



Incorporated

NEW ZEALAND PERMANENT FORCE OLD COMRADES ASSOCIATION INC

PO BOX 33 710, TAKAPUNA, AUCKLAND 1309

NEWSLETTER No 85

March 1995

A Registered Publication

SUBSCRIPTIONS for 1995 are now due. Honorary, Life, and any member over 80 years of age pay no sub. Lady Associate Members pay \$2-50; all other members pay \$5-00. By Rule 4F any member over three years in arrears may be struck off strength unless there are extenuating circumstances, in which case Secretary should be informed. To be financial to 31 Dec 95 you owe us \$. . . . If no amount is shown you are financial.

CHANGES OF ADDRESS:

Lt Col M.D. Beattie RNZA to 16 Field Regiment, ATG, Waiouru.
Lt Col R.L. Cross to 19 Garden Heights Ave, Glenview, Hamilton.
Capt M.F. Dakin to 23 Reynolds Place, Torbay, North Shore City.

GONE NO ADDRESS:

Capt J.E. Fitzgerald
Bdr P. Storey

LAST KNOWN LOCATION

32 Chapman St, INvercargill.
3 Lonsdale Cres, Rongotai, Wgtn.

Anyone knowing whereabouts of above please inform Secretary.

NEW MEMBERS:

(Robin)

K30139 Major General R.H.F. Holloway, CB CBE, 435 Te Moana Rd, Waikanae.
1783 G.M. (George) Joseph, 35B Birdwood Cres, Parnell, Auckland 1.
Mrs H. (Helen) Parkes, PO Box 124, Leigh (Associate).

LIFE MEMBER:

1717 J.J. (Joff) Adams, wef 2 May 95.

COMMITTEE MEETING:

The next will be held on Saturday 8 April 95 in the main lounge of the Birkenhead RSA, Recreation Drive, Birkenhead, Auckland. Any non-committee members welcome.

GUNNERS DAY SOCIAL:

Will be held on Wednesday 24 May 95 in the main lounge of the Birkenhead RSA. All members welcome. Comprehensive luncheon menu available at \$7. Members intending to be present please contact Secretary by 22 May 95. Phone 09/445 3567.

REUNIONS:

161 Battery (Original Korea) Ormonde and Ganges at Auckland 20 May 95. For further information contact Phil Ward, 34 Fergusson Ave, Mt Albert, Auckland 3. Phone 09/846 2759.

14 LAA Regiment. Registration with \$10 fee now being received for 1995 National Reunion in Wellington 23-24 September. Further details from Acting Secretary Doug Alexander, 49 Tui Rd, Raumati Beach, Ph 04/2984342.

NZ Korea Vets Assn 14th National Reunion, Blenheim, 3-6 May 96. Reunion Secretary Les Pye, PO Box 21, Blenheim, Ph 03/578 2966.

3NZ Div Assn National biennial reunion 18-19 Oct 95 at Palmerston North RSA. Further info from Mrs Bet Allen, 117 Denbigh St, Feilding. Phone 06/323 6487.

COPIER PAPER:

For the last three or four years we have been using paper very generously donated by members, but now it is all gone. Any further donations of A4 80 gram paper will be gratefully received.

GRANT FROM LOTTERY GRANTS BOARD:

The Board has been pleased to grant us \$1000 towards the purchase of a new copier, as spare parts for the one in use are now hard to find, and it is becoming unreliable. We asked for \$4275.

ASIAN DEFENCE JOURNAL (ADJ):

Members interested in the defence forces of South East Asian forces and defence industries in those countries are advised to subscribe to this journal which is published monthly. Annual sub \$US150 (\$280 for two years, \$380 for three). Write to Syed Hussein Publications SDN BHD, PO Box 10836, 50726 Kuala Lumpur, Malaysia. It is expensive but very well presented. Suggest share with another member/s.

H.P. BOOKFINDERS, 6 Clerkenwell Cottages, Haddenham, Bucks HP17 8BJ, England, undertake to obtain just about any book long out of print.

