

# ROYAL NAVAL LONGARMS 1700-1870

## Part IV

by D. W. Bailey

ONE OF THE MANY disastrous results of the fire in the Tower of London on 30 October 1841 was the destruction of the Ordnance workshops, which, until they could be rebuilt, required arrangements to be made with the other elements of the military arms-making industry to take up the slack. Details of precisely how this was carried into effect are lacking; there was a contract of 8 November 1841 with the London trade, and of this contract there were 36 Sea Service Muskets delivered during 1844, and another (the final) 30 in 1846. The bulk of this contract are possibly those shown in Lovell's 'Statement showing the number of Percussion Arms of each description for Land and Sea Service that have been provided since the Honble Clerk of the Ordnance arranged with the Inspector of Small Arms at Birmingham for the manufacture of such arms' which is dated from the Small Arm Office at the Tower, 15 March 1842. This Return shows (the numbers in brackets are those in course of preparation on the Return of 11 October 1841):

Muskets	<i>Backaction Locks new</i>	980 ( 2,880)
	<i>Altered Percussion</i>	5,592 (20,445)
	<i>Serjeants</i>	373 ( 2,646)
	<i>Sea Service</i>	3,576 ( 3,994)
Carbines	<i>Double barrel'd for Cape Corps</i>	32 ( 36)
	<i>Victoria cavalry</i>	56 ( 2,118)
	<i>Constabulary</i>	130 ( 2,127)
Rifles	<i>Infantry</i>	24 ( 1,762)
Pistols	<i>Sea Service</i>	479 ( 3,267)

What is not made clear is whether the 3,576 Sea Service Muskets shown are part of those in preparation in October, 1841, or whether they are part of new contract deliveries. It also does not make clear whether these are of the P/39 (P/41) type or of the variant constructed from converted India Pattern parts as described at the end of Part III. It seems likely that the above number was comprised mostly of the conventional design but with a fairly large percentage of the India Pattern type. Further contracts with both Birmingham and London makers were made on 14 October 1842 and the bulk of them were probably delivered during 1843, for which year I have not yet discovered any returns. In 1844 the Birmingham trade delivered into Store 404 Sea Service Muskets on this contract.

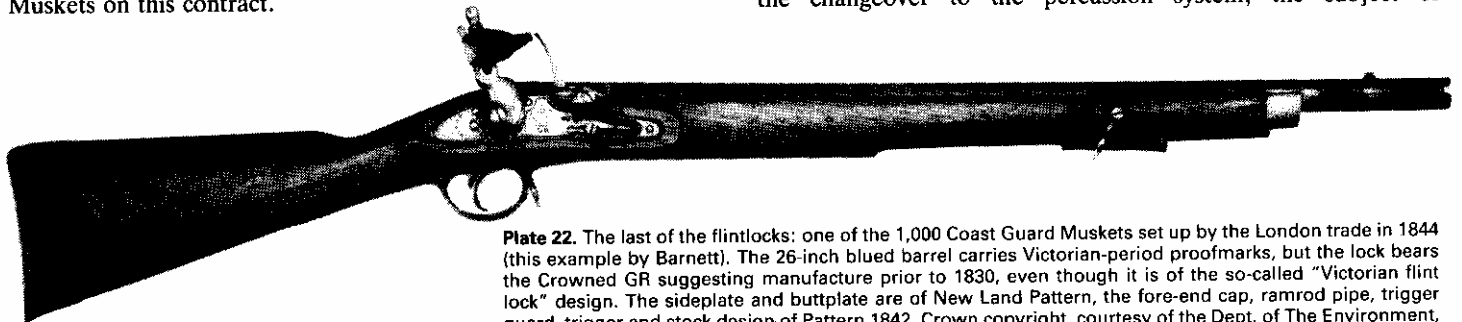
### The Last of the Flintlocks

While the major arms of the British services were being slowly re-equipped with the various percussion models, the flintlock made one last appearance in the hands of the Coast Guard, whose needs were far enough down the list of priorities of the Ordnance that they could be issued with the older form of weapon. It is true that in July, 1843, 10,627 flintlock extra service muskets were contracted for and received, but these are presumed not to have been for issue to regular British forces. The Coast Guard Muskets (Plate 22) were all contracted for in the London trade, and the full order of 1,000 was duly accepted by the Ordnance during 1844. As can be seen from the photograph, Pattern 1842 parts were used for the furniture and general outline of the arm and the lock is of the type usually described as the 'Victorian flint lock'. However, this example is clearly stamped with the Crowned GR cypher, suggesting that this pattern of lock had been designed and manufactured prior to 1830.

