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ARMS PRODUCTION AND EXPORTS IN THE DUTCH REPUBLIC  
1600-1650: AN URBAN PERSPECTIVE

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## 1. THE ARMS INDUSTRY

During the seventeenth century, the Dutch Republic boasted an impressive and varied arms industry.<sup>1</sup> Most weapons and military equipment were being produced locally, especially in Amsterdam and a number of other cities. While Amsterdam was the major center of production, noted for a variety of articles such as muskets, pistols, armour, guns and gunpowder, other cities had a narrower range of specialties. Utrecht manufactured armour and grenades, Delft and Dordrecht specialized in small arms, guns and gunpowder, and The Hague made bronze guns and small arms. Gouda was the single most important center for the manufacture of match. Other cities where small arms were produced were Rotterdam, Nijmegen, Maastricht and Groningen. Apart from guns, small arms, match and gunpowder, Dutch cities manufactured practically everything else needed for fighting wars: pikes, musket and cannon balls, swords, halberds, drums, spades, picks, wagons and gun carriages.

Arms manufacture was organized in various local craft-guilds. Hundreds of master-craftsmen and their assistants, such as locksmiths, gun founders, powder mixers,

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<sup>1</sup> In het kader van het college militaire geschiedenis, gegeven sinds 1989 samen met J.A. de Moor, (vakgroepen Geschiedenis en TCLA binnen de RU Leiden) is de afgelopen twee jaar (in samenwerking met J.P. Puype van het Leger- en Wapenmuseum in Delft) onderzoek gedaan naar de productie en uitvoer van wapens en strategische goederen in de zeventiende eeuw. In 1991-1992 is de wapenproductie onder de loep genomen, met onderzoek in het Algemeen Rijksarchief, het gemeente-archief Amsterdam, en het gemeente-archief Dordrecht. Aan dat college namen deel A.J. Bloemendaal, A.H. van Ginkel, M. de Jong, C.O. van der Mey, E.G. Memeo, S. van Moorselaar, A. van Wakeren, H. de Vries, N. Wassenaar en L. Wind. Het afgelopen jaar is de wapenexport onderzocht. Deelnemers aan dit college waren J. Adriaanse, G. Beks, mevr. M. de Jong, R. Kunst, T. de Kruyf, F. Meijer, R. Nauta, F. Plasmeijer, F. Scholten en L. Visser. Veel van de door deze laatste groep verzamelde gegevens zijn verwerkt in dit artikel.

swordmakers, earned their livelihoods in the arms industry. Each master craftsman in his turn providing work for a number of assistants and apprentices. Most raw materials needed to be imported. For instance, gunpowder production could not take place without imports of saltpeter from the Baltic and Asia, and of sulphur from Sicily and Elba.<sup>2</sup> A major part of arms production actually consisted of the assembly of imported parts: barrels and locks from Liege were combined with locally made rifle butts and brass rings and transformed into muskets.<sup>3</sup> Sword blades and pike heads were imported from Solingen in Germany, and made into swords and pikes. Armour parts (largely imported from Liege) were assembled into complete sets of armour.<sup>4</sup> Horses, the muscle of war, were bred in the Dutch republic, but also imported from abroad.

The Republic was, in addition, a suitable market for the recruitment of troops. Numerous foreign princes received special permission to recruit soldiers for their military operations. Of course, there was an extra advantage in raising troops in the Netherlands, because these could be completely equipped and armed with the products of the Dutch armaments industry. Once assembled and equipped, the troops could be immediately dispatched to the war theatre for which they were destined.

## 2. THE ARMS MARKET

The Dutch republic thus was a major market for all kinds of arms and military equipment.<sup>5</sup> The Dutch Army ('staatse leger'), with a global strength of about 40,000 during the first half of the seventeenth century, was the single most important customer for small arms, armour, swords and pikes. The Dutch East India Company (VOC), the West Indies Company (WIC), and the various admiralties also bought considerable quantities of small arms, iron and bronze cannon. Moreover, the army, navy and the trading companies annually consumed enormous quantities of ammunition, gunpowder and match, much of which was bought from Dutch manufacturers. However, the total demand for all kinds of military equipment far exceeded local production. Hence, finished products were purchased abroad, bringing about a considerable arms trade.