BOOK REVIEW: H.J (Teach) Macown, 68 Umuroa St, Mamaku, Rotorua, recommends the following book: BATTLE DRESS, by 'Gun Buster' published by Hodder & Stoughton, 1941. It is a collection of Gunner stories set in Europe prior to Dunkirk. Descriptions of equipment and Gunner language are accurate and amusing to the present-day Gunner.

NEWS FROM MEMBERS:

Lieutenant Colonel M.D. (Matt) Beattie, who assumed command of 16 Field Regiment RNZA, in January, writes:

6 Mar 95

"I thought I would take the opportunity to update the association on recent comings and goings in 16 Field Regiment. I took command in January of a fine unit, recently proved in both gunnery and sport. We are a competitive outfit and are very proud of our heritage, maintaining contact with regimental associations and veterans' associations throughout New Zealand and overseas.

In May 1995 we host 5 Field Regiment for Gunners Day and I am happy to widen the invitation for other 'old and bold.' Allan Boyd is the contact in Auckland.

RSM Ian Foster left for Bosnia last week and we wish him well. As the Bosnia commitment continues, RNZA personnel will deploy on an increasing basis to meet the Army's needs.

Our new air defence troop comes on line soon. It will be a missile system with a night fighting capability. Look for an update in the newspapers towards the end of the year.

Regards,

Matt Beattie."

Colin Andrews, Chairman, North Shore Business Association, is at war again, this time versus the North Shore City Council. His address is: 26 Pine Ridge Tce, Takapuna, Auckland 9.

Terry Arnott, 24 Surfdale Rd, Waiheke Island, kindly offered to take a party of Old Comrades on a tour of the island during January. Joe Hanvey, Harry Anderson, Joan and Les Wilson, and Dan and Dorothy Foley took advantage of the offer and had a very enjoyable day

Our condolences go to Tom Swift, UNit 2/1, Bellcroft Place, Takapuna, who recently lost his good lady, Peg.

Roger Wylde, 1/13 Ranfurly St, Upper Hutt, is just back from 14 days caravanning in the Wairarapa and Manawatu districts. He and his good lady will be celebrating their 41st wedding anniversary with a trip to Norfolk Island for eight days in April. WE wish them well.



In the mood: Cpl Anderson strikes up a tune on the barrage-o-phone with the help of trombone player Cpl Mike Fitzpatrick and trumpet player Lance-Cpl Peter Young. PICTURE: ROD TAYLOR

Jock Gunn's son sent this press photo from Perth. It is the Oz Army's 'secret musical weapon' made of empty 25-pr cartridge cases and although its range of notes is limited, Cpl Anderson recently soloed during the William Tell Overture. Jock maintains it would sound better if the cartridges were live!

Jock, 1/289 Richardson Rd, Mt Roskill, Auckland 4, recalls that during World War 2 he had a 25-pr smoke shell (empty) cut and shaped to fit between the centre of the firing platform and the axle of his gun to prevent the platform lifting. A typical Kiwi innovation.

Angus Rivers asks: "is anyone thinking of putting our years of unofficial histories etc into a book?" Any offers?

Jim Gilberd, 54 Tom Parker Ave, Napier, our Immediate Past President, recently reverted to Limber Gunner to carry out maintenance on the Napier RSA M1956 Italian 105-mm howitzer. He says the job "took him back a year or two!"

Ian Cunningham, 14 Charlotte St, Roslyn, Dunedin, has been keeping close to home looking after Ethne who suffered a broken femur and a third hip replacement last April. He says he has heard Hoki Stuart is Acting RSM of the Montecillo War Veterans Home, sends regards to all Old Comrades, and hopes to attend a reunion 'one of these years.'

Condolences are due to Herb Milne, 1/64 Bentley Ave, Glenfield, Auckland 10, who recently lost his good lady Doris.

