



Incorporated

NEW ZEALAND PERMANENT FORCE OLD COMRADES ASSOCIATION INC

PO BOX 33 710, TAKAPUNA, AUCKLAND 9

NEWSLETTER No 77

March 1993

A Registered Publication

SUBSCRIPTIONS: Are now due for 1993. Honorary and Life Members pay no subscription. Lady Associate Members pay \$2-50. All other members pay \$5. By Rule 4F any member over three years behind with subs may be struck off strength. The amount you owe to make you financial until 31 Dec 93 is given below. If no amount is shown you are financial and need worry no more until 1994. You owe us \$ . . . . .

LAST POST:

- 1922 L.H. (Laurie) Humphries, 5 Apr 90, at Whangarei.  
22817 Captain J.B. (Jack) Tankard, 2 Jan 93, at Auckland (Hon. Member)  
1532 Captain A.J. (Jack) Baigent MBE, 5 Mar 93, at Raumati South.  
(Life Member).  
1585 Captain W.K. (Bill) Baker, 7 Mar 93, at Auckland.

CHANGES OF ADDRESS:

P. Christian to 6A Corlett St, Rotorua.  
R.A. Harris to 2/16 Pacific Ave, Ettalong, NSW 2257, Australia.  
Lt Col A.N. King to 16 John Downs Dr, Browns Bay, Auckland 1310.  
Col T. O'Reilly to c/o Army General Staff, Private Bag, Wellington.  
Major D.H. Rollo MBE to 17E Michaels Rd, Paraparaumu.

GUNNERS DAY SOCIAL:

The Auckland NZPFOCA Gunners Day Social will be held in the main lounge, Birkenhead RSA, Recreation Drive, Birkenhead, on Wednesday 26 May 93, commencing at 1100 hrs. The social is not restricted to Aucklanders; all members and their partners are invited. A comprehensive luncheon menu is available at \$7 (main course). If you intend coming please inform Alf Smith (Auckland/North Shore Rep) on 410 4564 or Secretary on 445 3567 no later than a.m. Monday 24 May 93.

AMENDMENTS TO NEWSLETTER 76:

To names of those attending dinner add: Harold Nicholson.  
To names of those apologising add: Charlie Anniss, Les Kitney.

NEWS FROM AROUND AND ABOUT:

Peter Christian has been posted as Chief Reporter, Rotorua Review. See changes of address.

Charlie Anniss decided this year to 'give away' the office of President, Whitianga RSA, and also Vice President of the Club. He still remembers the days when he and Hon. Sec. performed in the Wellington Police Highland Pipe Band.

Jim and Hazel Gibb, 10A Pohutakawa Cres, Raumati Beach, have had 'rather a rough year but as Jim says, as they turn 80 this year must count their

blessings.

Bob Harris sends regards to "those two great connoisseurs of Scotch Whisky, Eric Autridge and Terry Transom."

Fred and Daphne Schroder, 2/21 Clipper Court, Coffs Harbour, NSW 2450, send regards to all Old Comrades, and will extend a welcome (and a bed) to any who may visit Australia.

Congratulations to Bill Morland and George Miln who drew marbles in the ballot to travel with a contingent of 13 Navy, 13 Army, and 13 Airforce to the Solomon Islands 50th Anniversary Commemoration for the dedication of an Allied memorial at Honiara during the period 6-9 August 1992. The contingent flew by RNZAF aircraft to Honiara, landing at Henderson Airfield on Guadalcanal. Bill says it was a momentous occasion and a wonderful experience.

Ashley King reports he is glad to back on North Shore. He deplores the number of recent Last Posts, but is in good health himself except for arthritis - which seems to catch many in the post-World War 2 age group.

Les Kitney is active in the North Shore Performing Arts Competition Society whose functions clash with those of the Old Comrades. Les says when he gets too old to perform he will attend our reunions!

Bruce McIver, 4/47 Woodside Rd, Henderson, reports he is pretty well except for a bit of trouble with his hip joint as a result of an old injury.