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<sup>2</sup> J.R. van der Neut, *Buskruit, Roermaker en Schutter*, (Deventer, 1981).

<sup>3</sup> J.B. Kist et al., *Musket, roer en pistolet. 17de-eeuws wapenhandwerk in de Lage Landen* (Den Haag 1974); see also C. Gaier, *Four Centuries of Liège Gunmaking* (Londen, 1976).

<sup>4</sup> The production of armour parts was concentrated in the city of Liege and its surroundings. Water-powered machines were utilized in the manufacturing process.

<sup>5</sup> Almost everything needed for warfare could be purchased in the Republic: muskets, furquets, bandoliers, pistols carbines, pikes, rapiers and swords, halberds and partisans, armour suits, cuirasses, corselets, helmets. Apart from small arms, heavy weapons and ammunition of all sorts could be bought as well: guns of various calibers, shot, match and powder.

From the end of the sixteenth century, the international arms trade began to concentrate in the Northern Netherlands, especially in Amsterdam. The Dutch Republic grew into one of the major international markets for weapons, military equipment and strategic goods.<sup>6</sup> Foreign buyers discovered that the Amsterdam arms market offered attractively priced goods that could be delivered at short notice. An additional advantage was that the merchandise could be handled and shipped speedily and efficiently, thanks to the position of Amsterdam as one of the world's most important trading cities. It was not unusual for military procurements to arrive at their destination within a month of being ordered. Denmark, Brandenburg, France, Sweden, Russia, Venice, England, Poland, Morocco, Portugal and numerous smaller countries placed substantial orders on the Amsterdam market. However, the States General tried to control the arms trade for both financial and national security reasons levying tariffs ('convoeien en licenten') and attempting to prevent arms from falling into the hands of the enemy.

As early as the 1560s, when the Dutch revolt against Spain began, individual merchants in the rebellious provinces were not loath to export weapons and ammunitions, even to the Spanish enemy. In those early years, in the absence of a 'national government' and an enforceable national policy on foreign trade, few questions were asked. Since about 1600, however, export controls became more efficient, making the delivery of arms to outright enemies more difficult. If the foreign buyer was pursuing a goal that suited the interest of the States General, the export of arms was considered to be beneficial to national foreign policy. Until 1648, whenever a customer needed the weapons to fight Spain, the deal was always allowed to go on, provided there were sufficient stockpiles of weapons in the country. For instance, in 1582 Don Antonio, leader of the Portuguese rebellion against Spain, received a substantial shipment of gunpowder (50,000 pounds) against prompt payment.<sup>7</sup> Such shipments of arms and ammunitions in the interest of the national cause and as an instrument of foreign policy, became increasingly frequent over the following decades.

Yet the arms trade was a profitable business. Though some leading merchants, such as Louis de Geer and the Trip family, controlled a sizeable portion of the market, there were many opportunities for smaller entrepreneurs. Sometimes even the big firms needed to avail themselves of the services of their smaller competitors. Only a handful of merchants specialized in the arms trade exclusively. Most merchants whose

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<sup>6</sup> P.W. Klein, *De Trippen in de 17de eeuw. Een studie over het ondernemingsgedrag op de Hollandse stapelmarkt*. (Rotterdam, 1956).

<sup>7</sup> Revolution of the States of Holland, 13 June 1582.

names crop up in the document with reference to the arms trade, were also dealing in other goods and commodities, though often related to the arms business. Such commodities might include iron, copper, tin, lead and saltpeter.

Many wars were fought in the period between 1550 and 1650. The immediate military threat to the Dutch Republic, however, had been warded off shortly after the turn of the century. In 1609, the Republic signed an armistice with Spain. Yet the following year saw the outbreak of a serious war over the succession in the duchies of Cleves, Julich, Berg and the county of Mark, stretching over both banks of the Rhine river just across the eastern border of the Dutch Republic. After four years of war, the area was divided between protestant Brandenburg - the Republic's ally - and a Roman Catholic prince. Elsewhere, wars broke out as well: in 1611 between Sweden and Denmark (the War of the Kalmar Union), and two years later the Ottoman Turks invaded Hungary, terrifying the inhabitants and the governments of Central and Western Europe. From 1616 to 1618, Venice fought a war with Austria, while in 1618 the 30-Years' War began in Bohemia. In 1640, the Portuguese and Catalans began an armed rebellion against the central government at Madrid, and England was divided by a long civil war, ending only in 1649. Most belligerents and rebels made intensive use of the Amsterdam arms market. Especially during the Twelve Years' Truce with Spain (1609-1621), the Dutch arms trade flourished.