Secretary trusts all members have bought a ticket in the raffle to raise funds for the QEII Army Memorial Museum, Waiouru. Most RSAs will have tickets which are \$10 each. First prize: A Mercedes Benz C series 180, retail value \$82,560; second: return air fares to UK; third, fourth and fifth each a Xerox 5730 Copier plus a xerox Smallfax III. Value for each package \$4297. Total prize value \$111,798.

GUNNERS DAY TRIP TO WAIOURU:

Any Gunner interested in a bus trip to 16 Field Regiment on Gunners Day, 26 May 95, to contact Allan Boyd on 09/817 7811, as soon as possible. Bus leaves Takapuna 0615. Cost for two days \$80.

THE GUN

By Wally Ruffell

CHAPTER 4;

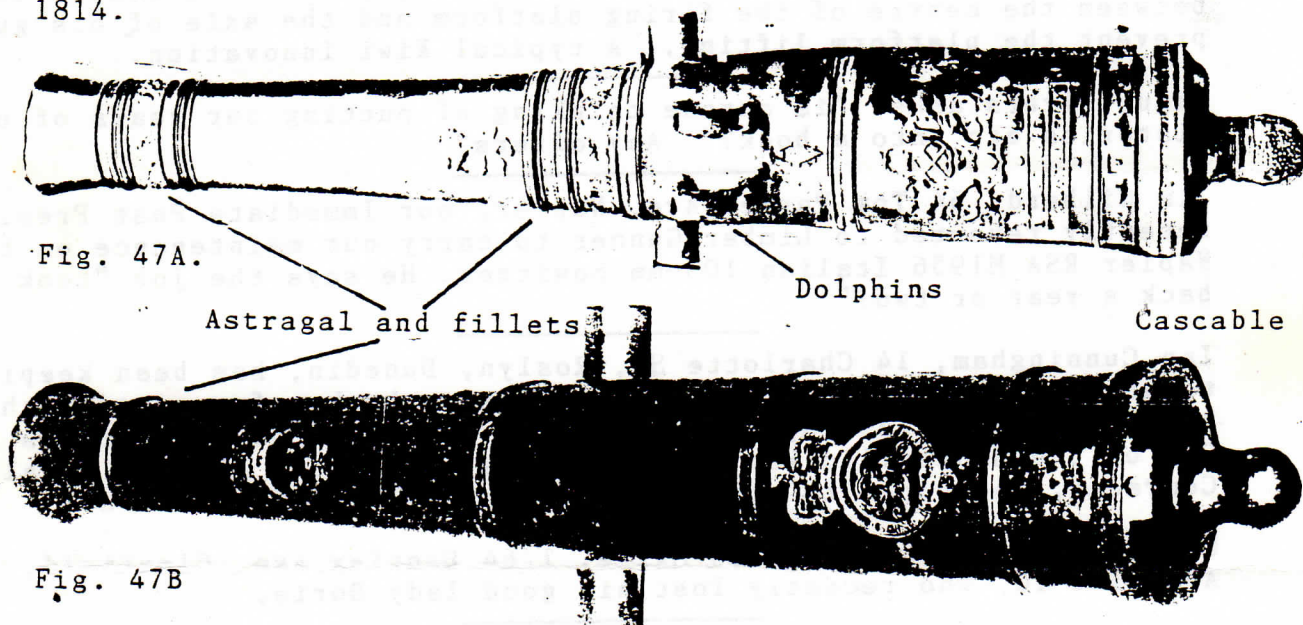
GUNFOUNDING: (Continued from Newsletter No 84)

After the complete mould had been made ready to take the molten metal it was placed breech end down in a pit adjacent to the furnace and surrounded by tightly rammed earth for its entire length. The molten metal was then run into the mould to the top of the dead head. Twenty four hours after the pour mould and casting had cooled sufficiently to permit their being dug out and removed from the pit.

Further cooling enabled the staves and hoops to be removed. The mould material was then broken away from the casting, the latter being cleared of rough burrs and crust with hammer and cold chisel, after which the dead head was sawn off. Thus each mould could be used once only.

