



SOJ-4(08)
M1732 Vallière System (1732-1765)

Stephen Summerfield of Loughborough University

In 1725, the Second Reduction in calibres was carried out.

24-, 16-, 12-, 8- and 4-pdr cannon plus 8- and 12-pouce mortars.⁸³

In 1732, *Général de Royal Artillerie* Jean-Florent, Marquis de Vallière (1667-1759) restricted to five standard dimension and calibres⁸⁴ of the guns using two thirds the weight of shot.⁸⁵ Vallière had kept the dimensions of cannon produced in Douai from 1680 and imposed them on other foundries. Vallière believed that it was folly to create specific guns for the field, siege and garrison. His views were based upon the siege warfare of Louis XIV. The War of Polish Succession (1733-38) was the first time the M1732 guns were used.

Table 2: Dimensions of M1732 Valliere guns.⁸⁶

	Long 24-pdr	Long 16-pdr	Long 12-pdr	Long 8-pdr	Long 4-pdr
Bore	152.5mm	134.5mm	121.3mm	106.0mm	84.0mm
Tube length	323cm (20.2 calibres)	310cm (22.3 calibres)	293cm (23.2 calibres)	264cm (24 calibres)	219cm 27 calibres
Weight	2,645kg	2,054kg	1,565kg	1,028kg	522kg
Weight ratio	225:1	260:1	267:1	260:1	287:1
Ammunition					
Shot diameter	147.5mm	129mm	117.4mm	102.4mm	81mm
Windage	5mm	5.5mm	4.1mm	3.6mm	3.0mm
Shot weight	?	7.84kg	5.82kg	4kg	?
Charge	?	?	4.kg		?
Charge ratio					
Carriage					
Cheek length	438cm	417cm	397cm	370cm	276cm
Wheel diameter	157cm	157cm	157cm	146cm	146cm
Track	124cm	124cm	124cm	124cm	124cm
Carriage weight					
Carriage weight ratio					
Total weight	4,300kg	3,500kg	2,900kg	2,300kg	?
Limber					
Limber wheels	92cm	92cm	92cm	92cm	92cm
Horses	16 horses	12 horses	8 horses	6 horses	4 horses

⁸³ Decker (1994) 149.

⁸⁴ Decree of 7 October 1732 St Remy, (1745), Vol III pp477-50

⁸⁵ Percy N. (1832: r/p 1979), p12-13 and p21

⁸⁶ Christian Rogge and Digby Smith (2012) "French Artillery Valliere System," *Seven Years' War Project*, www.kronostaf.com [Accessed 12/6/2012]; Decker (1994); Dawson, Dawson and Summerfield (2007).

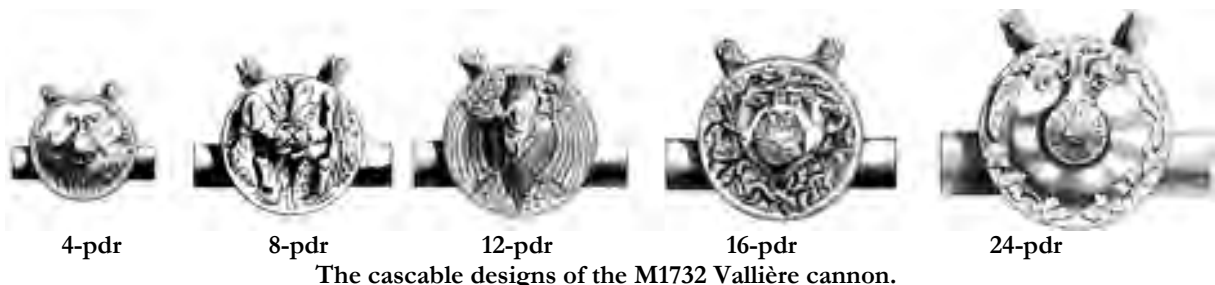
M1732 Long 24-pdr (21 cal)

The cascabe was shaped as the face of Bacchus or Hercules.

- *L'ESPOIN* cast in 1745 at Strasbourg by Jean Maritz II is 323cm long.⁸⁷
- Cast in 1746 at Strasbourg, 327.7cm long and weighs 2,774kg were captured in a raid upon Cherbourg in 1758.⁸⁸
- Cast on 15 March 1748 at Douai is 327.7cm long and weighs 2,780kg captured in a raid upon Cherbourg in 1758.⁸⁹
- *L'IMPETUEUX* had a calibre of 152.5mm, 323cm (20.2 calibres), 2,645kg and weight ratio of 225:1. The carriage was 438cm and 156cm wheels. Total weight of 4300kg. The limber had 92cm wheels. Pulled by 16 horses in single file.⁹⁰



M1732 24-pdrs in the Musee de l'Armee.



The cascabe designs of the M1732 Vallière cannon.

⁸⁷ Rotunda II-105

⁸⁸ Royal Armouries XIX-54: Blackmore (1976) pp119-20

⁸⁹ Royal Armouries XIX-53: Blackmore (1976) pp119-20

⁹⁰ 37065/O.72 [Decker (1994) 57].

M1732 Long 16-pdr (23 cal)

The pieces varied slightly in design and weight up to 50kg according to the foundry The cascabel was shaped as the face of the Medusa.