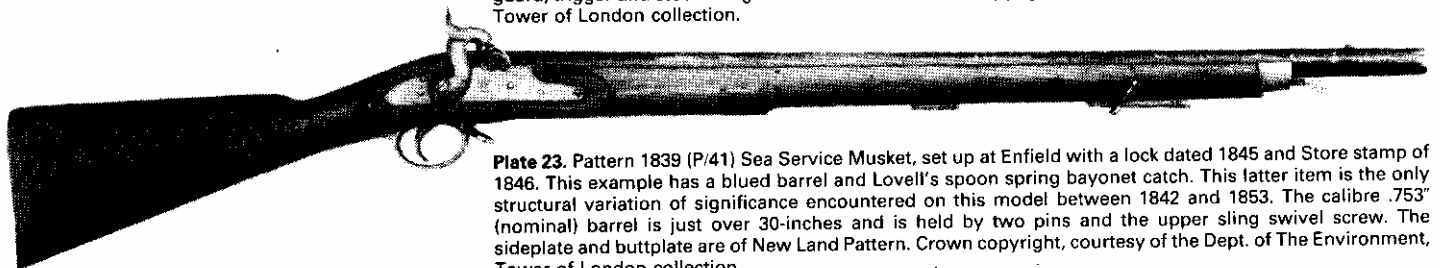
Returning to the production of percussion Sea Service Muskets, it does not appear from the complete production record shown in War Office files, that the Navy was entirely re-equipped with percussion arms before the early 1850s. The total production figure for the years 1844 to 1853 amounts to 26,961 Muskets, all presumed to be of the P/39 (P/41) design. This figure is for those muskets contracted for in the London and Birmingham trades, and it is not known what Enfield's contribution was to the production of Sea Service Muskets during this period. They may have been responsible for supplying pattern arms, but there was, judging by examples known, some production of ordinary weapons. Only a tiny proportion of the Sea Service Muskets contracted for were set up in London, the majority coming from the Birmingham trade. The supply itself was sporadic, the two largest productions being received in 1847 (10,000) and 1850 (7,500), these latter being specifically noted as having been set up from 'parts from Store'. There were no deliveries recorded for 1845, 1848, 1849 and 1851, although the Musket shown in Plate 23 has an Enfield-signed lock with date 1845, and a stock stamp dated 1846. The final delivery for smoothbored Sea Service Muskets occurred during 1853, when 3,991 arms out of 4,000 contracted for in November 1852 were received into Store.

### Rifles Afloat: I. The Brunswick Heavy Navy Rifle of 1840.

There had been no official attempts to introduce a rifled bore to the Sea Service longarm since the original designs for the Seven-barrelled Gun had been submitted in 1779, at which time only the two pattern arms were rifled, the production arms having smoothbores. There is no evidence to show that Baker rifles were a regulation issue for the Navy, but the activities of the senior service both during the French Wars and after would certainly suggest that rifles were issued for specific assignments. However, it was in the area of marksmanship while engaged at sea, rather than when operating ashore, which had always suggested to a number of officers the superiority of the rifled bore. With the general review of small arms types and styles which accompanied the changeover to the percussion system, the subject of



**Plate 22.** The last of the flintlocks: one of the 1,000 Coast Guard Muskets set up by the London trade in 1844 (this example by Barnett). The 26-inch blued barrel carries Victorian-period proofmarks, but the lock bears the Crowned GR suggesting manufacture prior to 1830, even though it is of the so-called "Victorian flint lock" design. The sideplate and buttplate are of New Land Pattern, the fore-end cap, ramrod pipe, trigger guard, trigger and stock design of Pattern 1842. Crown copyright, courtesy of the Dept. of The Environment, Tower of London collection.



