the debate between van Creveld and Lynn might come to be seen in a new light. If military magazines were also important in Central Europe in peacetime, the level of preparedness in the event

of war should be emphasized more than van Creveld and Lynn have done. The level of preparedness could have decisive consequences for the outcome of a war. It is highly likely that a well prepared state with magazines full of food had a better chance of winning a war than a state which only began to make preparations when the war had already begun. Thus, the supplying of the military in the event of war should be studied accordingly, taking the long-term level of preparedness of each state involved in a war into account.

In addition to being prepared for war, establishing a functional supply organisation for an army could also have other consequences for a state and its people. Supplying an army bound the people and the state together. The state needed the services of peasants and merchants in order to acquire enough food for its army. Conversely, peasants and merchants could take advantage of the state's grain stores during times of bad harvests and famine. By examining the supplying of the military construction workers of Sveaborg, it is clear that the importance of the magazine system was not restricted to times of war. It was a constant concern for eighteenth-century Swedish statesmen.

Notes

1. On wartime logistics in Central Europe, see G. Perjes, 'Army Provisioning, Logistics and Strategy in the Second Half of the 17th Century', *Acta Historica Academiae Scientiarum Hungaricae*, toms XVI (1970), pp. 1–52; Martin van Creveld, *Supplying War: Logistics from Wallenstein to Patton* (Cambridge: Cambridge University Press, 1977); John A. Lynn: 'Food, Funds and Fortresses: Resource Mobilization and Positional Warfare in the Campaigns of Louis XVI', in *Feeding Mars: Logistics in Western Warfare from the Middle Ages to the Present*, ed. by John A. Lynn (Boulder CO: Westview Press, 1993a), pp. 137–159; Christer Kuvaja, 'Mat och foder för krigförande arméer: Försörjningen i krigsområdet från trettioåriga kriget till Napoleonkrigen', in *Allt på bräde: Stat, ekonomi och bondeoffer: En vänbok till Jan Lindegren*, ed. by Peter Ericsson et al. (Uppsala: Uppsala universitet, 2013), pp. 45–55. For Sweden and Finland, see O. Korkiakangas, *Kaarle XII:n kenttäarmeijan huolto sotaretkillä vuosina 1700–1701 mannereurooppalaisten huoltojärjestelmien näkökulmasta* (Helsinki: Suomen Historiallinen Seura, 1974); Christer Kuvaja, *Försörjningen av en ockupationsarmé: Den ryska arméns underhållssystem i Finland 1713–1721* (Åbo: Åbo Akademi förlag, 1999); Jan Lindegren, 'Bröd som vapen: Karl XII och succariebrödet', in *Saga och sed: Kungl. Gustav Adolfs akademis årsbok 2000*, ed. by Lennart Elmevik (Uppsala: Kungl. Gustav Adolfs akademien, 2000), pp. 41–60; Martin Hårdstedt, *Om krigets förutsättningar: Den militära underhållsproblematisken och det civila sambället i norra Sverige och Finland under Finska kriget 1808–1809* (Umeå: Umeå Universitet, 2002).
2. Van Creveld 1977, p. 5.