### **3. THE ARMS TRADE**

The Amsterdam market was attractive for anyone who needed military equipment at short notice. It is likely that nowhere else could weapons be bought and delivered at such a short notice as in the Dutch Republic. As a matter of fact, this seems to have been the single most important attraction of this market. If for some reason an arms merchant could not deliver from commercially available supplies, weapons could often be procured from official Dutch army arsenals, provided there was no immediate need for them in the Republic. One can hardly think of a more eloquent example of the cooperation between private enterprise and the national government. In fact, the Amsterdam arms market used government stockpiles as a secondary export reserve.

Dutch weapons were not cheap: rebates or special rates were never given. However, sometimes the subsidies of the States-General for Dutch allies could be used to purchase weapons, which meant that the government directly subsidized the export of military equipment. At the same time, foreign demand helped to maintain the prices of weapons bought by the Dutch army at acceptable levels. Naturally, prices did fluctuate somewhat over the years, but on the whole they remained stable. Muskets could be bought for six guilders apiece, a suit of armour cost five guilders. Gunpowder

was quite expensive at five guilders per pound. Regular quality match was sold for six guilders per 100 pounds, the superior quality four-thread variety fetching nine guilders. The price of guns was based on weight, with prices ranging from ten to twenty guilders per pound for iron cannon, and eight times as much for bronze pieces. The most expensive item - a fully rigged and equipped warship - cost about 30,000 guilders.

It was already before 1600 that the Amsterdam arms market proved its value as the place to purchase everything needed for the equipment of entire units. In 1592, Sweden bought equipment for a 1500-man infantry regiment to be deployed in its war against Muscovy: 200 muskets, 800 harquebuses, 1000 helmets, 350 suits of armour, 1000 pikes, 500 rapiers and cutlasses and 30 drums.<sup>8</sup> Amsterdam merchants in 1621 supplied the full equipment for a regiment of the Protestant Union.<sup>9</sup> The following year, 1622, was a peak year for such package deals, with Sweden and Denmark buying weapons and equipment for 3000 and 7000 men, respectively. Count Christian of Brunswick bought everything to fit out a small army of 7000 men, to wit, 3000 muskets, 3000 suits of armour, 3000 pikes, 1000 suits of armour for cavalry, 1000 harquebuses with bandoliers, 10,000 pounds of gunpowder, 20,000 pounds of match and 10,000 pounds of musket balls at 20 per pound, totalling 200,000 balls, and also 1000 hand grenades. Five hundred additional shovels, axes and picks were included in the package that must have been worth well over 100,000 guilders. Interestingly, the sale of digging tools proves that the modern practices introduced by Prince Maurice into the Dutch army, were gaining acceptance abroad.<sup>10</sup> Other buyers of complete outfittings included England. In 1638, the English ambassador at The Hague ordered equipment for a force of 6000 men intended for the campaign then underway in Ireland. This deal perhaps totalled something in the order of 200,000 guilders.<sup>11</sup> The following year, orders were placed to equip 1500 soldiers serving in England proper.<sup>12</sup>

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<sup>8</sup> R.St.-Gen. 1 juli 1592, quoted by F.J.G. Ten Raa and F. De Bas, *Het Staatsche Leger 1568-1795*, vol. 1, p. 197.

<sup>9</sup> The shipment comprised 300 carbine-harquebuses, 400 carbines, 1000 muskets with furquets and bandoliers, 1000 suits of armour, 1000 pikes, 30 halberds, 16 drums and 1000 pounds each of lead, match and gunpowder, see R.St.-Gen., 3 march 1621.