ORNAMENTATION:

With the exception of decorative bands called 'astragals and fillets' the 18th century gun shown in Figs 45 and 46 featured no embossed, i.e. raised, decorations but earlier ordnance frequently included them in abundance. Indeed, many pieces were considered works of art, and still are. Compare the two guns in Figs. 47. That in 47A was cast in 1614, and includes dolphins (described below), while the other was made in 1814.



Decorative designs in Fig. 47A are embossed while those on 47B were incised or engraved after proof.

But works of art are often expensive, especially when skilfully executed. Models of the embossed features had first to be carved in wax, then carefully attached to the main model. During the removal of the latter from the mould heat was applied to melt the wax, thus leaving cavities of the required shape later filled by molten metal. Not only was the production of these decorations expensive, it was also time-consuming, requiring the employment of highly skilled artists - nor did they make the slightest difference to the ballistic performance of the gun. Also embossed decorations hampered machining operations because where they occurred the piece could not be turned but had to be planed. Lastly, if the gun failed at proof they cost was 'money down the drain' as it were.

Common sense eventually prevailed; with the exception of astragals and fillets, many of which were simplified or dispensed with, embossed

decorations had largely disappeared by the 18th century, and no marks of any kind appeared on a gun before proof. If it passed proof necessary markings only were engraved on the metal, i.e. cut with hammer and chisel. They were usually limited to the Royal Monogram, weight, date of manufacture, the 'broad arrow' (signifying Government ownership and the register number. On 'brass' ordnance the monogram of the Master General of the Ordnance (after 1855 the Secretary of State for War), was also engraved on the chase. Thus if the gun failed proof much less time and money were wasted than with the older system.

As iron gradually superseded bronze guns became even plainer because in casting iron did not lend itself so well to the reproduction of intricate designs, particularly of an embossed nature. Essential marks only were engraved after proof.

A feature of early guns was the incorporation of lifting handles at the centre of gravity called 'dolphins' which animals they were made to resemble. They had first to be carved in wax as with other embossed decorations already mentioned. However, Gunners at last realised that one end of a sling around the cascable and the other round a piece of skidding inserted in the muzzle was a better way to lift a gun. Lifting handles were soon made plain, i.e. lost their dolphin shape, and by the end of the 18th century were becoming rare.

GUNFOUNDERS THINK BIG:

As casting superseded the wrought iron built-up system of ordnance construction around 1520, Gunners demanded cast guns in similar calibres, including examples capable of handling the huge stone shot still in vogue for siege operations. As the technique of casting iron was still in its infancy in western countries, heavy pieces were cast in bronze or similar alloys e.g. 'latten,' a type of brass. Some very interesting pieces resulted.

While besieging Constantinople in 1451 the Turks actually cast a number of guns on the spot! They were about 17 feet (5.18 metres) long, of 25 inches (63.5 cm) calibre, and threw stone shot of about 676 lbs (306.6 kg). They remained serviceable for almost 400 years - to the chagrin of the Royal Navy, ships of which suffered significant damage as well as several casualties in 1807 while attempting to force the Dardanelles where some of the guns had been mounted. See Fig. 48.

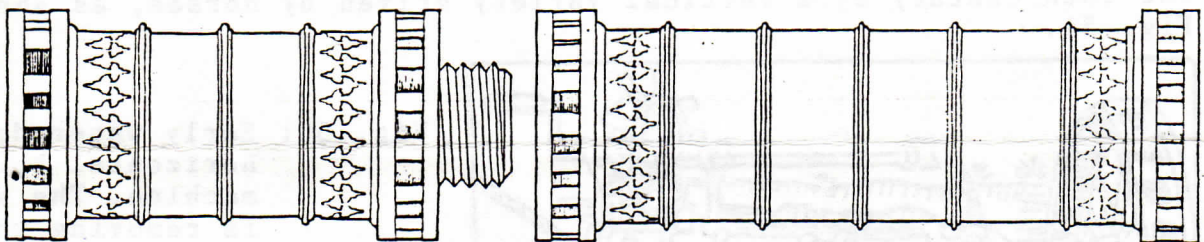


Fig. 48: One of the Dardanelles guns now at the Tower of London. Made in two pieces which screwed together both for ease of manufacture as well as transport, it is recorded that when unscrewed the threads were as clean and sharp as they must have been when the gun was first made. How the threaded portions were crafted centuries before the invention of the heavy screw-cutting lathe is most intriguing. The gun weighs a total of 16 tons 16 cwt (17.069 tonnes).