- *LA BRILLIANT*: Calibre 134mm, 311 long (22.3 calibres), 2,055kg and weight ratio of 260:1. Carriage length of 406cm. Total weight of 3500kg. Limber had 92cm wheels and pulled by 12 horses in single file.⁹¹
- *LA CHIFFONEUSE* cast by Bérenger d'Onicourt at Douai in 1742 weighed 2,007kg.
- *LA FURIBONDE* cast in 1732 at the Musee de l'Armee, Paris.⁹²
- *LA GLAUCUS* cast by Jean Maritz in 1744 at the Musee de l'Armee, Paris.⁹³
- *LE POSTILLO*: Calibre 135mm, 309 long (22.2 calibres) at the HGM in Vienna.



⁹¹ 37066/O.73 1:6 scale model [Decker (1994)]

⁹² Musee de l'Armee, Paris [Jobe (1971) 208]

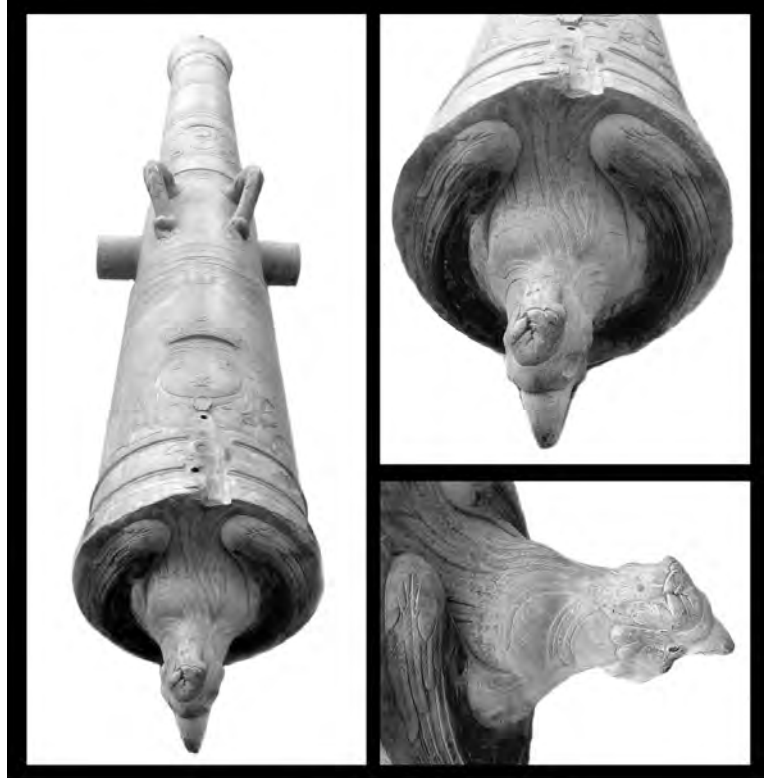
⁹³ Musee de l'Armee, Paris [Jobe (1971) 208]

M1732 Long 12-pdr (24 cal)

The pieces varied slightly in design and weight up to 50kg according to the foundry. The cascabel was shaped as the head of the rooster or cockerel.

- *LA REVEILLE:*
Calibre of 121.2mm, 293cm long (23.2 calibres), 1,565kg and weight ratio of 267:1. The carriage was 390cm. Total weight of 2900kg. The limber had 92cm wheels and pulled by 8 horses in single file.

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M1732 Long 12-pdr cast in 1736 [Musée de l'Armée, Paris]