3. Martin Hårdstedt, 'Att föda en garnison', in *Mat och krig: Armémuseum årsbok 2012*, ed. by Martin Skoog (Stockholm: Armémuseum, 2012), pp. 141–160 (p. 145).
4. Martin Hårdstedt, 'Krigets och fredens relative tillstånd: Ålänningarna och krigets och fredens villkor 1808–1856' *Historisk tidskrift*, 3 (2008), pp. 389–410 (pp. 390–392, 409–410). Concerning the change from war to peace, the so-called 'fredskris', also see Petri Karonen, 'Coping with Peace after a Debacle: The Crisis of the Transition to Peace in Sweden after the Great Northern War (1700–1721)', *Scandinavian Journal of History*, 3 (2008), pp. 203–225. DOI: <http://dx.doi.org/10.1080/03468750802038785>.
5. Jeremy Black, *A Military Revolution? Military Change and European Society 1550–1800* (Basingstoke: Macmillan, 1991), pp. 82–85.
6. Sweden means here the geographical area of modern Sweden. For practical reasons, the distinction between the Swedish part of the realm and the Finnish part of the realm was already in common use in the eighteenth century.
7. The importance of bread has been emphasized, for example, by John A. Lynn, 'The History of Logistics and Supplying War', in *Feeding Mars: Logistics in Western Warfare from the Middle Ages to the Present*, ed. by John A. Lynn (Boulder CO: Westview Press, 1993b), pp. 9–27 (p. 20); and Lindegren 2000, p. 50.
8. Lynn 1993b, p. 10.
9. Van Creveld 1977, pp. 36–39.
10. Lynn 1993b, pp. 19–21.
11. Karl Åmark, *Spannmålsbandel och spannmålspolitik i Sverige 1719–1830* (Stockholm, 1915), pp. 5, 8–9, 17–20, 25.
12. Kuvaja 1999, pp. 276–277.
13. Niklas Tengberg, *Bidrag till historien om Sveriges krig med Ryssland åren 1741–1743 I–II* (Lund, 1857–1860). Problems with supplies are continually mentioned in this old but thorough study concerning the Russo-Swedish war of 1741–1743.
14. Hårdstedt 2002, pp. 337–340.
15. Korkiakangas 1974, p. 59, 147.
16. Einar W. Juvelius, *Suomen puolustuskyky ison- ja pikkuvihan välisenä aikana* (Kokkola: Suomen Historiallinen Seura, 1919), p. 108, 134.
17. Löwen's defence plan, 3 April 1738, published in Einar W. Juva, *Documenta historica VI: Verteidigungspläne Finnlands 1721–1808* (Helsinki, 1939), pp. 194–337.
18. The Council of the Realm to the Defence Committee, December 1746, published in Einar W. Juva, *Documenta historica VII: Verteidigungspläne Finnlands 1721–1808* (Helsinki, 1944), p. 40.
19. Governor General von Rosen to the King, 4 July 1747 and 19 July 1747, *Skrivelser från generalguvernörer och guvernörer: Finland vol. 3, Kollegiers m. fl. skrivelser till Kungl. Maj:t*, The National Archives, Stockholm. Some of the source material concerning the fortress of Sveaborg in the National Archives in Sweden has been copied onto microfilm in the National Archives of Finland in Helsinki. In this study I have used the

microfilm form for the following sources: Letters of Governor General to the King, Skrivelser från generalguvernörer och guvernörer: Finland, Kollegiers m. fl. skrivelser till Kungl. Maj:t, The National Archives, Stockholm; Letters of Governor of Uusimaa and Häme to the King, Kollegiers m. fl. skrivelser till Kungl. Maj:t The National Archives, Stockholm; Governor General's report to the Diet, Defensionsdeputationen, Riksdagen 1751–1752, Frihetstidens utskottshandlingar, The National Archives, Stockholm; Population statistics of Uusimaa and Häme, Folkmängdstabeller, vol. 1, Tabellverket, The National Archives, Stockholm; Governor's of Uusimaa and Häme report to the Diet, Kammar-, ekonomi- och kommersedputationen, Riksdagen 1746–1747, Frihetstidens utskottshandlingar The National Archives, Stockholm; Utländska kartor: Stads och fästningsplaner. Finland. Helsingfors, The Military Archives, Stockholm.

20. J. E. O. Screen, *The Army in Finland: During the Last Decades of Swedish Rule (1770–1809)* (Helsinki: Finnish Literary Society, 2007), pp. 29–30, 44–45, 49–50.

21. von Rosen to the King, 13 September 1747 (vol. 3); Protocols of the Council of the Realm (Riksrådsprotokoll), 12. October 1747, A I aa:32, Krigsexpeditionen, The National Archives, Stockholm.

22. Oscar Nikula, *Augustin Ehrensvärd 1710–1772* (Helsinki: Ehrensvärd-seura ry/Samfundet Ehrensvärd rf, 2011), pp. 115, 125, 241–242. Originally printed in Swedish in 1960.