Another great piece called 'Mukh-el-Maidan' (Master of the Plain), cast at Ahmednuggar, India, in 1548 by a Turk was of 28.5-inch (72.39-cm) calibre and fired a 1000-lb (455-kg) shot with an 80-lb (36-kg) charge of powder. Last fired during the 18th century, legend records that all pregnant women in the vicinity miscarried!

The largest gun ever made (until 1944) was the 'TSar Puschka,' the Great Gun of Moscow, cast in 1586. Of 36-inch (91.4-cm) calibre, it would have fired a shot of around 2400 lbs (1091 kg), although there is no record of its ever having been fired. See Fig. 49.

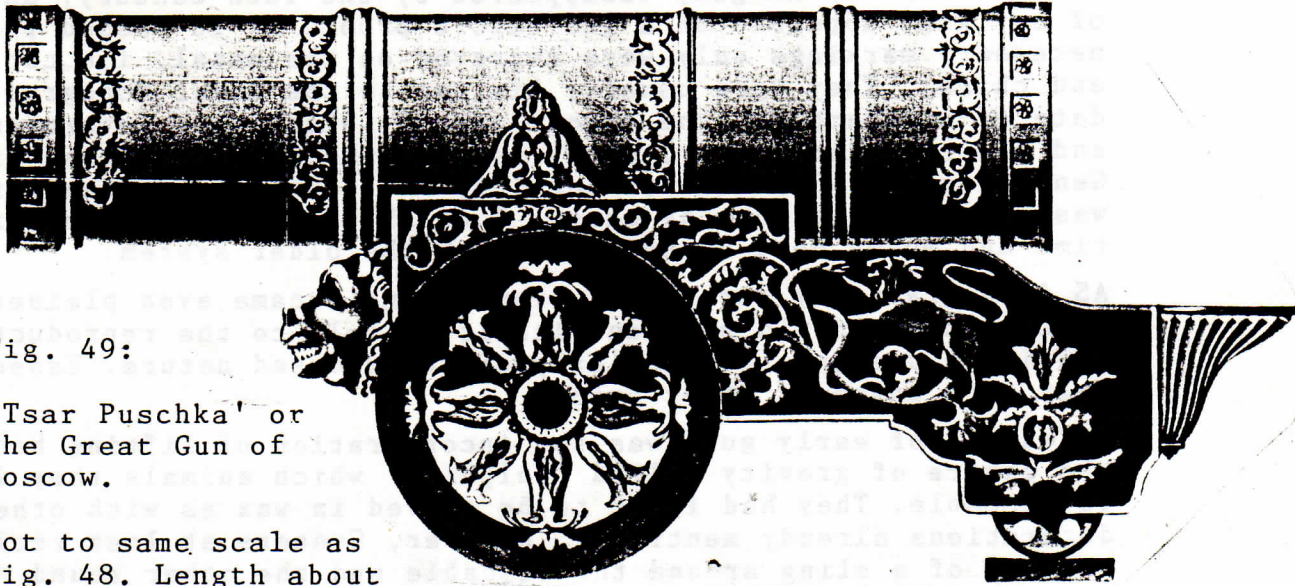


Fig. 49:

'Tsar Puschka' or
The Great Gun of
Moscow.

Not to same scale as
Fig. 48. Length about
5 metres, Calibre 36 inches (91.4 cm).