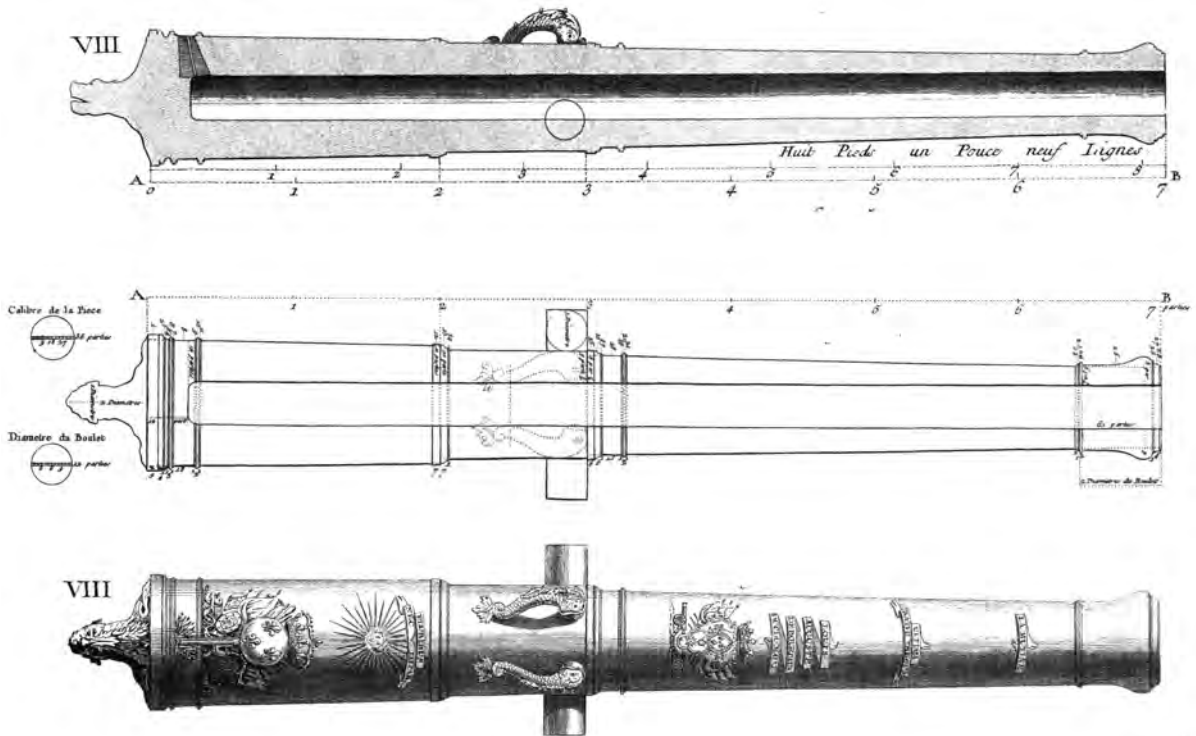


M1732 Long 12-pdr named Le Tonnere at the Musée de l'Armée, Paris.

⁹⁴ 37068/O.75 1:6 scale model [Decker (1994)]

M1732 Long 8-pdr (25 cal)

- *LA MUTINE*: Calibre of 106mm, 265cm long (24 calibres), 1,030kg, and weight ratio of 260:1. Total weight of 2300kg. The limber had 92cm and pulled by 6 horses in single file.⁹⁵



M1732 Valliere 8-pdr

M1732 Valliere 4-pdr (26 cal)

Interestingly the Prussians in 1762 were the first to rebore the M1732 Valliere 4-pdr to 6-pdr.

- *LE PENETRANT* was 26 calibres long.



M1732 Vallier Long 4-pdr named Le Penetrant
[Musee de L'Armee]

In 1733, Belidor taught Jean Baptiste de Gribeauval (1715-89) before he was exiled by Vallière Senior for daring to lay down new guidelines based upon empirical methods.⁹⁶

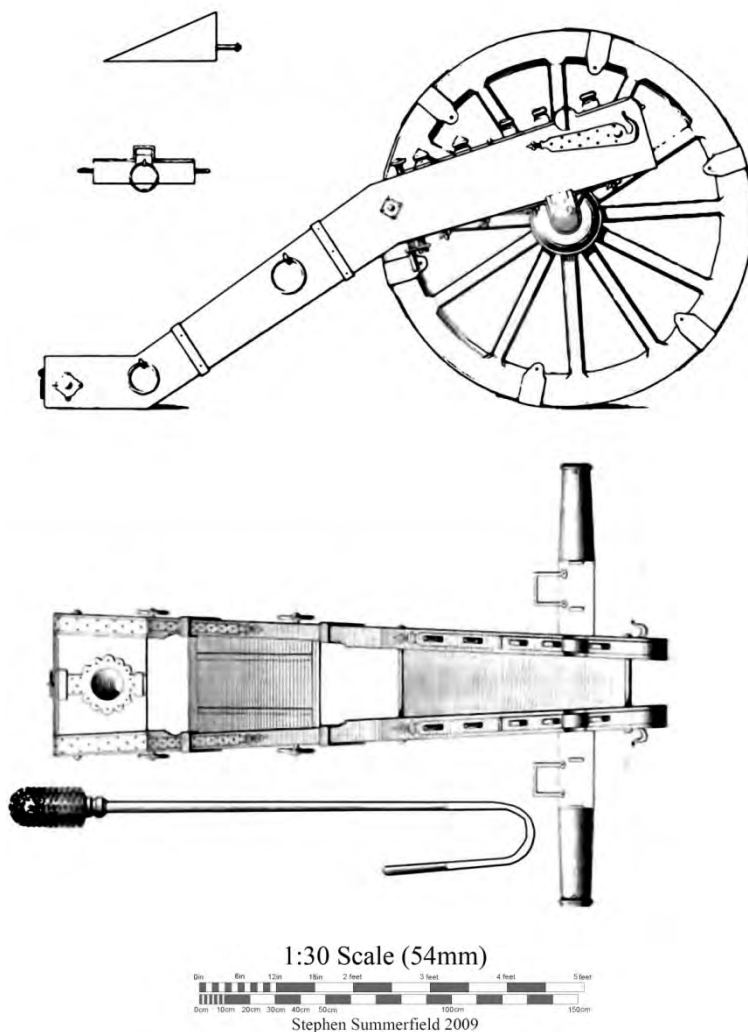
⁹⁵ 37068/O.75 1:6 scale model [Decker (1994) 58]

⁹⁶ Summerfield (2011) SOJ-2, 10

In 1735, the Chevalier de Belac who was a Frenchman serving in the Swedish Artillery passed on the dimensions and drawings of the Swedish M1725 Cronstedt System to the comte de Castéja, the French ambassador in Sweden. These plus two scale models were dispatched to M. Boiteux de Gormond, secretary general of the artillery. The Swedish and Russian Armies had employed guns that could fire up to 10 rounds per minute for close support of their infantry.⁹⁷

In 1738, Marshal de Belle-Isle (1684-1761) proposed using light 4-pdrs to support the infantry. Plans for the 4-pdr “à la Suédoise” battalion guns of 180:1 weight ratio were base upon plans obtained by Chevalier de Belac from his visit to Sweden.⁹⁸ Tests were carried out at Metz tests using an ordinary M1732 Vallière 4-pdr on a carriage à la Suédoise.⁹⁹