**Plate 23.** Pattern 1839 (P/41) Sea Service Musket, set up at Enfield with a lock dated 1845 and Store stamp of 1846. This example has a blued barrel and Lovell's spoon spring bayonet catch. This latter item is the only structural variation of significance encountered on this model between 1842 and 1853. The calibre .753" (nominal) barrel is just over 30-inches and is held by two pins and the upper sling swivel screw. The sideplate and buttplate are of New Land Pattern. Crown copyright, courtesy of the Dept. of The Environment, Tower of London collection.



**Plate 24.** The breech area and backsight of the Heavy Navy Rifle of 1840. Beautifully made throughout, the browned twist barrel is 32 5/8-inches long, and .796" calibre, with the Brunswick two-groove rifling making 1 turn in the length of the barrel. Note that the trigger guard bow is not pierced for a sling swivel screw. Courtesy W. S. Curtis.



**Plate 25.** The breech area of the Heavy Navy Rifle of 1840, showing the false or "break-off" breech, the Enfield proofmarks of the period, and the three-leaf backsight — the most complicated backsight issued to British troops to that time. Courtesy W. S. Curtis.

marksmanship and rifles once again made its appearance. In January, 1836, the Admiralty expressed a desire for a percussion longarm which would be suitable for use by marksmen firing from the fighting tops. Lovell's first attempts involved some ordinary converted muskets, and twenty of the Seven-barrelled Guns were brought out for new trials — presumably after Ordnance conversion to percussion. Not until four years later was any decision taken.

The Brunswick two-groove rifle had been approved as the new infantry rifle as far back as January, 1837, and the first rifles were manufactured during 1838. Also during 1838 Lovell had been in France and seen the large infantry and wall-rifles then being introduced into the French service for use in North Africa. The result was an enlarged version of his own design using the Berner's two-groove system as improved by Lovell and at least one other English gunmaker by this date. Early in 1840 an example of this new rifle and the ordinary infantry Brunswick were examined by the Admiralty and accepted. One hundred of the heavy rifles were ordered and completed at Enfield during 1840, but it is not clear to what extent the infantry rifle was taken into naval service. (Plates 24, 25 and 33)

The Heavy Navy Rifle is usually found in excellent condition today, although some examples seen by the writer have been refurbished at Pimlico, mostly in the early 1860s. This suggests that although many of the 100 rifles did not see much use, others saw sufficient for them to warrant tidying-up some twenty years after issue. Returns of Small Arms in Store at home and abroad for 1861 and 1862 show that 64 of the 100 were in Store in January, 1861 (26 at home and 38 abroad), and a year later there were all but 15 accounted for, 42 at home and 43 abroad. In both cases the Heavy Navy Rifles were listed as Reserve arms, and indeed many of them seen today bear the ICR stamp on the butt.

Apart from its increased size, there are several features of the Heavy Navy Rifle which distinguish it from its infantry counterpart. Firstly, there is no provision for a bayonet, and there are no sling swivels. Secondly, the butt-trap cover is smaller than that of the infantry model. The most important differences relate to the calibre, sights and ammunition. The land diameter is .796 in., and the two grooves make one complete turn in the length of the barrel (as does the infantry model). The foresight is similar to that of the infantry model but the backsight represents the most complicated sight yet issued to British troops: the block with its vee-notch has three thin broad leaves hinged to it (Plate 25) which are sighted to 300, 400 and 470 yards, the block itself being sighted to 200 yards. The ammunition for the Heavy Navy Rifle resembled that for the infantry Brunswick, but was larger throughout. The powder charge of 3 1/2 drams of rifle powder was encased in a

### Naval Percussion Arms

The several charges of Powder are as follow:—

The musquet	{ Ball cartridge .....	4½ drams.
	{ Blank do. ....	3½ drams.
The pistol	Ball do. ....	2 drams.

The Sea Service musquet ball is the same as that for Land Service, viz: .....

14½ to the lb.

The pistol ball weighs .....

34 to the lb.