The following ditty written by an RA Officer on Malta in 1939 before the massive bombing attacks by the enemy may interest old 'coasties':

"Now here is a saga  
Of people at Gargur  
Defending this island of goats  
Who sit on their bums  
And twiddle their thumbs  
And shoot at imaginary boats"

#### THE NEW ZEALAND GENERAL SERVICE MEDAL:

On 7 May 1992 Her Majesty The Queen, by Royal Warrant, instituted The New Zealand General Service Medal. The medal will be issued with appropriate name clasps and will be of silver for warlike operations and of bronze for peacekeeping operations. The Queen also approved two medals and clasps, in bronze, with clasp "Sinai", and in silver with clasp "Kuwait." The obverse bears the crowned effigy of the Queen and the reverse the inscription "The New Zealand General Service Medal" within a wreath of New Zealand flora (pohutakawa and kowhai blossom and fern fronds) ensigned by a Royal Crown. The wreath, known as the 'National Wreath,' is found on New Zealand Army Regimental colours. The medal ribbon is dark blue with a light red centre and a narrow central black stripe for warlike operations. For peacekeeping operations the narrow central stripe is white. The ribbon design is based on the New Zealand Medal issued for service during 1845-47 and 1860-66.

#### NEW ZEALAND GUNNER TRUST - GUNNER MEMORIAL - WAIOURU MUSEUM:

The Executive recently made a donation of \$300 to the Trust on behalf of members of the NZPFOCA.

THE GUN

Continued from Newsletter 76

By Wally Ruffell

CHAPTER 2THE FIRST GUN:

Fig. 2: 14th century vaso dug up in Sweden.

Approximate dimensions: Length 30 cm; Calibre 37 mm

Material: Bronze (cast).

EARLY IRON GUNS:

Guns cast from non-ferrous alloys during the first half of the 14th century were small - and expensive - so gunmakers soon began to try iron.

In Europe the technique of casting this metal was then very much in its infancy, so blacksmiths began forging guns from wrought iron. They were called 'bombards' from the Greek 'bombos' meaning a loud buzzing noise.

To construct a bombard the smith first made a wooden cylinder called a 'mandrel' of the same length as the desired piece, and of the same diameter as its bore. He then forged a number of iron bars of nearly rectangular section which he fitted closely together around the mandrel as depicted in Fig. 3A.

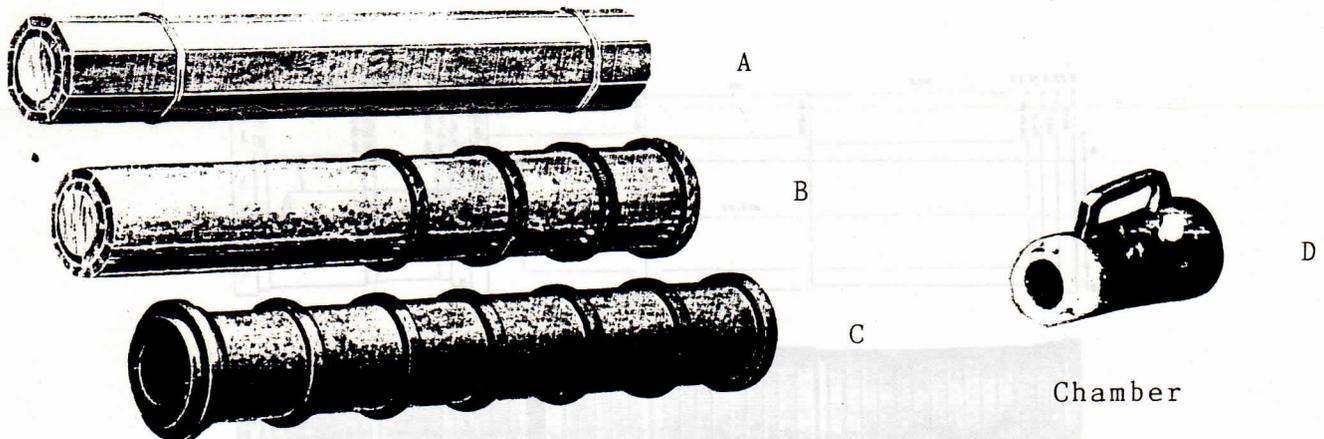


Fig. 3.