<sup>10</sup> R.St.-Gen., 28 november 1622.

<sup>11</sup> Namely 4000 muskets with furquets and bandoliers, 4000 swords with belts, (for 4000 musketeers); 2000 complete saddles, 2000 swords with belts, 2000 suits of armour, 2000 carbines, and 2000 pairs of pistols with extras, (for 2000 heavy cavalry), and also 12 pieces of bronze guns and their carriages, four mortars, and 500 grenades. R.St.-Gen. 6 october 1638.

<sup>12</sup> To wit 1200 muskets, 300 pikes, 300 double breast plates, 300 harquebuses, (for 300 pikemen); six 6-pounder bronze field guns, 400 cannon balls, 6000 pounds of gunpowder, 12,000 pounds of lead, six petards, and for making earthwork defenses, 200 shovels, 200 spades and 100 axes. R.St.-Gen. 23 maart 1639.

Sometimes, obsolete, worn-out or useless equipment would be sold to foreign customers who seemed to be particularly hard-pressed for weapons. For instance, in 1610 Grand-Pensionary Olnebarnevelt notified the States-General that a foreign delegation was in the country with the aim of purchasing arms for a cause worthy of the Republic's support. Prince Maurice, who had a decisive voice in national security affairs, was requested to look into the matter and see if by any chance there were 2000 harquebuses and muskets in the government arsenals. Maurice saw a splendid opportunity to get rid of some old and obsolete small arms and replace them. It was decided to supply 1200 second-hand harquebuses and muskets, together with 5000 pounds of gunpowder, lead and match.<sup>13</sup> In another instance, spoiled gunpowder was sold to foreign customers. In 1612, Nicolas Du Jardin was given permission to export 30,000 pounds of French gunpowder that had gone bad. The proceeds were supposed to be spent on buying saltpeter.<sup>14</sup> Thus, foreign customers sometimes helped to keep Dutch arsenals well-supplied with up-to-date equipment and goods.

Transactions were not always smooth. Whenever Dutch strategic reserves were too small, putting the security of the Republic at risk, strict export controls on arms and military equipment were imposed. During the Union of Kalmar War, no export licenses of weapons to Sweden and Denmark were issued. In 1627 and 1637, exports of gunpowder were temporarily suspended.<sup>15</sup> Sometimes, export restrictions were imposed upon the request of an ally, such as in 1611, when the States-General acceded to the wish of Queen-Dowager Maria de Medici of France, to forbid exports of arms to her kingdom so as help a civil war from breaking out.<sup>16</sup> Yet all such measures did was to impede trade just briefly. Usually, the arms trade resumed its natural flow quite soon, if not legally, then in the form of contraband.

Not surprisingly, our knowledge of the extent of the illegal arms trade in the 17th century is scant. We may assume that in many cases, the source of illegal weapons was the Dutch Republic, but we can only guess at the customers. However, the customers were probably already engaged or about to be engaged in a war. Many weapons were exported by ship on the Rhine, through Cleves, Julich, Cologne, Berg and Mark. Except for Cologne, this region nearly permanently enjoyed a Dutch guarantee of unhampered arms imports. The French Ambassador, Du Maurier, pointed this out in 1616, when he pleaded for an arms embargo against his country. Du Maurier indicated that in order to carry any effect, the measure ought to include both banks of the Rhine River, just

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<sup>13</sup> R.St.-Gen. 26 January 1610.

<sup>14</sup> R.St.-Gen., 2 February 1612.

<sup>15</sup> R.St.-Gen. 10 July 1627; R.St.-Gen. 19 February 1637.