The heavy Navy rifle ball .....

very nearly 8 to the lb.

The heavy Navy rifle is loaded with blank cartridge, loose ball and greased patch. The ball is *belted* and tied up in the calico patch with a black band round shewing the belt. The cartridges are made with 3½

drams of rifle powder and packed in green paper.

The proportion of ammunition supplied for the Sea Service percussion musquet and pistol is the same as that fixed for flint locks.

The number of ball cartridge supplied for the Sea Service percussion musquet and pistol is the same as that fixed for flint locks.

The number of ball cartridge supplied for the heavy naval rifle is 150 rounds to each rifle.

The proportion of percussion caps for the Navy is five to every four cartridges, or one fourth more caps than the number of cartridges supplied. This proportion is packed with the ammunition, and, in addition, one cap is supplied for each cartridge which the materials will make up, that are to be issued for the preparation of ball and blank cartridges for the exercise of the men according to the scale inserted in the Naval Proportion.

The following implements for the Sea Service musquet and pistol are supplied in the proportion annexed:—

The three-arm nipple wrench with turnscrew, pricker and worm .....	{ 1 to every 18 musquets.
	{ 1 to every 18 pistols.
Spare nipples .....	{ 1 to every 6 musquets.
	{ 1 to every 6 pistols.
Spring cramps for the lock .....	2 to each of H.M. Ships

The implements for the heavy Navy rifle are:—

One three-arm nipple wrench, with turnscrew and pricker without the worm .....	} Supplied with each rifle
One ball drawer } carried in the rifle trap .....	
One brass jag .....	} to every 6 rifles.
One bullet mould .....	

Each rifle is also furnished with a plug-rod covered with woollen and greased, put into the barrel to preserve the interior from rust, and it should be so kept when on board ship.

By Order of the Master General and Board.  
R. BYHAM,

Secretary.

**Plate 26.** The naval section of General Order No. 1282 of 7 May 1841 relating to the "New Series of Military and Naval Percussion Arms, and their appropriate Ammunition, &c." Public Record Office, War Office 44/677, pg. 255.

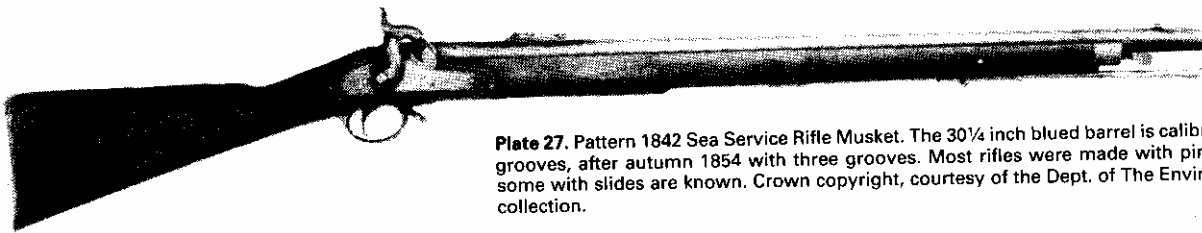
green paper cartridge, while the belted ball was wrapped in a greased calico patch which was sewn together and had a black band to mark the position of the belt for fitting into the notches of the rifling at the muzzle. The ammunition and the implements issued with the Heavy Navy rifles are described in General Order No. 1282 of 7 May 1841, the naval portion of which is shown in Plate 26.

As in the army of this period, there was no intention that the rifle should be a general issue weapon; its use was reserved to a small number of men who were specially trained in its functioning and performance, and there was an official distribution programme for rifles in the navy, as follows:

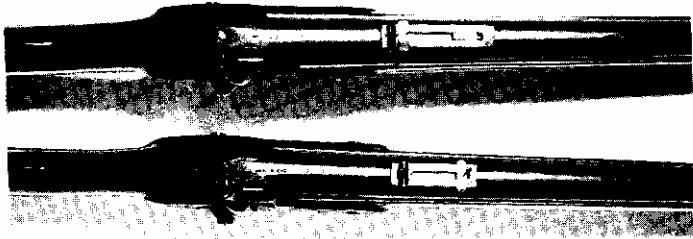
Heavy Navy Rifle: 10 to each Line of Battle Ship  
6 to frigates and sloops.