In 1739, Belidor determined that the weight of charge should be a third of the weight of shot by experiment at La Fère and a year later at Metz.¹⁰⁰



Despite the pressure of Vallière and his supporters opposed to lightened pieces, Marshal de Belle-Isle managed to persuade the Secretary of State in War François Victor Le Tonnelier de Breteuil (1686-1743) to permit the tests on the 4-pdr “à la Suédoise.”¹⁰¹ These were carried out at Croix Saint Ouen near Compiègne, some of them in presence of Louis XV. M1732 Valliere 4-pdr could fire a maximum of 5 shots per minute whereas the 4-pdr à la Suédoise could fire almost double this. This impressive rate of fire for both pieces was due Chevalier Pelletier introducing:

- fixed ammunition consisting of a canvas powder cartridge covered in bitumen fixed to a wooden sabot then the roundshot following Prussian practice instead of simpler cartridge paper.
- Fuses of 64mm reed stalk of 6.7mm diameter filled with fine gunpowder, saltpetre and charcoal enclosed in a paper envelope instead of fine powder poured into the vent and ignited.¹⁰²

⁹⁷ Jean-Louis Vial (2012) “French Artillery à la Suédoise”, *Seven Years’ War Project*, www.kronoskaf.com [Accessed 12/6/2012].

⁹⁸ Ehresmann P. (2012) *La system Gribeauval et la piece de 4 livres*, Soldats Napoleoniens.

⁹⁹ Jean-Louis Vial (2012) “French Artillery à la Suédoise”, *Seven Years’ War Project*, www.kronoskaf.com [Accessed 12/6/2012].

¹⁰⁰ Percy (1832) p13

¹⁰¹ Ehresmann P. (2012) *La system Gribeauval et la piece de 4 livres*, Soldats Napoleoniens.

¹⁰² Jean-Louis Vial (2012) “French Artillery à la Suédoise”, *Seven Years’ War Project*, www.kronoskaf.com [Accessed 12/6/2012].

War of Austrian Succession (1740-1748)

The War of Austrian Succession showed the lack of mobility of the M1732 Vallière guns compared to the lighter Prussian guns. .

In 1740, two short (146cm) artillery pieces were cast at the Paris arsenal by the Founder Sieur Saustray and a new carriage *à la Suédoise*. These proved satisfactory after tests and fifty 4-pdr “*à la Suédoise*” were ordered.¹⁰³ During the War of the Austrian Succession, the pieces remained attached to the artillery park and were distributed at the whim of the army commander.

M1740 4-pdr “*à la Suédoise*” (17.4 cal) on M1740 Brocard Carriage and M1732 single draft limber
The carriage was designed by Brocard and introduced the Coffret, vertical elevating screw acting on a horizontal plate, and the crooked rammer that were later adopted by Gribeauval. Carriage cheek length 244cm, wheel diameter 146cm, track width 124cm, total axle width 164 cm and the transverse distance between wheels 132 cm. These Swedish 4-pdrs were not officially adopted until 1757. Sometime these guns were referred to as the Brocard or De Saxe 4-pdr.

In 1741, Marshal de Saxe introduced the 1-pdr *Amusette*¹⁰⁴ only to be withdrawn from service and placed in storage in the arsenals in 1748 at the end of the war.

M1741 1pdr Amusette (22 cal) drawn in *limonière* by one horse.



De Saxe 1-pdr Amusette

In 1741, Philippe Joseph, Comte de Rostaing,¹⁰⁵ then commissioner of artillery, was sent to India to establish an artillery school and a powder factory. He subsequently participated in the Malabar Coast Campaign and was then sent to Ile de France (today Mauritius Island) where he had to establish a saltpetre refinery and powder mill.¹⁰⁶

In 1744, the roofing of guns would be by two rounds at two thirds the weight of shot and the other three at half the weight of shot.¹⁰⁷

¹⁰³ Chandler D. (1976) pp190-1: See also Percy (1832 r/p 1979) p14.

¹⁰⁴ Chandler D. (1976), p190-1.

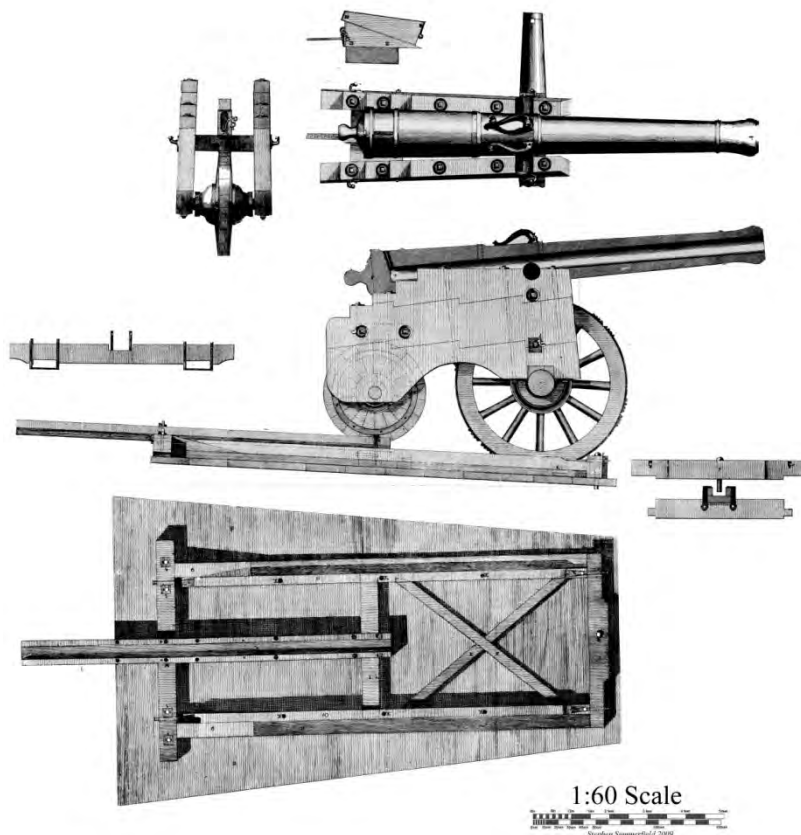
¹⁰⁵ Not to be confused with Louis Charles, Marquis de Rostaing who was *maréchal de camp* and commander-in-chief of the artillery at Le Havre in the 1750s.