<sup>16</sup> R.St.-Gen. 3 December 1611.



across the Republic's border.<sup>17</sup> However, most weapons were exported by sea from Amsterdam and other ports in Holland and Zeeland. Smuggling was comparatively easy, since all one had to do was to give a fake destination. For instance, the Zeeland admiralty in 1612 complained that the Barbary pirates were receiving substantial shipments of ammunition from the Republic. Captains routinely gave up La Rochelle and Málaga as the destinations for these shipments, so the Zealanders said.<sup>18</sup> Whoever was caught smuggling arms was given a hard time, but nothing more. In 1611, the armourer Matthijs van Zittert was called before the Rotterdam admiralty to face charges of attempting to export 2200 suits of armour and 200 furquets to Brandenburg without securing prior authorization. However, the anger of the authorities probably did not concern the attempt in itself as much as the evasion of export duties. After all, Brandenburg was a Dutch ally.<sup>19</sup> The States-General insisted on making the final decision on the export of military equipment. Around 1600, the admiralties were reminded time and again that they could not issue export licenses, but instead had to pass on to The Hague any requests for the export of arms. The States-General then turned to the admiralties for advice, and in the case of substantial shipments, to the Stadtholder and the Council of State ('Raad van State'), the authority in charge of national security and defense matters.

#### 4. MAIN CUSTOMERS

France, as a major ally of the Republic, was a big buyer on the Amsterdam arms market.<sup>20</sup> The States-general received substantial subsidies from the French king to carry on the rebellion against the Spanish. Numerous Frenchmen served in the Dutch army in their own regiments, led by their own officers. French subsidies were primarily intended for the maintenance of these units. The Dutch army was fitted out centrally, including the units made up of foreign mercenaries under foreign commanders. Most weapons were purchased by the government and stored in government arsenals. As for the French army in France, it was still to a great extent supplied in the traditional manner, that is, the regimental commanders (mostly colonels), were personally responsible for the purchase of weapons, equipment, clothing and food. For many years, weapons and equipment were bought routinely on the Amsterdam arms market, with the French ambassador at The Hague acting as an intermediary. The Ambassador regularly received requests from French regional and regimental commanders for

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<sup>17</sup> R.St.-Gen. 17 September 1616.

<sup>18</sup> R.St.-Gen. 9 July 1612.

<sup>19</sup> R.St.-Gen. 12 January 1611.

<sup>20</sup> See, G. Beks in *Arsenaal van de wereld*.

the delivery from the Republic of modest shipments of weapons. The ambassaador passed these requests on to the States General, which granted export licenses. Most weapons bought in this way were destined for the north of France (Normandy, Picardy, the cities of Amiens, Péronne, etcetera), and occasionally for the south of the country (Bayonne, for instance). Apart from these shipments, the French government itself directly placed substantial orders for weapons. From 1613 to 1621, an estimated 20,000 muskets, 7000 suits of armour, 5000 pikes and 4000 other weapons were shipped to France from the Republic.<sup>21</sup> During these same years, the French still hardly bought any other kinds of military equipment and weapons. Between 1621 and 1635, the French navy was greatly expanded and improved. Warships and enormous quantities of guns and naval stores (such as metals, rope, tar, masts, sails) were then bought in the Republic. In 1635, French prime minister Richelieu signed a treaty with Chancellor Oxenstierna of Sweden, agreeing on a common intervention on the protestant side in the 30-Years' War. The Amsterdam arms market was quite delighted with this cooperation, for obvious reasons. Not surprisingly, the new alliance purchased many of its weapons and equipment in the Republic. The French no longer buying as many muskets as in previous years, instead ordering large quantities of bulk goods: gunpowder and match. From 1635 to 1641, a mere 13,000 muskets were shipped to France, but at least 2.2 million pounds of gunpowder and 1.5 million pounds of match. The gunpowder alone would have cost some 11 million guilders.<sup>22</sup> Almost 6% of French imports in that period (between 1635 and 1645) consisted of weapons and gunpowder (1.2 million livres). Timber, masts, rope and tar made up about 8%, copper, iron and lead 7%. Thus French imports of weapons, military equipment and strategic goods amounted to over a fifth of all imports from the Republic.<sup>23</sup>

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<sup>21</sup> R.St.-Gen., 1 February 1613; 11 February and 11 August, 1614; 13 May and 17 August, 1615; 16 March, 1616; 6 and 18 March, 22 and 25 May, 1617; 10 November, 1619; 29 February and 20 August, 1620; 30 March, 22 and 29 May, 21 June, 12 July and 21 September, 1621.