Piece

Next he made a number of rings of internal diameter slightly less than the external diameter of the bars as assembled on the mandrel. He then heated the rings to white heat and fitted them over the bars so that on cooling they contracted, holding the bars very tightly together. See Figs 3B and C.

Before fitting the rings the smith in some cases poured molten lead into the gaps between the bars to prevent the escape of propellant gas. Fig. 3 shows how a small bombard was made. With heavier types the rings were usually placed end-to-end as in Fig. 5.

The term 'gun barrel' derives from this method of construction because the bars and rings correspond to the staves and bands respectively of the common wooden barrel.

In small pieces instead of bars the smith sometimes bent a sheet of iron into a cylinder, welded the edges together, and shrunk rings around it in the same way as in Fig. 3.

Bombards, especially those on which the rings were placed end-to-end, were thus pre-stressed in much the same way as built-up guns made five centuries later. Whether or not the makers realised this fact is not known.

As the piece was built up on a mandrel it was open at both ends. Hence lighter types were made breech-loading, the makers fully realising the advantages of this system over muzzle-loading. The breech was in the form of a separate chamber (Fig. 3D), into which the powder charge was loaded, the open end being closed by a wooden plug. Then the shot was loaded into the barrel, the chamber inserted behind it, and kept in place by a wooden wedge as shown in Fig. 4. A fresh plug was required for each round.

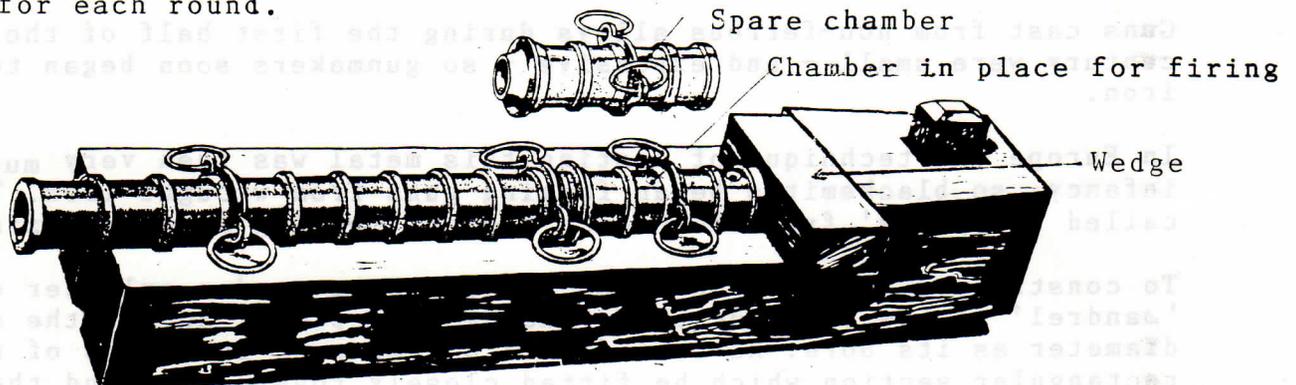


Fig. 4. Drawing of naval gun from the Mary Rose which sank in 1545, on its 'trunk,' i.e. what passed for a carriage in those days.

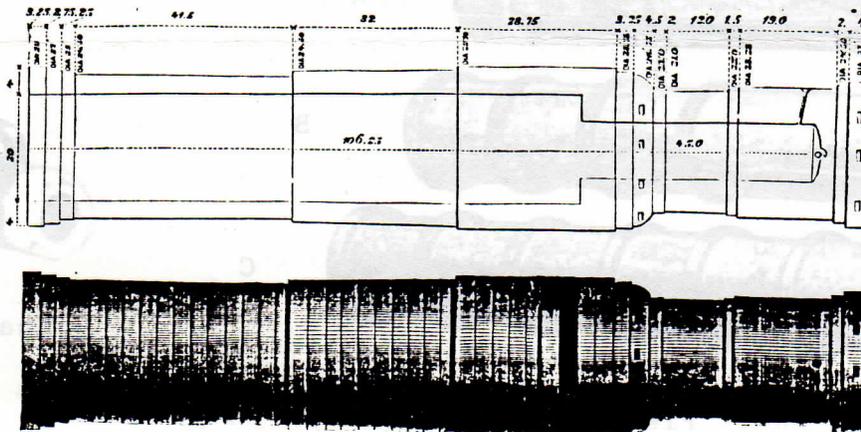


Fig. 5. The great bombard 'Mons Meg' so-named because it was built at Mons in 1449, showing method of construction of larger bombards. Dimensions are in inches. She weighed 5 tons and fired a stone shot of about 300 lbs (136 kg). Now at Edinburgh Castle.

