Incorporated

NEW ZEALAND PERMANENT FORCE OLD COMRADES ASSOCIATION INC

PO BOX 33 710. TAKAPUNA. AUCKLAND 1309

NEWSLETTER No 90

June 1996 A Registered Publication

LAST POST:

1675 W.N. (Nelson) McLeod, 28 Apr 96, at Auckland.
31274 H.D. (Harold) Nicholson, 19 Jun 96, in Canada.

CHANGES OF ADDRESS:

B. Ayling to 70 Vandeleur Ave, Birkdale, Auckland 10.
N.E. Bennetts to 130A Taylor St, Blockhouse Bay, Auckland 7.
Brig. G.D. Birch MBE to 8 Paparata St, Karori, Wellington 6005.
B.J. Calder to 30 Fitzgerald Ave, Matamata.
Capt. M.F. Dakin to 1 Timandra Place, Brentwood Park, Whangarei.
F.D. Foley to 69 Poinsettia Ave, Mooloolaba 4557, Queensland, Australia.
Mrs J. Hankey to 28C Elizabeth St, Whangarei.
R.W Hayman to 76 Kath Hopper Drive, Orewa.
C.J. McIsaac to 38 Carruth Rd, Papatoetoe.
M. McMahon to Unit 2, 4 Tui Glen Rd, Birkenhead, Auckland 1310.
Capt. M.R. Nowill to c/o HQ LF Command, Byron Ave, Takapuna.

MEMBERSHIP: Life Members:

1776 N.E. Bennetts wef 18 Dec 95.
33732 P.D. Pryce wef 23 Nov 96.

GONE NO ADDRESS	LAST KNOWN LOC.
G.W. Forrester	10B McKinnon Cres, Waiouru.
V.W. Kingi	c/o Fordell PDC, Fordell, Wanganui.
J.H. Smith	18 Marie St, Murarrie 4172, Brisbane, QLD.

Anyone knowing the present whereabouts of these members please inform Secretary.

COMMITTEE MEETING:

The next committee meeting will be held in the main lounge, Birkenhead RSA at 1000 hrs, 10 Aug 96. All members welcome.

NEW COMMITTEE MEMBER:

Following the resignation of Dan Foley who has moved to Australia (see changes of address) a new member has been elected. He is R.G. (Bob) Blankley MBE MSM, past Sergeant Major of the Army.

REUNIONS:

RNZEME 50th anniversary: 30 Aug-1 Sep 96 at Upper Hutt. Contact Dave Monks or Norm Karena, phone 0 4-527 5450, Workshop Coy, 5 Logistics Regt, Trentham Camp, Private Bag 905, Upper Hutt.

2NZEF Japan annual reunion at Papakura 28 Sep 96. Wives, widows, partners welcome. Contact Dave HOlmes, Box 374 Papakura. Ph 298 9466.

AUCKLAND GUNNERS DAY SOCIAL: Held as advertised on 30 May 96 the function was quite successful. The following members were present: Eric and Patti Autridge, Harry Anderson, Bob Blankley, Eric Bickerton, Allan and Elsie Boyd, Iris Boyter, Bevan Culhane, Jean Dingwall, Bert Dyson, Nev Fisher, Barney Harrop, Joe Hanvey, General Ron Hassett, Herb Milne, George and Patti MIln, Vic Meyle, Bill and Estelle Morland, Reg Nutsford, Des O'Connor, Bill and JOyce Powrie, Wally Ruffell, Wally Russell, Henry and Thelma Salt, Ethel Sewell, Terry and Joan Transom, Gordon and NOra Weaver, Graeme Williams (President, Birkenhead RSA). Our Assistant Secretary, Iris Boyter, kindly donated a bottle of liqueur for the raffle, the other prize of which was a bottle of UBIQUE. All arrived home safely.

COAST ARTILLERY FORTS: Wally Fraser, who is active in restoring old Wellington fortified areas and recording their histories, is anxious to borrow old coast artillery training manuals, in particular Coast Artillery Training Vol. 1, in order to acquire background knowledge. Any member able to assist please contact Wally direct. His address is: Major W. FRaser MBE, 5 Pimble Ave, Karori, Wellington.

FRIENDS OF THE ARMY MUSEUM: The first Friends of the Museum Association was formed in 1977. However, the Director, Major C.J. (Colin) Hodkinson, states that in the intervening years contact with many Friends has been lost. Therefore would any member who is a Friend please contact the Museum with their membership number and new contact details so the register can be updated. A photocopy of members' cards to enable reissues if necessary would be helpful.

If anyone is interested in being a Friend please feel free to contact the Museum for further details. The address is: PO Box 45, Waiouru.

SERVICE LIVES REMEMBERED: (Book on holders of the MSM).