23. von Rosen to the King, 3 April 1750 (vol. 8); Ernst Ericsson, *Kungl. fortifikationens historia IV:3. Det fasta försvaret i Finland 1741–1772* (Stockholm: Nordstedt, 1939), p. 173. This estimate is probably too high because the provision calculations converted to daily rations indicates far lower figures given the number of soldiers (see footnote 29 and the text).

24. Protocols of Helsinki Town Council, 26 October 1747, 2 November 1747, and 5 September 1748, Ca:50 and 52, Town Council Archives, Helsinki City Archives; von Rosen to the King, 21 January 1748 (vol. 4). For the population of Helsinki, see Erik Hornborg, *Helsingfors stads historia II* (Helsingfors, 1950), p. 443.

25. Lynn 1993b, p. 17.

26. von Rosen to the King, 21 January 1748 and 30 January 1748 (vol. 4); Protocols of the Council of the Realm, 5 July 1748 (A I aa:34).

27. 1 lispund = 8.5 kg.

28. von Rosen to the King, 3 July 1749 (vol. 7).

29. Provision calculation for Helsinki magazine 1750 (Profwiant räkning för Helsingfors förråds magazin), vol. 43, Strödda militieräkenskaper efter 1630, The National Archives, Stockholm.

30. 1 barrel of grain = 146.6 litres.

31. One barrel of grain would yield about 10–11 lispund (85–94 kg) of bread. von Rosen to Governor Gyllenborg, 8 August 1747, Ea:35, Provincial Office Archives (Nylands och Tavastehus landskansliis arkiv), The Provincial Archives of Hämeenlinna.

32. Governor General's report to the Diet (Generalguvernörens i Finland riksdagsrelation), Defensionsdeputationen, Riksdagen 1751–1752, Frihetstidens utskottshandlingar, The National Archives, Stockholm.
33. Provision calculation for Helsinki magazine 1751, vol. 43, Strödda militieräkenskaper efter 1630, The National Archives, Stockholm. The Finnish tenure infantry regiments were the Åbo Regiment, the Biörneborg Regiment, the Tavastehus Regiment, the Savolax regiment, the Nyland regiment, and the Ostrobothnia Regiment. The Swedish regiments were the Västmanland Regiment, the Södermanland Regiment, the Kalmar Regiment, the Kronoberg Regiment, the Östgöta Regiment, and the Närke and Värmland Regiment. Finnish and Swedish regiments were also separated in the provision calculation. Not all the soldiers of the regiments were commanded to work at the same time in Sveaborg, which explains why it is difficult to estimate the actual number of soldiers involved at any one time in the work.
34. Provisions calculation for Sipoo subsidiary magazine (Profwiant räkning för Sibbo bi magazin 1751), vol. 31, Helsingfors fästningsarkiv, The Military Archives, Stockholm.
35. von Rosen to the King 27 May 1748 and 16 August 1748 (vol. 4 and 5).
36. Provision calculation for Helsinki magazine 1750.
37. Jussi T. Lappalainen, *Elämä ja Suomen sotaväessä Kaarle X Kustaan aikana* (Jyväskylä: Jyväskylän yliopisto, 1975), p. 114.
38. Reijo Solantie, *Ilmasto ja sen määrämät luonnonolot Suomen asutuksen ja maatalouden historiassa* (Jyväskylä: Jyväskylän yliopisto, 2012), pp. 45–47, Diss. in history on boreal climate and agriculture, published in Jyväskylä University Digital Archive: <http://urn.fi/URN:ISBN:978-951-39-5009-5> (read 16 May 2015). For the Little Ice Age, see Brian Fagan, *The Little Ice Age: How Climate made History 1300–1850* (New York: Basic Books, 2000).
39. For the population statistics of Uusimaa and Häme in 1754 and Sweden in 1751, see Folkmängdstabeller, vol. 1, Tabellverket, The National Archives, Stockholm.
40. The population of Helsinki, Porvoo, Hämeenlinna and Tammisaari was in total 4,860 in 1754. Oiva Turpeinen, 'De finländska städernes folkmängd 1727–1810', *Historisk Tidsskrift för Finland*, 2 (1977), pp. 109–127 (p. 124).
41. Solantie 2012, p. 66, 155, 188.
42. Arvo M. Soinen, *Vanha maataloutemme: Maatalous ja maatalousväestö Suomessa perinnäisen maatalouden loppukaudella 1720-luvulta 1870-luvulle* (Helsinki: Suomen Historiallinen Seura, 1974), pp. 116–119. It is important to note that in the beginning of the nineteenth century the size of the slash and burn area was significantly lower than in the eighteenth century, which must have affected crop yields. See Solantie 2012, p. 155.
43. Lindegren 2000, p. 45.
44. Governor's of Uusimaa and Häme report to the Diet (Landshövdingarnas riksdagsberättelse: Nylands och Tavastehus), Kammar-, ekonomi- och kommersedeputationen, Riksdagen 1746–1747, Frihetstidens utskottshandlingar, The National Archives, Stockholm.