Smaller guns were usually supplied with one or more spare chambers which enabled a high rate of fire to be maintained for short periods. Heavier pieces of large calibre were muzzle-loading, a single chamber being screwed on to the barrel or otherwise attached to it. Mons Meg's chamber (Fig. 5), is screwed on to the piece.

In the early breech-loading gun no matter how carefully the smith shaped the end of the chamber and the mouth of the breech into which it fitted, he found that efficient obturation, i.e. prevention of escape of propellant gas over or through the breech mechanism, was extremely difficult to achieve; some gas inevitably escaped, even in a new piece. As wear progressed more and more escaped, reducing efficiency as well as making life very uncomfortable for the Gunner. The problem of obturation was not effectively solved until late in the 19th century.

Until trunnions were invented in Flanders c. 1450 no early guns were fitted with them. Despite their obvious advantages gunmakers long continued to omit them from wrought iron pieces because they complicated construction.

By the end of the 15th century ML guns of cast non-ferrous alloys were fast superseding those of forged iron. A few BL pieces were made of these alloys but ML types predominated. No more forged iron guns were made after about 1520.

Although not so easy to load, ML guns had no obturation problems, while the bores of cast pieces were trued on a boring machine after manufacture which was not the case with forged pieces. Thus cast pieces tended to be more accurate.

Furthermore, trunnions could be cast integral with the piece, i.e. did not have to be made separately and somehow attached to it as illustrated in Fig. 6.

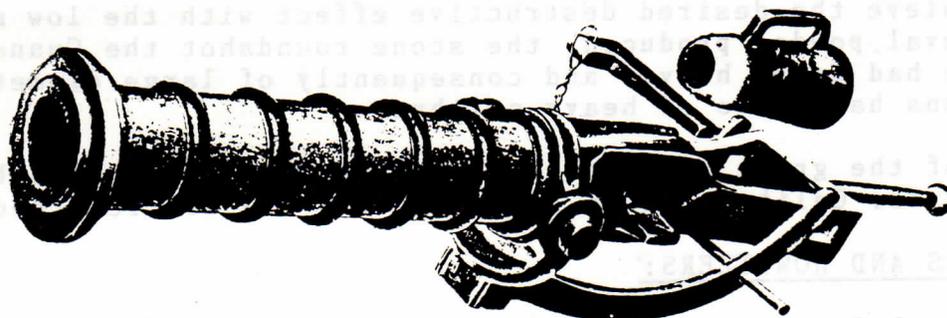


Fig. 6. Late 15th century forged iron 'wall piece' i.e. designed for mounting on walls of castles or bulwarks of ships. Trunnions have been made separately, the trunnion ring being shrunk on to the barrel. The breech 'mechanism' is an improvement on the earlier Fig. 4 type, being entirely of iron and more positive in action.

As far as we know guns of cast iron were first made in Italy towards the end of the 15th century, probably the oldest still in existence having been made by a member of the Albergetti family who operated in Ferrara during the period 1487-97.

In England cast iron guns were first produced in 1508-09, not in 1543 as claimed by some historians who base their assertions on an uncorroborated statement by Holinshed, a 16th century chronicler who 'enjoyed a great reputation.' 'Cast iron' evidence confirms 1508-09.

Cast iron guns were favoured by the war lords because they were comparatively cheap, but not by the Gunners because they had a habit of bursting without warning often with fatal results. On the other hand bronze guns usually forecast failure by first developing a bulge.

I shall have more to say about guns cast in both iron and non-ferrous alloys in a later chapter.