MACHINING OPERATIONS:

Prior to the 18th century guns were cast round a core or 'kernel bar' built up from wire and clay over an iron spindle somewhat smaller than the required bore. Therefore after casting the gun was left with a rough hole which had to be bored up to the specified calibre.

The method was far from satisfactory for sometimes the core shifted during the casting process so that the axis of the hole did not end up coincident with the axis of the piece. Boring did not always rectify the fault because in the primitive machines then in use the boring bar tended to follow the existing hole. Also, the hard crust left in the hole by the casting process shortened the life of the boring tool to an inconvenient extent. The answer was to cast the gun solid and drill and/or bore the bore in stages, a system adopted in Europe in 1747 and in Britain in 1774.

Although crude horizontal boring machines driven by water power were at first used (See Fig. 50), these appear to have been superseded in the 18th century by a vertical variety driven by horses, as shown in Fig. 51.

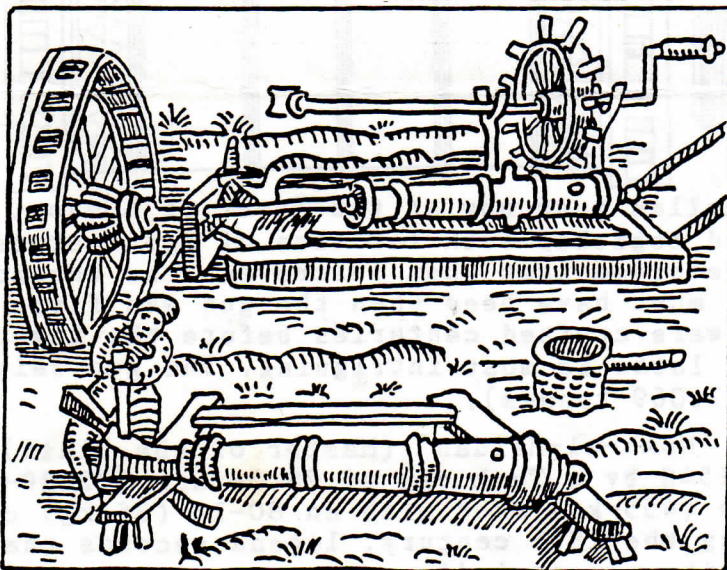


Fig. 50: Early water-driven horizontal boring machine. The workman is removing the 'dead head.'

However, in the vertical machine in which the drill rotated while the piece descended by its own weight, precise alignment of the drill with the axis of the piece was difficult to maintain, so it was eventually decided to revert to the horizontal type. The latter, in which the gun rotated while the drill or

boring bar remained steady, could be set up on a much firmer foundation, and therefore produced a more precise job.

As a further advantage the horizontal machine enabled the outside of the piece to be machined at the same time as the bore