<sup>22</sup> R.St.-Gen. 10 and 13 January, 1 August, 14 September, 27 October and 22 December, 1635; 16 February, 6 March, 14, 25 and 30 August, 4 and 29 September, 25 November and 2 December, 1636; 6 and 14 July, 23 December, 1637; 28 September and 6 October, 1638; 4 april, 1640; 24 and 31 January, 28 August and 5 October, 1641; 23 August, 1643; 10 and 13 January, 6, 13 and 17 February, 6, 7 and 21 March, 26 April, and 7, 8 and 9 August, 1645; 2 and 22 February, 13 May 1646; 13 May 1648; and 27 May 1650.

<sup>23</sup> See, M. Morineau, «La balance du commerce franco-néerlandais et le resserrement économique des Provinces-Unies, au XVIIIème siècle,» *Economisch-Historisch Jaarboek* 30 (1963-64), pp. 170-235, daarin p. 174. See also, Jonathan I. Israel, *Nederland als centrum van de wereldhandel, 1585-1740* (Franeker, 1991), tabel p. 287.

France was, however, the only great power to buy regularly on the Amsterdam arms market. It had no choice in those years, because its own arms industry had been devastated during the Wars of Religion, forcing thousands of skilled and experienced craftsmen into exile. France thus became heavily dependent on arms imports, and Richelieu had permanent representatives and agents stationed in Amsterdam and The Hague to ensure a plentiful supply of the tools of war.<sup>24</sup>

The states-general were not petty minded when it came to granting export licenses for arms, and they were on occasion willing to give precedence over a cause transcending the immediate national interest. For instance, in 1604 the German emperor was allowed to buy 3000 harquebuses «made after the Dutch model». Although the Emperor was an ally of the king of Spain, and one of the mainstays of the Counter Reformation, the deal was not prevented. Like almost everyone else in Western Europe, the States-General were worried by the advance of the Ottoman Turks, against whom the weapons were to be used. In 1624, Louis de Geer was allowed to sell 5000 muskets to the Emperor. This time, the weapons were destined for the Hungarian leader Bethlen Gábor, who was fighting the Turks.<sup>25</sup> Since that date, however, no more substantial arms deals are recorded.

Dutch weapons were renowned for their quality. When in 1615 the Austrian *Hofkriegsrat* at Vienna, upon the urging of Field Marshal Raimondo Montecucoli took the decision to set up a national armaments industry, Dutch locksmiths were invited to Neustadt and Steyr.<sup>26</sup> Probably the resurging French arms industry also sought to contract Dutch craftsmen, but that will not have been an easy matter.<sup>27</sup> The States-General were quite conscious of the value for the national security of the presence of skilled arms makers. Besides, it was better for modern technical knowledge to remain within the borders of the Republic. Of course, there were economic motives as well: the better the quality of Dutch arms, the more attractive the Dutch market was for the foreign buyer.

Rather than allow skilled craftsmen to leave, the States-General permitted weapons to be exported. The government at The Hague quite rightly assumed that the arms

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<sup>24</sup> Carlo M. Cipolla, *Guns, Sails and Empires: Technological Innovation and the Early Phases of European Expansion*, (New York, 1965), pp. 66-67.

<sup>25</sup> R.St.-Gen. 9 April 1624.

<sup>26</sup> Harms Kaufmann, *Raimondo Graf Montecucoli 1609-1680. Kaiserlicher Feldmarschall, Militärtheoretiker und Staatsmann*. Berlin (dissertation Freie Universität), 1974, pp. 48-49.

<sup>27</sup> Small arms were manufactured in many other countries as well, for instance in England, Denmark, Sweden, Russia and Spain. Suhl, Germany's chief manufacturing center, was destroyed in 1634. See, Werner Sombart, *Krieg und kapitalismus* (Munich/ Leipzig, 1913), pp.94-99.

trade was good for the economy. In 1620, Louis de Geer was authorized to sell weapons to France and Germany, precisely on these grounds.<sup>28</sup>

England was an important customer for the Amsterdam market as well.

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<sup>28</sup> F.J.G. Ten Raa en F. De Bas, *Het Staatsche Leger 1568-1795*. Deel 3, (Breda: Koninklijke Militaire Academie, 1913), p. 66 [Res. St.-Gen. 16 en 20 maart 1620].