¹⁰⁶ Jean-Louis Vial (2012) “French Artillery à la Rostaing”, *Seven Years’ War Project*, www.kronoskaf.com [Accessed 12/6/2012].

¹⁰⁷ Percy N (1832) r/p 1979) pp14-5

1747

Lieutenant General Joseph Vallière Junior (1717-76) succeeded his father as *directeur de corps de l'artillerie* [Director of the Corps of Artillery].¹⁰⁸



1748-49

Gribauval proposed the construction of a new garrison carriage in **September 1748**. The M1749 Gribauval garrison carriage was constructed in **March 1749** at Douai based upon his experience of siege war in the later part of the Austrian War of Succession in the German Campaign (1743) and then in Flanders (1744-47).¹⁰⁹ It was not adopted by the French Artillery.

Left: M1748 Gribauval Garrison Carriage was not adopted.
[After De Scheel (1777)]

1753

Austria adopts the M1753 Liechtenstein System.¹¹⁰

By **1748**, only 10 of the 86 4-pdr pieces were “à la Suédoise.” After the War of Austrian Succession, they were withdrawn from service.

In **1748-49**, Philippe Joseph, Comte de Rostaing served as land and naval artillery commander under the chevalier de la Bourdonnais during the campaigns against the British in India and Ile de France. In **1755**, Philippe Joseph, Comte de Rostaing returned to France.¹¹¹

On **6 April 1755**, Captain Gribauval of the *Corps des Mineurs* was chosen by Comte Marc-Pierre D'Argenson, the Secretary of State for War to study the new Dieskau M1754 Light 3-pdr battalion gun that had a conical bore. On **20 May**, Gribauval was finally given access to the Prussian battalion gun. On **9 June**, Gribauval returned to Paris. He considered the gun would not be durable enough.¹¹²

¹⁰⁸ Summerfield (2011) SOJ-2, 10

¹⁰⁹ Summerfield (2011) SOJ-2, 10-11

¹¹⁰ Summerfield (2011) *Austrian Seven Years War Cavalry and Artillery*, Ken Trotman.

¹¹¹ Jean-Louis Vial (2012) “French Artillery à la Rostaing”, *Seven Years' War Project*, www.kronoskaf.com [Accessed 12/6/2012].

¹¹² Susane (1874) 179; Summerfield (2011) SOJ-2, 11

Seven Years War (1756-1763)

The French Artillery was at a severe disadvantage against the British and the Prussians due to the lack of mobility of the M1732 Vallière guns

In 1756, Belidor elected to Minister of Sciences and permitted back into the Artillery.

On 20 January 1757, Each infantry battalion was re-allocated one M1740 4-pdr “à la Suédoise”¹¹³ (hauled by three horses and served by a sergeant and sixteen soldiers)¹¹⁴ and one M1757 1-pdr Rostaing gun.

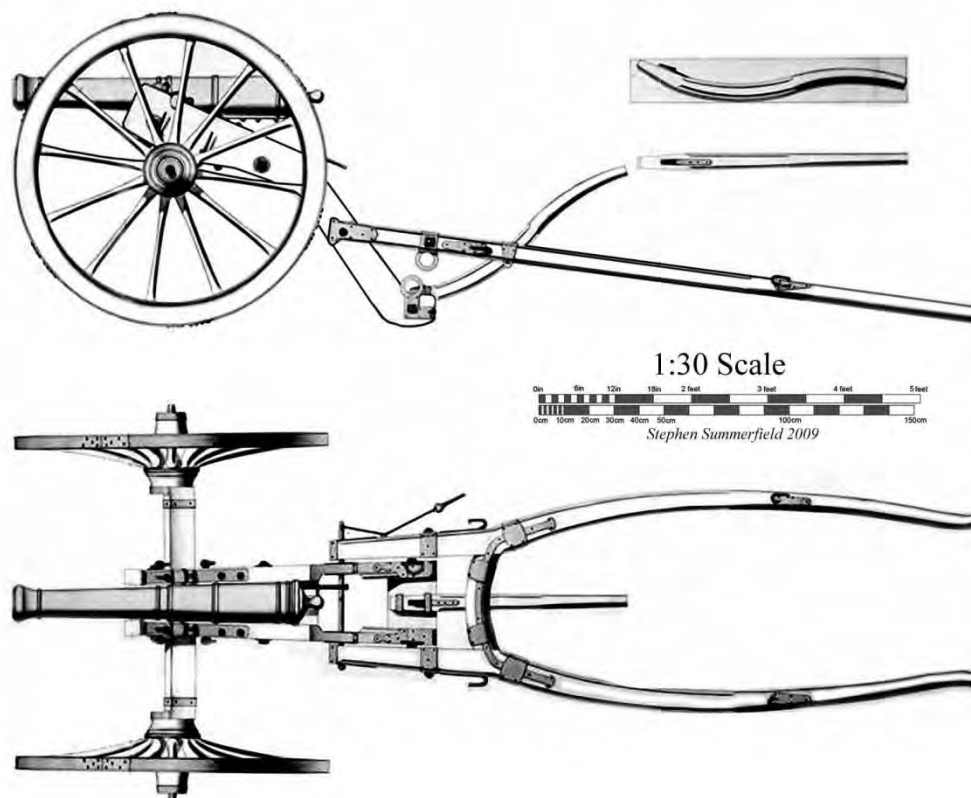
M1740 4-pdr “à la Suédoise” (17.4 cal) on M1740 Brocard Carriage and M1732 single draft limber