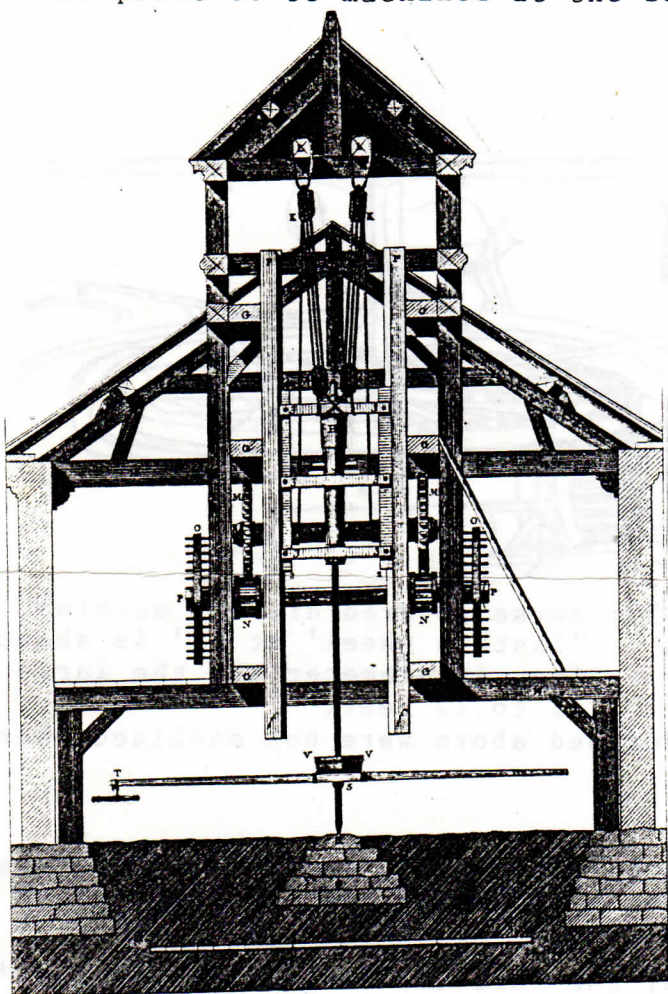


Fig. 51: A one or two 'horse-power' machine or 'mill' as it was sometimes called, for drilling and/or boring the bore of a gun. Superseded during the 18th century by the horizontal machine shown in Fig. 52.

Boring and turning completed the vent was then drilled by two men with a hand-operated drill.

After venting the trunnions were 'machined.' The gun was positioned with its trunnions vertical, after which about a quarter inch (6.35 mm) of the uppermost trunnion was brought to the proper size by file and chisel. Upon it was then placed a circular box with a cutter fixed on its underside, while on the upper part was fixed a vertical spindle with a heavy weight pressing down upon it. Levers were attached to the spindle, and two men kept walking round and round rotating

the box until the length of the trunnion had been machined, the end being finished with chisel and file. The men then repeated the performance on the other trunnion - and hoped the axes of the two were somewhere near being in the same straight line, and that this line was at right angles to the axis of the piece!

With the coming of steam power (1845 in Woolwich), the hand-finishing of trunnions ceased with the introduction of a special trunnioning machine which ensured their accuracy in all respects. Power drills, e.g. for drilling vents, were also introduced.

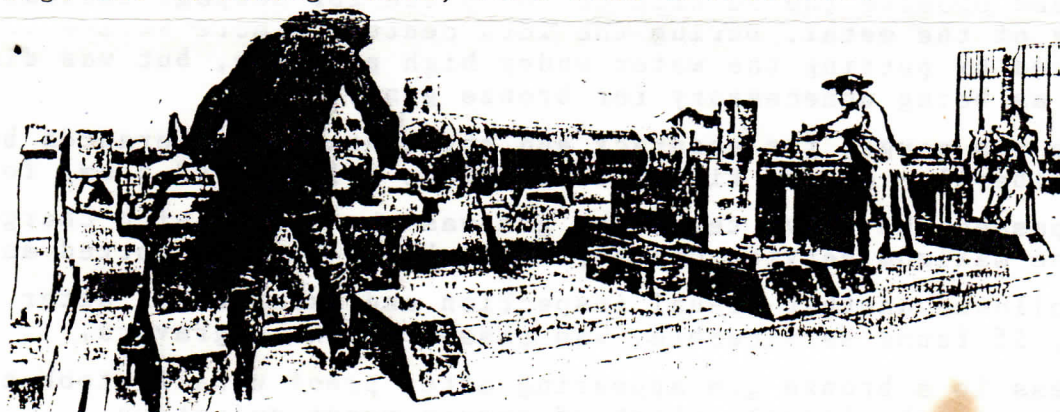


Fig. 52.

Horizontal lathe of early 18th century.

The man on the left is turning the outside of the piece while the one seated on the far right is feeding the boring bar into the bore by rack and pinion gearing. Until the invention of the lathe slide rest turning was done by holding the tool in the hand, a slow and laborious business. The lathe was driven literally by horse-power via a shaft

directly connected to the lathe spindle through the wall to the left of the operator. Fig. 53 shows how a horse-driven machine worked.