Brunswick Infantry Rifle: 20 to each Line of Battle Ship  
10 to each frigate  
6 to sloops.

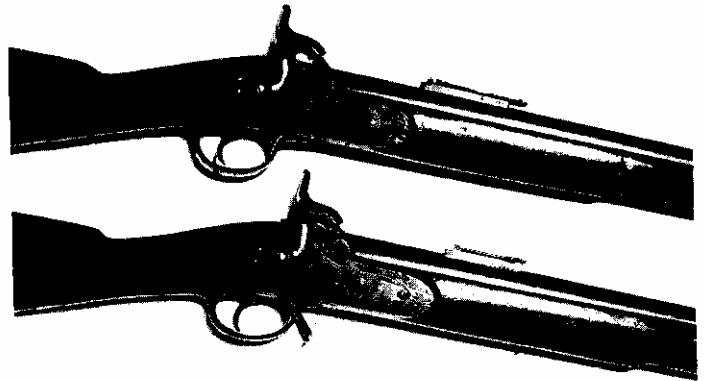
Six of the 100 rifles made were sent to HMS *Excellent* for trials. The results were hardly surprising. They were found to possess greatly superior accuracy at long range, but there was a problem with loading (attributable to any patched-ball rifle and not an exclusive fault of the Brunswick system) when compared to the musket, and the latter was preferred for close work because of its much higher rate of fire.



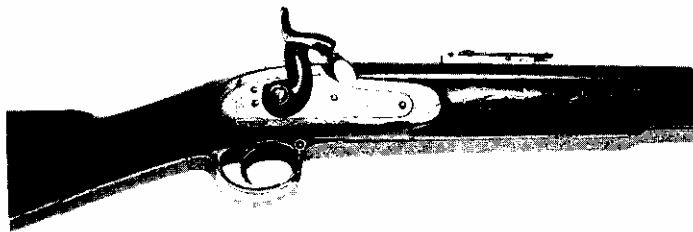
**Plate 27.** Pattern 1842 Sea Service Rifle Musket. The 30¼ inch blued barrel is calibre 758" and rifled with four grooves, after autumn 1854 with three grooves. Most rifles were made with pins securing the barrel, but some with slides are known. Crown copyright, courtesy of the Dept. of The Environment, Tower of London collection.



**Plate 29.** Detail of the backsights on P/42 Sea Service Rifle Muskets. The upper example shows the early form, while the lower is the later form, this example being dated 1857 and having 4-groove rifling. RSAF Pattern Room collection, photograph by P. Forrester.



**Plate 28.** Detail of early and late production P/42 Sea Service Rifle Muskets. The upper example uses P/42 lock and furniture, with pointed terminal to the lock surround, and the early form of 1,000 yard backsight with a leaf extending beyond the sight bed and a gap in the calibrations towards the top of the leaf. The lower rifle has P/53 lock and trigger guard, with rounded lock surround terminal, and smaller P/53-style nipple seat. The back-sight blade is shorter and evenly calibrated. RSAF Pattern Room collection, photograph by P. Forrester.



**Plate 31.** Detail of the breech area of the Altered P/42 Rifled Musket. On examples with locks dated 1851 or before the identification of this model is simplified. Notice the P/51 pattern backsight. RSAF Pattern Room collection, photograph by P. Forrester.