### GUNMAKERS THINK BIG:

Up to around 1400 the largest guns on record whether forged from iron or cast from 'brass' did not exceed five inches (12.7 cm) in calibre. These pieces were useful in the anti-personnel role only; against fortified works they were comparatively ineffective.

Now mediaeval warfare frequently involved sieges of castles or other fortified works. When confronted with such a work the attacker could choose: either surround it and starve the occupants into submission, or make a breach in a wall, send in a storming party, and settle the issue by combat. If time was short - and the garrison had provisions enough to prolong the outcome - the second choice was often preferable.

The old mechanical 'engines of war,' e.g. ballista and catapulta, the ancient equivalents of gun and howitzer respectively, were ponderous and complicated contraptions, slow to set up, and slower still to make an impression on heavy masonry. On the other hand the gun was comparatively simple to bring into action and man - if only its power could be increased.

So early in the 15th century leading military men who were artillery-minded directed their gunmakers to build battering pieces capable of punching holes in stone walls. The same men who forged the smaller wrought iron bombards described above found making the heavier no more difficult. Indeed in some respects they found them easier for their size provided more 'hammer room.'

To achieve the desired destructive effect with the low muzzle velocities mediaeval powder produced, the stone roundshot the Gunners were obliged to use had to be heavy, and consequently of large diameter. Therefore the guns had to be of heavy calibre.

Some of the great bombards constructed were large even by modern standards. Calibres up to 36 inches (91 cm) are recorded.

### MORTARS AND HOWITZERS:

Mediaeval Gunners were also well aware of the damage a heavy stone shot could do to buildings etc within a fortress when lobbed over the wall at high angle.

In addition the first incendiary shells were produced in 1460.

Both mortars and howitzers of large bore and short barrel were therefore made at the same time as the heavy bombards designed for battering purposes.

Fig. 7 shows a 15th century mortar on a mobile carriage (which dates it between 1450 and 1500).



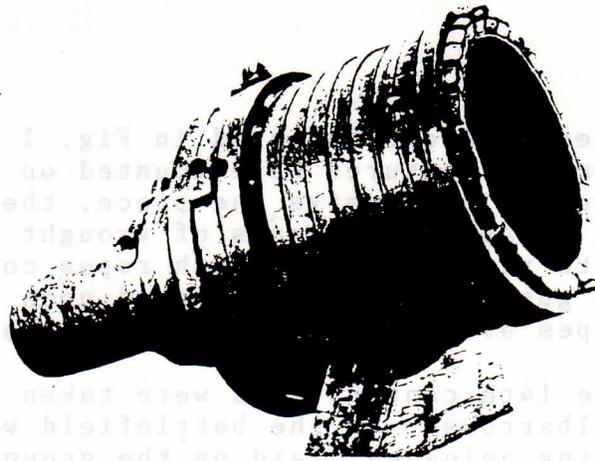
Calibre: 6.8 inches (17 cm)

Length of barrel: 15 inches (38 cm)

Material: Wrought iron.

Weight: 81 lbs (37 kg)

Fig. 7.



Calibre: 35.2 inches (89 cm)

Length: 99 inches (2.51 m)

Material: Wrought iron.

Method of construction can be clearly seen: bore is formed from sheet iron with bars and rings built up as in smaller bombards.

Like the heavier bombards mortars and howitzers were muzzle-loading.

Fig. 8. 15th century howitzer, sometimes called a 'perrier,' i.e. 'stone thrower.'

#### STANDARDISATION OF ORDNANCE:

In the very beginning before artillery became organised the manufacture of guns was a pretty haphazard business. Each maker would produce a gun designed according to his own personal whim or fancy. No attempt was made to standardise during the 14th century

When the King went to war he hired both the gun and its maker who manned it in action. Thus the first Master Gunners were master smiths or master founders; they were not soldiers but civilian tradesmen.

Master Gunners 'christened' individual pieces with names (mostly female which reflected their efficiency or otherwise, such as "Lioness" or 'Lazy Girl,' or after the place of manufacture, e.g. 'Mons.' The 'Meg' part of Mons Meg was added in the 16th century. The Scots called her 'Mounts' or 'Mounce' and were very proud of her because she was bigger than any gun the English had. A saying common in Scotland in her time was '... the devill shoote Mounts in your arse,' the meaning of which is clear. We shall see more of her in the chapter on carriages to follow.