45. von Rosen to the King, 29 September 1747 (vol. 3); Governor Gyllenberg to the King, 24 September 1746 and 6 October 1747, *Skrivelser från landshövdingar: Nylands och Tavastehus län 1746–1747*, vol. 15, *Kollegiers m. fl. skrivelser till Kungl. Maj:t*, The National Archives, Stockholm.
46. Gyllenberg to von Rosen, 17 May 1748 (draft), Da:18, Provincial Office Archives (Nylands och Tavastehus landskanslis arkiv), The Provincial Archives of Hämeenlinna.
47. Protocols of the Defence Committee (Defensionsdeputationens protokoll), 8 December 1747, vol. R 2891, *Riksdagen 1746–1747, Frihetstidens utskottshandlingar*, The National Archives, Stockholm.
48. Governor Stiernstedt to Gyllenberg, 9 May 1747 (Ea:35).
49. Governor Ehrenmalm to Gyllenberg, 9 June 1747 (Ea:36).
50. The King to Stiernstedt, 21 April 1747, attached to letter from Stiernstedt to Gyllenberg, 9 May 1747 (Ea:35).
51. There were bans of exports for example in the Finnish War of 1808–1809. See Hårdstedt 2002, p. 254.
52. von Rosen to the King, 23 April 1748 (vol. 4).
53. von Rosen to Gyllenberg, 5 May 1748 (Ea:40).
54. von Rosen to vice Governor Carpelan, 8 April 1749 (Ea:45).
55. von Rosen to the King, 17 June 1748, 23 November 1748 and 3 July 1749 (vol. 4, 5 and 7).
56. von Rosen to the King, 8 May 1750 (vol. 8); Provision calculation for Helsinki magazine 1750; Provision calculation for Helsinki magazine 1751.
57. Perjes 1970, p. 7; Lynn 1993b, p. 20.
58. Protocols of Helsinki Town Council, for example 27 March 1747 (Ca:50); Stiernstedt to Gyllenberg, 13 April 1747, and von Rosen to Gyllenberg, 10 June 1747 (Ea:35).
59. Korkiakangas 1974, pp. 175–178, 180–181.
60. For example, Stiernstedt to Gyllenberg, 25 May 1747 (Ea:35).
61. von Rosen to Gyllenberg, 11 June 1747 and 27 November 1747 (Ea:35).
62. Stiernstedt to Gyllenberg, 30 March 1747, and von Rosen to Gyllenberg, 16 June 1747 (Ea:35); von Rosen to the King, 8 July 1747 (vol. 3).
63. von Rosen to Carpelan, 16 August 1748 (Ea:40).
64. von Rosen to Carpelan, 14 January 1749 (Ea:45).
65. Governor General's report to the Diet 1751.
66. Crown official (Crono befallningsman) Aspelin to Gyllenberg, 25 February 1748 and 4 March 1748 (Ea:42).
67. von Rosen to Gyllenberg, 5 April 1748 and to Carpelan, 16 January 1749 and 1 April 1749 (Ea:40 and Ea:45).
68. Gammelstad was the old, original site of the city of Helsinki at the mouth of the river Vantaa (Vanda å).