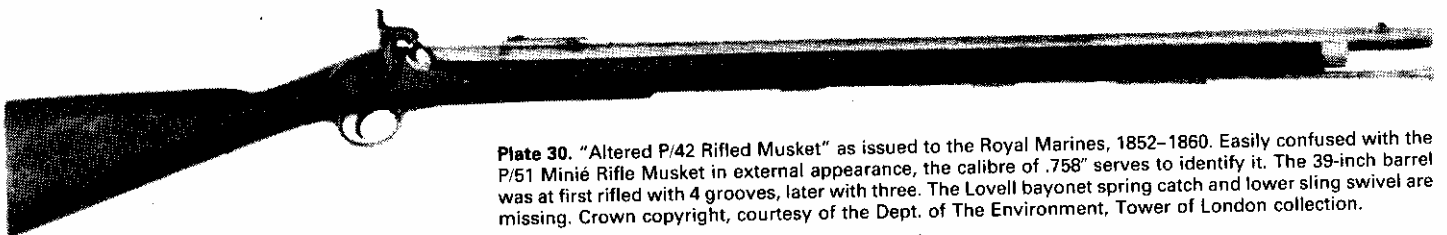
As originally distributed, the Master General of the Ordnance, the Storekeeper at Enfield, the Inspector of Artillery and the Royal Laboratory each received one example of the Heavy Navy rifle; the naval Stores at Devonport, Portsmouth and Chatham received 38, 34 and 18 specimens respectively, for issue to ships based there as required. Ultimately they seem to have found most favour and longest service with vessels serving in the Far East. A further result of the *Excellent* trials was a revision of the allocations of Heavy Navy Rifles which, by eliminating the smaller classes of ships and serving the rifles out only to Ships of the Line and down to 6th rates, emphasized the role of long-range marksmanship which the rifles were intended to fill. It is clear that these rifles were only issued from depot Stores when required by specific vessels as part of a particular assignment; they were not carried on board as a part of the ship's compliment of small arms, as were muskets and (presumably?) the infantry Brunswick.

## II. The rifle becomes general issue afloat

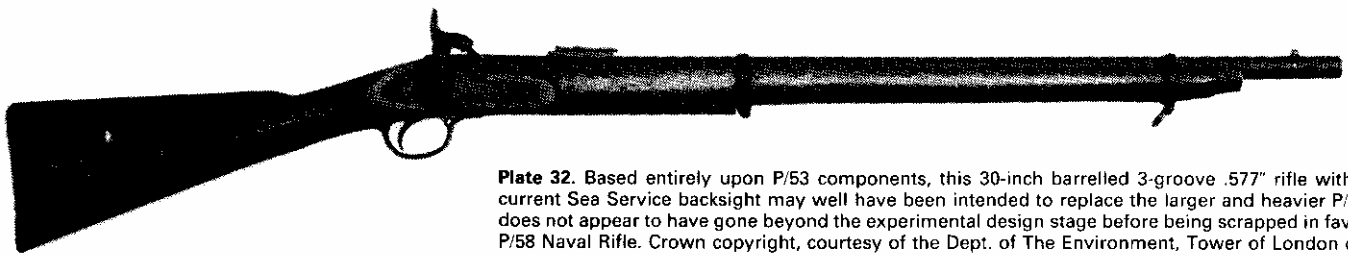
With the adoption of the Pattern 1851 Rifle Musket using the cylindro-conoidal expanding base Minié bullet, the issue of rifles to all rank and file became for the first time a practical proposition in terms of military efficiency. The changeover in the Royal Navy appears to have begun, in terms of a new model, in the late autumn of 1854, by which time the country was already at war.

The Pattern 1842 Sea Service Rifle Musket (Plates 27, 28 and 29) had the shortest issue life of any Sea Service Musket, since they do not appear to have gone into issue before 1855, and were being withdrawn by late 1859. Some P/51 Rifle Muskets had been issued for trials to the Navy and the Royal Marines in October, 1851, but at least from the Navy's point of view they were obviously too long and unwieldy; for the Marines, as it turned out, a converted arm would have to suffice. The Marines were well ahead of the bluejackets in receiving their rifles. As the result of experiments on board HMS *Excellent* early in 1852, a Pattern 1842 Musket with a rifled bore and large tangent backsight, officially known as the 'Altered Pattern/42 Rifled Musket' was adopted and the first orders placed in mid-April, 1852. The records suggest that the final orders for this Marine musket were given out just three years later, in April, 1855, and that total production was about 26,400. Plates 30 and 31 give a clear view of the overall appearance of the Altered P/42 Rifled Musket and its salient features. The calibre of .758 in. was achieved by boring up the original smooth barrel of .753 in. and the rifling was at first four grooves of P/51 Minié design, making one turn in 78 inches; after the adoption of the P/53 design, the rifling was changed to three grooves, retaining the same spiral, probably in the autumn of 1854.