By the early 1400s there had evolved types of pieces most of which were named after fabulous beasts or birds of prey, chief of which in descending order of size and calibre were: basilisk (8.75 inches), cannon (6 to 8.5), culverin (4.5 to 5.5), saker (around 3.5), minion (3.25), falcon (2.5) and falconets (around 2 inches).

But there were variations within these types in both size and calibre. For example there were three sakers, a larger (8-pr), an ordinary (6-pr) and a smaller (5-pr). Where a gun seemed to belong to a certain type but was a bit odd it was called a 'bastard.' And there were bastards in most types!

Besides those types quoted above there existed a host of others e.g. slings, murderers, flankers, shrimps, orgues, aspics, sparrows, etc etc details of most of which have long been lost.

That the situation in battle was chaotic must be the understatement of all time. Not only were there large numbers of guns in either army of greatly differing calibres, such technicalities as tolerances in dimensions were quite unknown. Thus the supply of ammunition must have created the father of all headaches!

Not until the 17th century did things really improve with the designation of ordnance being placed on a sounder footing. We shall look at this aspect in a later chapter.

CHAPTER 3;CARRIAGES.

Early guns had no carriages; the one depicted in Fig. 1 lies on a trestle table. Next the smaller natures were mounted on 'trunks,' i.e. heavy baulks of timber grooved to receive the piece, the latter being retained in place by iron straps. Later guns of wrought iron (and some of bronze) were fitted with rings through which ropes could be passed for the same purpose. The gun in Fig. 4 is mounted upon a 'trunk.' Rings for holding-down ropes are shown but not the ropes themselves.

Up to about the end of the 14th century guns were taken in ordinary farm carts - or even wheelbarrows - to the battlefield where they were brought into action by being unloaded, laid on the ground in the general direction of the target, elevated by being propped up by wooden stakes or other pieces of timber, and chocked at the rear to absorb recoil as shown in Fig. 9. In some cases the trunk with its gun was dragged along the ground like a sledge.



Fig. 9, showing how some early iron guns were brought into action.

For some of the heavy guns made in the 15th century four-wheeled carriages were especially built but these could not stand the shock of firing. The gun, with or without trunk, still had to be unloaded and laid on the ground, for which purpose the use of a gin (sheerlegs) was necessary. Mons Meg's carriage ( a replica of the original) is a typical example. See Fig. 10.

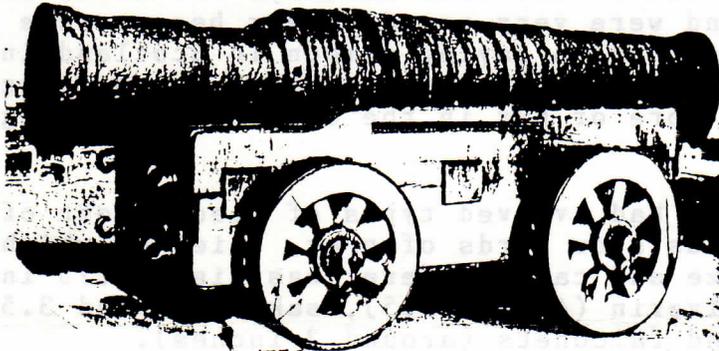


Fig. 10, showing Mons Meg on a replica of her original carriage.

The rent in her side was made in 1680 when firing salute to the Duke of York. After 230 years' service she was finally retired! The Scots blamed the Gunner - who was an Englishman -

for the mishap.

The modern term 'to lay' a gun probably derives from the ancient practice of laying a gun on the ground.

Eventually Gunners realised the advantages of a gun which could be fired from its carriage as well as merely being transported upon it. The first two-wheeled travelling carriage embodying the same basic features as a modern field artillery carriage, i.e. trail, axletree and wheels, appeared in France in 1461. Until about 1450 guns had no trunnions so the piece had to be secured to the trunk as explained above while the trunk itself was hinged to the front of the trail so it could be elevated or depressed. A typical example is shown in Fig. 11.

To be continued.