The 20 January 1757 regulation stipulated:

“The king gives to each battalion of his French and Foreign Infantry destined to serve in campaign one cannon “à la Suédoise”, his majesty permits 1,200 Livres for the purchasing of 3 horses, of their harnesses, men's harnesses, carter's outfits... and 300 Livres annually for remounts and maintenance. Two sergeants and 16 soldiers including 8 gunners and 8 assistant-gunners at high pay, employed at the manoeuvre of the said piece.”

M1757 1-pdr Rostaing (21 cal) was drawn by *limonière*.

The M1757 Rostaing Gun design by Comte de Rostaing was developed in French India and was finally withdrawn from French service in 1798. Calibre 53mm, 114cm (20.6 calibres) long, 115kg and weight ratio of 235:1.¹¹⁵



The design of this 1-pdr piece was based upon Rostaing's experience of colonial campaigns where marches were made along trails and draught animals were scarce. This piece was man portable with

¹¹³ Royal Ordinance of 20 January 1757 as quoted by Notsworthy (1992) p331; Susane (1874) 179.

¹¹⁴ Tarrasuk and Blair (1979), p58

¹¹⁵ A fine example is owned by John Morris of Springfield Armouries in USA. See Dawson and Summerfield (2008), *Ordnance Companion*, 1(1), 5-6.

5 men to carry the barrel, 2 men to carry wheels, 1 man for each of the 2 brackets, 1 man for the axle. The M1758 1-pdr *Rostaing* gun was comparable to the contemporary *amusettes* developed in Denmark and other lesser German states.¹¹⁶

On **5 November 1757**, the French were heavily defeated by Frederick II of Prussia at Rossbach. Gribeauval attributed their defeat to the newly introduced regimental artillery.¹¹⁷

In **January 1758**, Maréchal de Belle-Isle in an memorandum destined to M. de Crémille complaining of the inconsistent allocation of pieces where certain regiments had none while others others had only one for 2 or 3 battalions.

*"It is not natural that our infantry could fight against the Prussian infantry with a disproportion of more than half. This object is of the greatest consequence".*¹¹⁸

On **10 March 1758**, Gribeauval was seconded to Austrian service in the Corps of Engineers with the rank of *Obrist*.

On **1 May 1758**, Duc de Belle Isle as Secretary State for War ordered 100 M1758 4-pdr "*à la Suédoise*" to replace those lost at Rossbach (December 1757) to new M1758 design of Jean Francois Béranger at Strasbourg. By 30 March 1759, he had completed 68 4-pdrs.

M1758 4-pdr "*à la Suédoise*" (17.4 cal)¹¹⁹ on M1740 Brocard Carriage and M1732 single draft limber

In early **1759**, Vallière Senior died. On **4 January**, Duc de Belle Isle as Secretary State for war directed that each infantry battalion should now have two 4-pdr "*à la Suédoise*". The M1757 *Rostaing* guns were supposed to be returned to the arsenals. Many were allocated to colonial and light troops. Maréchal de Broglie in November 1759 wrote:

*"I believe that they [M1757 1-pdr Rostaing Gun] are excellent for light troops provided that each is drawn by a small horse and that we dispose of a small and extremely light caisson hitched up to two horses to carry ammunition. Under these conditions, one could lead them by the most difficult roads of Germany."*¹²⁰

¹¹⁶ Jean-Louis Vial (2012) "French Artillery à la Rostaing", *Seven Years' War Project*, www.kronoskaf.com [Accessed 12/6/2012].

¹¹⁷ Hennebert (2000) 293; Summerfield (2011) SOJ-2, 12.

¹¹⁸ Jean-Louis Vial (2012) "French Artillery à la Suédoise", *Seven Years' War Project*, www.kronoskaf.com [Accessed 12/6/2012].

¹¹⁹ "*LA COURAGEUSE*" and "*LA CONTREBANDIÈRE*" are M1758 4 -pdrs "Swedish" pattern cast in 1758 by Jean Béranger at Strasbourg still exist in America. These were part of the 8x 4-pdrs *a la suedos* and 2x 6-pouce howitzers under Captain Vouges de Chanteclair of the Metz Artillery Regiment that fought at Yorktown (1781). These were captured on 12 April 1782 on the *Ville de Paris* by the Royal Navy at the Battle of the Saintes that ended French plans to invade Jamaica. It is very interesting that these were not Gribeauval 4-pdrs. Christopher Bryant (2008) *Personal Communication*.