The article in Newsletter 89 refers. Following is a list of members of NZPFOCA, i.e. those still living, whose records of service appear in thebook:

31024 Adams JJ	31008 Doak IJ	31056 Powrie AFW
31013 Anderson HB	31050 Foley FD	31030 Ruffell WL
31002 Autridge LE	34602 Hudson RR	31066 Salt HGC
34110 Bickerton EG	41042 Macown HJ	31028 Stephenson WN
33212 Blankley RG	31055 O'Connor DP	31010 Stuart GA
32872 Cassidy GJ	41015 O'Connor PB	31064 Wilson L
31051 Crawley RJ	31031 Petrie AM	33517 Wylde RN

The records contain many errors; furthermore it is suspected the list is incomplete.Therefore the following should contact Secretary:
a. Any member who requires a copy of his record, with a view to supplying corrections where necessary.
b. Any member who holds the MSM but whose name does not appear above. Such member to supply a record of his service.
c. Any member who has a copy of the book but wishes to supply amendments to his record.

GUNNERS DAY 1996 FORMAL LADIES DINING-IN: A Papakure team including Grant Box, Jeff Waters, and Joe Subritzky, organised the dinner held at the Papakura RSA on Sunday 26 May 1996, the 280th anniversary of the Royal Regiment. Gunners, past, present, attached personnel and partners enjoyed a memorable evening. The Regimental Silver graced the table, the RNZA Band provided music, and our South Auckland Rep., Eric Bickerton was Dining President. So pleased were those taking part they resolved to make the dinner an annual event.

ANZAC DAY: The parade at War Memorial Park, Mahara Avenue, Birkenhead, was well attended by Birkenhead RSA members, but included only seven Old Comrades. Our special wreath, made by Henry Salt, was laid at the Memorial Shrine by Secretary Wally Ruffell and Committee Member Bob Blankley.

NEWS FROM MEMBEFS: Bob Harris, 3/3 Telopea St, Booker Bay, NSW 2257, writes of his interest in the local museum in his area which features prominently the New ZEaland soldier, and of conditions in Australia generally, particularly those pertaining to ex-servicemen. As well as writing a historical novel Bob indulges in poetry, a sample of which follows:

THE LONELY HILL

Wild grow the poppies in Tunisian vale
Gracing the green of a fertile land
And here comes "Peace" to lay her veil
On the hill of the foes last stand.

Out of the Plain reared the lonely hill
Like a breast bared to the sky
Its slopes clasped the fallen ever still
And its bosom echoed the swallow's cry.

Small sanctuary of a fallen dream
Last bastion to Enfidaville
Your crumbled fort is a desolate scene
Where all but the winds are still.

The winds will rise and the tall grass bend
To ripple like waves of the sea
And time will take the scars to mend
On the lonely hill of the free.

R.A. Harris.

Enid Standen, who is also a member of the Carterton RSA Ladies Section, writes of her activities selling poppies prior to Anzac Day, of her attendance at the parade, and of the enjoyment in the CLub playing housie, indoor bowls etc. In a recent visit to 'her old stamping ground, Miramar, she discovered there is now a pub there. Things must really be looking up in Wellington! Her address is: 5A Clifton Ave, Carterton.

Dan Foley, (see changes of address), is now settling down in the land of Oz. We wish he and Dorothy well in their new country.

John Masters, 3 Frith Place, Christchurch 5, writes expressing his appreciation of the historical notes on the gun appearing in the newsletters.

Harry Anderson, 11 Wicklow Rd, Devonport, had a day or two in hospital recently but is now on the mend. It was 'ticker' trouble. He promises to be at the next RSA Friday morning 'session.'

We offer our condolences to Jock Gunn, 1/289 Richardson Rd, Mt Roskill, Auckland 2, who recently lost his good lady.

Harry Honnor, 7A Puketiro Place, Paihea 0252, sends warmest regards to all the executive, and an assurance that he intends reaching 'that 80-year mark' when subscriptions are waived. We all wish you the best of luck, Harry!

Bruce McIver, 4/47 Woodside Rd, Henderson, reports his health good although his hip sometimes gives trouble. He sends regards to all members of 10 Wing, and appreciates the story of the gun.

Les Pye regrets BOb Harris did not contact him when recently in New Zealand. What about it Bob? Les' address is Major L.J. Pye, 16B Wither Road, Blenheim.

Jack Basham reports he has improved somewhat and hopes soon to be back in circulation.