69. von Rosen to Carpelan, 5 August 1748 and 13 August 1748 (Ea:40); Helsingfors magistrats protokoll, 17 September 1748 (Ca:52).
70. Nikula 2011, p. 122.
71. Provision calculation for Helsinki magazine 1751.
72. von Rosen to Gyllenborg, 11 June 1747 (Ea:35).
73. Protocols of the Council of the Realm, 12 October 1747 (A I aa: 32).
74. von Rosen to the King, 10 August 1748 (vol. 5).
75. Carpelan to Helsinki Town Council, 16 August 1748, Ea:27, Town Council Archives, Helsinki City Archives.
76. Kartong IX, no. 55, 67 and 74, Utländska kartor: Stads och fästningsplaner. Finland. Helsingfors, The Military Archives, Stockholm. The 1770s map is not dated, but it has the same signature as map number 72 (kartong IX), which is dated 1776.
77. von Rosen to the King, 11 July 1751 (vol. 11).
78. von Rosen to the King, 23 May 1751 (vol. 11); Governor General's report to the Diet 1751.
79. von Rosen to the King, 30 May 1749 and 11 July 1751 (vol. 6 and 11); Governor General's report to the Diet 1751.
80. von Rosen to the King, 24 July 1751 and 29 January 1752 (vol. 11 and 13).
81. von Rosen to Carpelan, 14 January 1749 (Ea:45).
82. Gyllenborg to von Rosen, 17 May 1748 (draft) (Da:18).
83. Marko Nenonen, 'Vesiltä pyörille: Suuret maantiet 1550–1800', in *Maata, jäätä, kulki-joita: Tiet, liikenne ja yhteiskunta ennen vuotta 1860*, ed. by Tapani Mauranen (Helsinki: Tielaitos, 1999), pp. 167–273 (pp. 223–228).
84. von Rosen to Carpelan, 13 June 1749 (Ea:45).
85. von Rosen to Gyllenborg, 6 June 1750 (Ea:49 I).
86. This is evident in many studies. See, for example, Hårdstedt 2002, p. 139–146.
87. Accounts of the storage magazine of Helsingfors 1771 (pp. 263–264), vol. 8370, Uudenmaan ja Hämeen läänintilit, KA.
88. Juha-Matti Granqvist, 'Yksinpä vapaudenajalla sangen ruma juttu': *Kiista Helsingin Vanbankaupungin myllyistä 1755–1770*, unpublished master's thesis (Helsinki: Helsingin yliopisto, 2009), p. 36.
89. Olof af Hällström, *Sveaborg–Viapori–Suomenlinna: The Island Fortress off Helsinki: An Architectural History* (Rungstedt: Anders Nyborg, 1986), p. 41.
90. Kartong IX, no. 67 and 74, Utländska kartor: Stads och fästningsplaner. Finland. Helsingfors, The Military Archives, Stockholm.

Summary:

The Provisioning of the Military Construction Workers of Sveaborg 1747–1752: The Magazine Supply System in Peacetime

Studies of the military logistics in the early modern period have mainly focused on wartime up to this date. The aim of this article is to demonstrate that supply systems were important during both war and peace. Stores of grain and bread were needed to supply garrisons and prepare for sudden war. Food was also needed if an army was mobilized and used as a workforce in large-scale construction works.

This can be clearly seen in the construction work of Sveaborg's sea fortress in the middle of the eighteenth century. Thousands of soldiers were commanded to take part in it, which required careful planning to keep them supplied annually through the intensive construction periods from spring to autumn. As the soldiers could not buy enough food by themselves, the Crown had to give them bread for sustenance. This in turn required purchasing large quantities of grain, grinding the grain into flour and baking the flour into bread. To manage all this, the whole supply system had to evolve. New magazines, bakeries and mills were established and new personnel hired. Although the construction of Sveaborg was an extraordinary phenomenon, many of these changes had a long lasting legacy.

Keywords: grain magazines; military logistics; military society; military supply system; Sveaborg fortress.