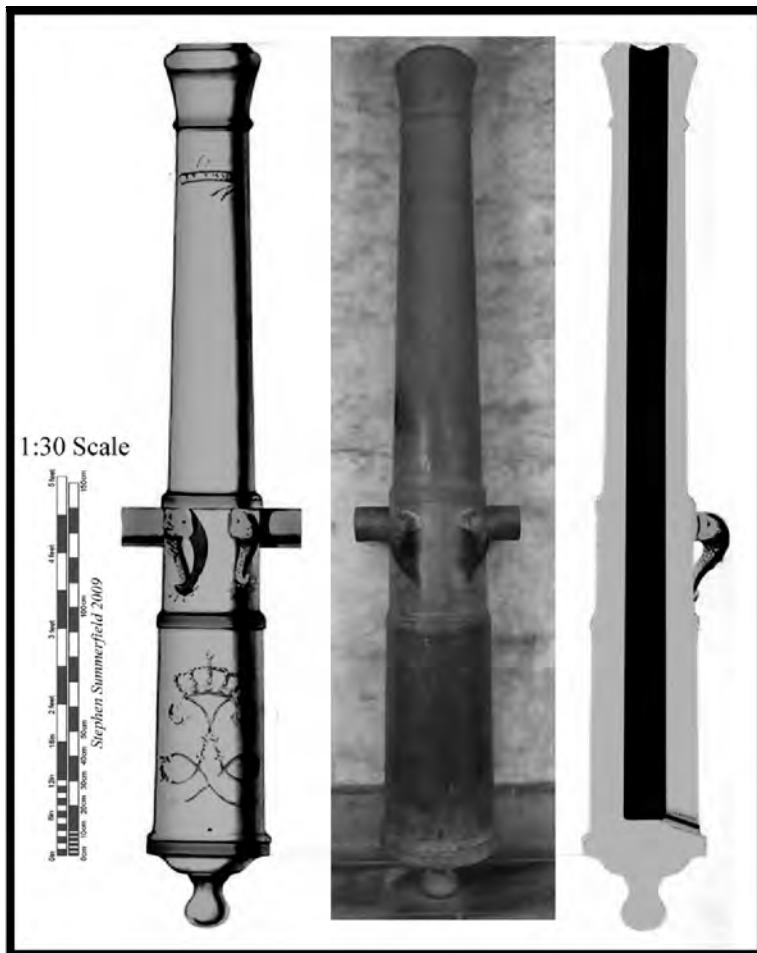
¹²⁰ Jean-Louis Vial (2012) "French Artillery à la Rostaing", *Seven Years' War Project*, www.kronoskaf.com [Accessed 12/6/2012].



SOJ-4(09) Lightening of French Guns (1760-1761)

Stephen Summerfield of Loughborough University

The necessities of war had forced the consideration of lightening of guns and increasing the production of replacement of guns by reducing the decoration.



In 1759, Marshal de Broglie ordered the reboring of his M1732 Vallière guns.¹²¹ The M1732 Vallière 8- and 12-pdrs to 12-pdr and 16-pdr respectively ordered by Marshal de Broglie.¹²²

M1760 12-pdr = 265cm (22 cal)
188:1

M1760 16-pdr = 293cm (22 cal)
194:1

In 1760, Maritz II cast guns without the decoration of the previous M1732 Vallière Guns finished with his combined horizontal boring machine and lathe.

Interestingly De Scheel (1777 and 1795) depicts a siege M1760 16-pdr and 24-pdr with decorated dolphins rather than the M1773 version with plain dolphins characteristic of “Gribeauval” guns. Therefore, the drawing originate from those in Du Coudray (1772).¹²³

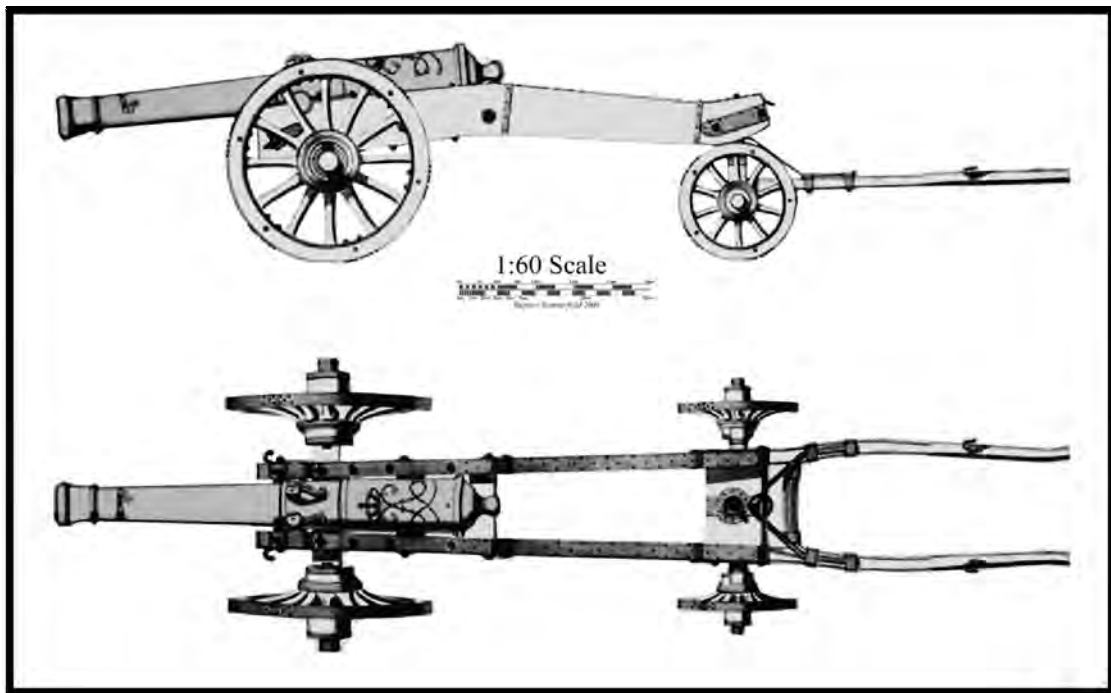
¹²¹ Percy (1832 r/1 979) p14; Summerfield (2011) 14

