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<image>http://gallica.bnf.fr/ark:/12148/btv1b10500001g/f41.image</image>

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Culverines are big batteries of forty <ms>quintal</ms>s and eighteen <fr><ms>pan</ms></fr>s long. Their bullet of the <ms>King's standard</ms> and battery weighs 30 <ms>pound</ms>s and is therefore lighter than the canon's one. Therefore, It does not carry so many munitions because fifteen <ms>pound</ms>s are enough for its load. The canon has a bigger mouth due to the size of its cannonball, but the colverine is more precise and goes faster, having greater range due to its length. Its breech is two bullets and a third thick, the front is a bullet thick. Culverines are used for fighting fortifications from far away when it is not possible to easily approach them. And then canons come closer. They are used also to support the battery. Fifteen or sixteen <al>horses</al> are necessary to carry it. They are made of the same metal alloy than the canon, like all others smaller pieces <sup>of artillery</sup>. For these, we add a little bit more metal in order to make the melting run better. And for two <ms>quintal</ms>s of <m>rosette</m>, you add six unit of metal per pound for smaller pieces. They range from 8 or 9 hundred <ms>pace</ms>s to a thousand <ms>pace</ms>s if the <m>powder</m> is strong and in the air half a <ms>league</ms>.</ab>

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Some invented loading cannons with cartouches.</ab>

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Some don't fill the canon with <m>powder</m> at once but twice and each time ramming the <m>powder</m> in, saying that each time you ram it, you raise it and give an <ms>inch</ms> more. But this is not sure for big pieces for they are loaded with a lot of <m>powder</m>.</ab>

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The <fr>bastarde</fr> is a middle-sized piece <sup>of artillery</sup> which weighs thirty <ms>quintal</ms>s and its cannonballs weight 15 <ms>pound</ms>s and is loaded with 10 or 12 <ms>pound</ms>s of <m>powder</m>. Its proportions are two cannonballs and a third part of a third one thick at the breech and one cannonballs and three parts of two at the front. They are used for fighting against less important defences such as gabions or sentries, topped with a tower, or similar thing. It is thirteen to fourteen <fr><ms>pan</ms></fr>s long like the great cannon. Ten <al>horse</al>s are necessary to carry it. It goes with the culverine for shooting because it carries small munitions. </ab>

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Some make the breech three cannonballs thick and the front two cannonballs.</ab>

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The <fr>bastarde culverine</fr> weights 35 <ms>quintal</ms>s and is 25 <fr><ms>pan</ms></fr>s long. The breech is three cannonballs thick and the front two cannonballs. Its cannonball is like the bastard one, weighing 15 <ms>pound</ms>s. These are fixed pieces which cannot be carried on a carriage. They are for city defences. Some make cannons like these which are 27 or 28 <fr><ms>pan</ms></fr>s long, like <pl>La Rochelle</pl>'s <fr>vache</fr>, but such pieces are strengthened at the breech with a width of three cannonballs. Their range is one <ms>league</ms> and a half. Its load is like the <fr>bastarde</fr>'s one, and if one wants to hit <pro>horsemen</pro> very far way, more <m>powder</m> is added. After the cannonball there is a trace of smoke which drives your <corr>trajectory</corr> to where the cannonball is going. This is understood for cannons and the <fr>culverine</fr>, but not for small pieces.</ab>

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