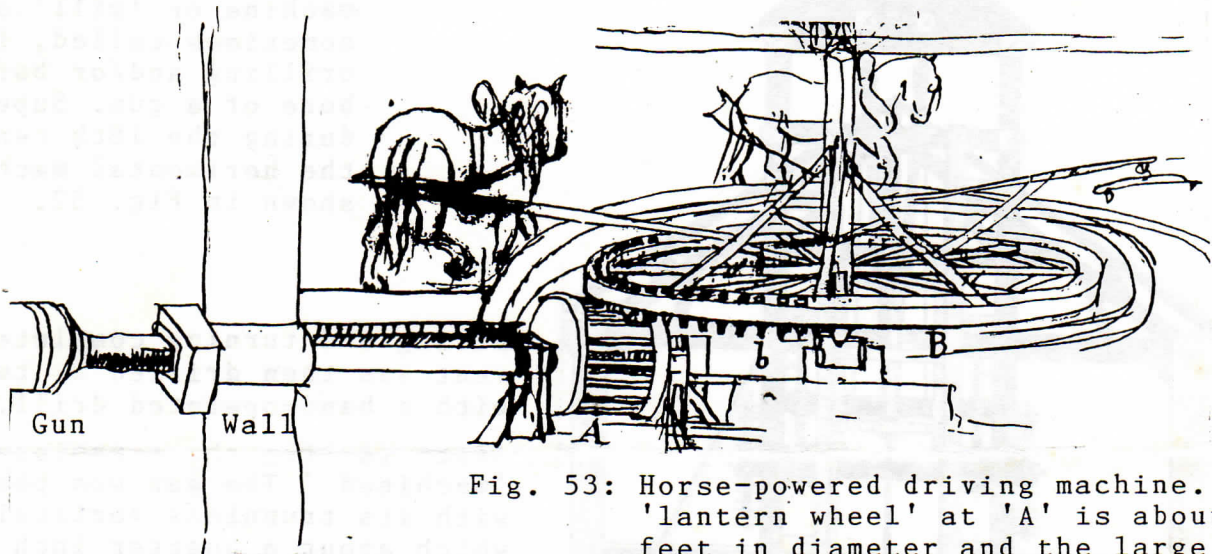


Fig. 53: Horse-powered driving machine. The 'lantern wheel' at 'A' is about two feet in diameter and the large wheel B 11 to 12 feet.

Note: The 'think big' guns described above were not machined, merely 'cleaned up' after casting.

PROOF:

Immediately after casting during 'cleaning up' a visual inspection of the exterior of the piece was made to detect any obvious surface flaws which exceeded accepted limits.

After machining the interior of the bore was first examined for 'spongy' areas or cavities, a process known as 'searching,' the implement used being called a 'searcher.' It consisted of a wooden stave at one end of which were a number of wire points designed to catch in any cavity when moved around in the bore. The points could be retracted by a ring which slid up the stave. Another form of searcher was designed to take a wax impression of any cavity detected, which, if 1/9 inch or more in depth caused the gun to be rejected. The earliest reference to the searcher occurred in 1635.

Another test was to suspend the gun by the muzzle, fill the bore with water, and observe the outside of the piece for seepage indicating porosity of the metal. During the 18th century a more severe test was introduced by putting the water under high pressure, but was discontinued in 1780 as being unnecessary for bronze guns.

The bore was gauged for accuracy and straightness, tolerances being pretty liberal - at one time plus or minus 0.1 inch (2.5 mm) for calibre!

Having passed the above tests the gun was then fired with charges well above the maximum service charge, often being double-shotted as well.

There followed another visual inspection and examination after which the gun, if found serviceable, was passed to the engravers.

A weakness in a bronze gun appearing after proof usually took the form of a bulge in the barrel, which of course meant rejection.

Cast iron guns were not so considerate; they invariably burst during firing. Consequently Gunners of the smooth-bore era naturally preferred to serve on bronze guns rather than on iron!

To be continued.