¹²² Decker (1994) 150 and de Scheel (1795) *Mémoires d'Artillerie, contenant l'Artillerie nouvelle*, Paris, p. 30.

¹²³ See plate XII in Graves (r/p 1984) 49-58.

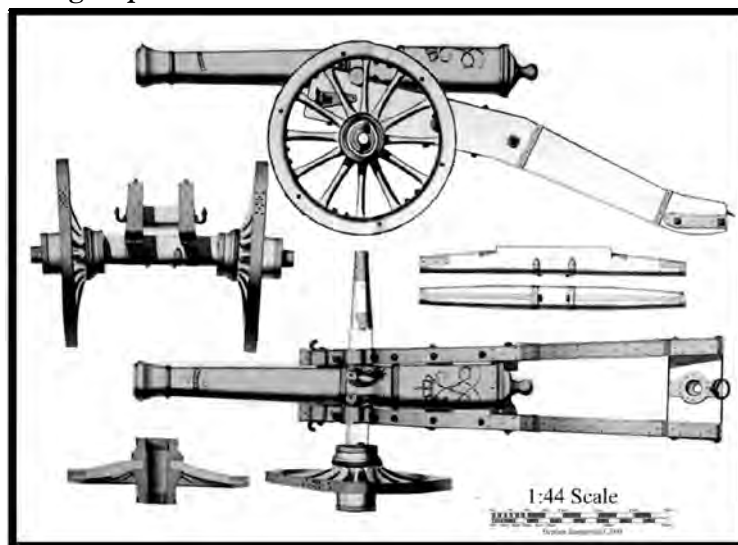
M1760 Maritz Long 24-pdr

- 24-pdr cast in 1764 with cast at Douai, length 347cm, weight 2,840kg.¹²⁴



M1760 Maritz 24-pdr

M1760 Maritz Long 16-pdr



M1760 Maritz 16-pdr

M1760 Maritz Long 12-pdr

- 121.3mm, 293cm long (23.2 calibres), 1570kg and weight ratio of 270:1. Carriage length 374cm.¹²⁵

M1760 Maritz Long 8-pdr

- 121.3mm, 265cm long (24 calibres), 1130kg and 290:1. Carriage length 292cm.¹²⁶

¹²⁴ Musée de l'Armée N173

¹²⁵ 37158/O.223 1:6 scale model: Decker (1994) 52

¹²⁶ O.363 and O.221 1:6 scale model. Decker (1994) p52

M1761 Maritz II Field Guns

In 1761, The Choiseul Ministry (1761-70) started that did much to overhaul the French Army and Navy.

On **21 December 1761**, the King ordered Maritz II to cast lighter 18 calibre guns.¹²⁷ These are probably of 18 calibres that were in 1764 tested by Gribeauval on his return. These were later tested in 1764 by Gribeauval.

M1762 Maritz 12-pdr (18 cal)

- 120mm, 211cm (18 calibres) long, 890kg and weight ratio of 150:1.

M1762 Maritz 8-pdr (18 cal)

- 106mm, 185cm (18 calibres) long, 590kg and weight ratio of 150:1.

On **3 March 1762**, Gribeauval wrote a report upon Austrian Artillery that answered the 18 questions from Dubois of the French War Ministry.¹²⁸ On **1 October**, Gribeauval was captured upon the capitulation of Schweidnitz after a 63 day siege. On **21 October**, Gribeauval was awarded the Grand Cross of the Military Order of Maria Theresa and to *Feldmarschal-lieutenant* [equivalent to major-general in the British Army] in his absence.

On **20 December 1762**, the M1757 “Swedish” 4-pdrs of the infantry were withdrawn to the arsenals.¹²⁹

¹²⁷ Royal Ordinance of 21 December 1761 in SHAT, Private papers 1k311, Box 12: See also Maritz II (1763) “Notebooks”, *SHAT Casting Artillery*, 3w134. However, Decker (1994: 150) states that light 8-pdrs and 12-pdrs were cast by Maritz in 1760 according to “Carnet Maritz 1758.”

¹²⁸ Summerfield (2011) 13

¹²⁹ Royal Ordinance of 20 December 1762