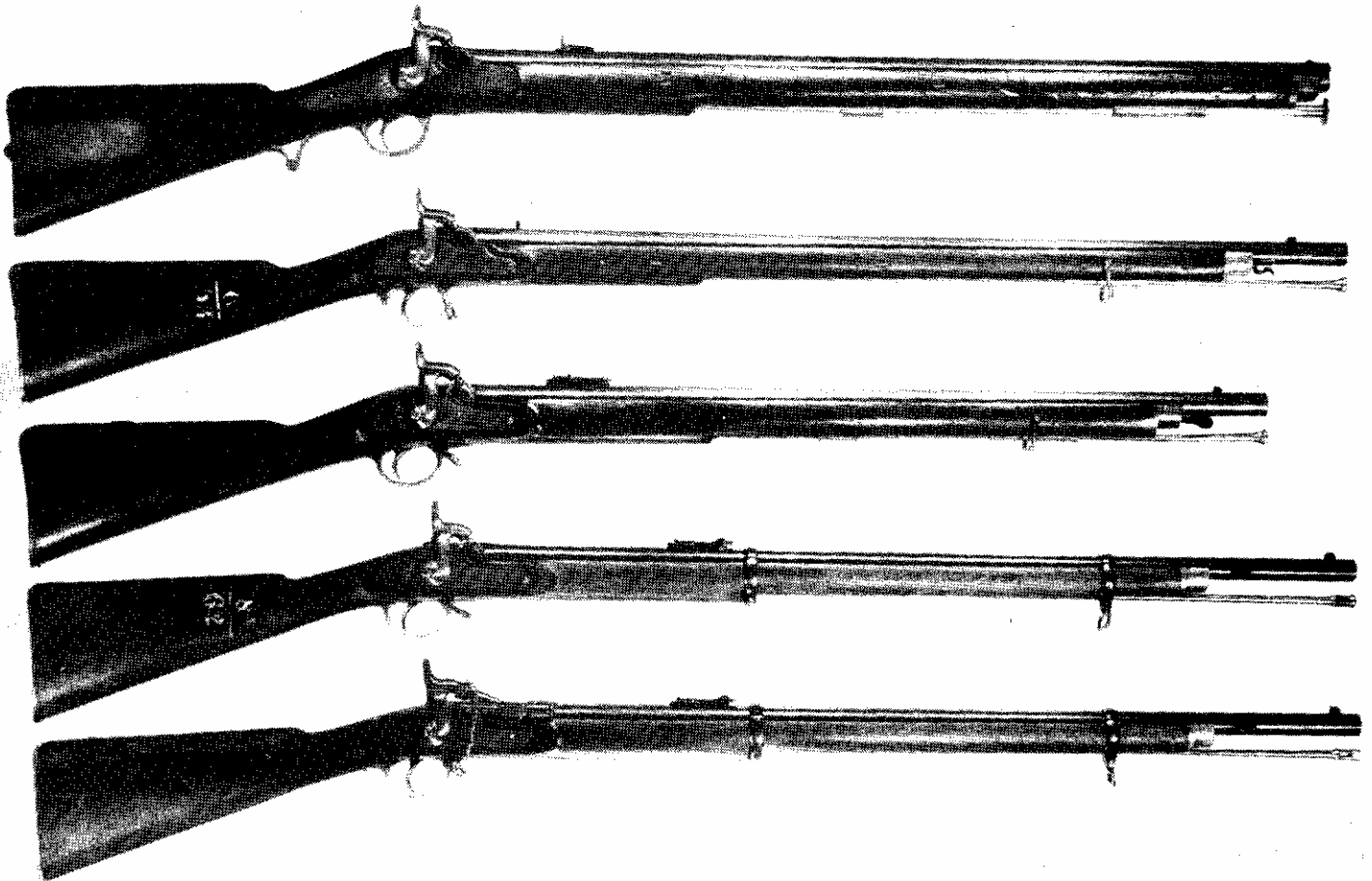
The experience gained in the conversion of the Pattern 1842 Musket led the Ordnance to select a similar process for the new pattern of Sea Service Musket with a rifled bore. The difference, and it is an interesting and important one, is that these arms, the P/42 Sea Service Rifle Muskets, are *not converted arms*. There is no evidence, either documentary or examples of weapons, to suggest that there were ever any smoothbored P/42 Sea Service Muskets manufactured. There is equally no evidence to suggest



**Plate 30.** "Altered P/42 Rifled Musket" as issued to the Royal Marines, 1852-1860. Easily confused with the P/51 Minié Rifle Musket in external appearance, the calibre of .758" serves to identify it. The 39-inch barrel was at first rifled with 4 grooves, later with three. The Lovell bayonet spring catch and lower sling swivel are missing. Crown copyright, courtesy of the Dept. of The Environment, Tower of London collection.



**Plate 32.** Based entirely upon P/53 components, this 30-inch barreled 3-groove .577" rifle with the then current Sea Service backsight may well have been intended to replace the larger and heavier P/42 type. It does not appear to have gone beyond the experimental design stage before being scrapped in favour of the P/58 Naval Rifle. Crown copyright, courtesy of the Dept. of The Environment, Tower of London collection.



**Plate 33.** Rifles Afloat, 1840-1870. a. The Heavy Navy Rifle of 1840. b. Pattern 1842 Sea Service Rifle Musket, 1852-1859. c. Pattern 1858 Naval Rifle, 1859-1867. d. P/58 Naval Rifle converted to Pattern I Snider breech-loader, using the Pattern II++ action. Use of the square-tipped ramrods ceased late in 1868. Crown copyright, courtesy of the Dept. of The Environment, Tower of London collection.

that the new navy rifle was made from cut-down or rejected P/42 Musket parts, although this is entirely possible. The parts used throughout, excepting the specially designed backsight (Plates 28 and 29) are standard P/42, with the barrel having the same calibre and rifling as the Altered P/42 Rifled Muskets, .758 in. with a twist of 1 in 78 in. As with the Altered P/42s, the earlier Sea Service Rifle Muskets have the Minié-style four groove rifling, and the later ones the Enfield-style three groove. Total production appears to have been 25,850 between 1854 and 1858, of which it is likely that about 10,000 were cut with four groove rifling and the remainder with three groove. Plates 28 and 29 show the differences in construction between early and late P/42 Sea Service Rifle Muskets, occasioned by the general adoption of a new lock and overall design for British service longarms with the Pattern 1853.

Plate 32 shows a rifle which may have been designed as the Pattern 1853 version of the Sea Service Rifle Musket. The 30-inch barrel with .577 three-groove rifling, and the Sea Service backsight strongly suggest this explanation. It was set up by D. W. Witton and is dated 1855.

In the general search for a modification of the 39-inch barreled P/53 Rifle Musket which would be more manoeuvrable and somewhat more reliable in its accuracy, the Pattern 1858 Naval

Rifle was created. The pattern arm was approved in November, 1857, and as produced was doubtless the finest rifle in British service for the entire black powder period. Its heavier barrel, five-groove progressive depth rifling and more rapid spiral of 1 turn in 48 in. certainly made it the most accurate rifle in issue, and the design and placement of its sights gave it great superiority over the infantry version. The lock was of the standard P/53 type rather than the more expensive P/56 double-freedom variety, and the stocks were of sapwood. A small number of P/58 Naval Rifles have the lower sling swivel located on the underside of the butt in a similar manner to the P/56 and P/58 Short Rifles, and these were for issue to the Royal Marine Artillery, who also had their own style of sword bayonet as opposed to the Navy which received a cutlass bayonet for the P/58 Naval Rifle.

Total production of the P/58 Naval Rifle between its commencement in December, 1858, and its termination in March, 1864, amounted to 78,726, of which 30,000 were made in Liège and 2,280 at the RSAF, Enfield. Birmingham received most of the balance. Regardless of other similarities to the infantry Short Rifle series, the P/58 Naval Rifle (Plate 33) can always be recognized by its brass furniture, and almost always by the location of the lower sling swivel on the front of the guard bow.