NEWS FROM MEMBERS (CONTD): Through the grapevine I have been informed that Spenser Cocks has survived a heart operation but is now home and OK. Spenser, who is Patron of the New ZEaland Military Historical Society, would welcome new members. The Society meets at the Officers Club, 14 Edgerley Rd, Newmarket, Auckland, on the first Tuesday of the month, when first-class lectures on military subjects may be heard. For further info contact Secretary, PO Box 5123, Wellesley St, Auckland or Secretary NZPFOCA, who is a Life Member of the Society

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Roger Newth enjoys the articles on 'The Gun' which remind him of lessons on Basic Principles at the School many years ago.

Spencer Morrison, our Southland Rep., reports all well in the Deep South, and hopes to visit the North next year.

Ron (Tommy) Atkins, 108 Gloaming Hill, Titahi Bay, hopes to be at the Taupo reunion this year, as he has had to miss the last year or two.

REUNION 1996; Remember the dates 1-3 November 96. Venue: Taupo Yacht Club. Further details will be issued in the September newsletter. What if it does cost you a few bob. You only live once!

THE GUN

BY Wally Ruffell

SIGHTS AND LAYING: (Continued from Newsletter 89).

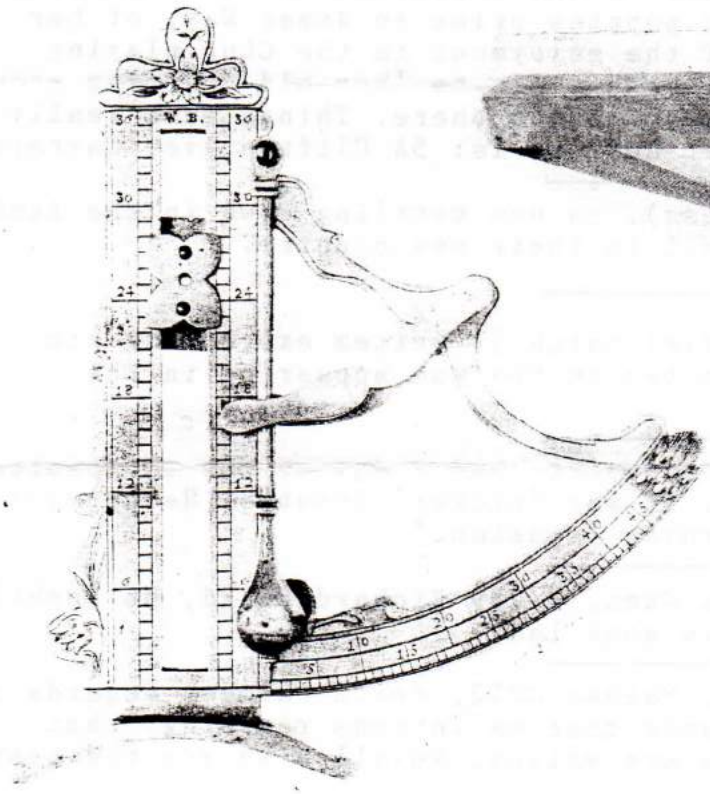


Fig. 59: German brass Gunner's level with central sliding sight. The latter resembles a tangent sight but the design appears to be based on Tartaglia's erroneous assumption that equal increments of elevation achieved equal increments of range. Made c. 1700.

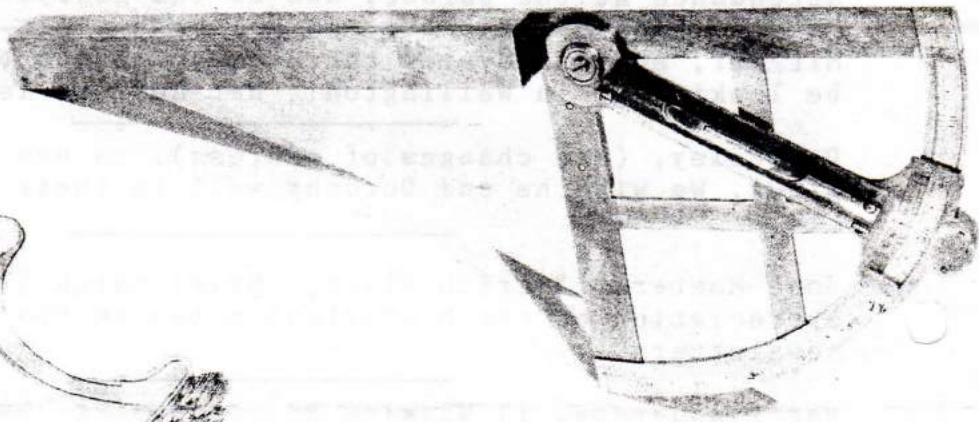


Fig. 60: Brass Gunner's quadrant with spirit level and vernier reading to 5' of arc. This was not a general issue but appears to have been used for experimental purposes. Made c. 1750.

Figs. 59 and 60 illustrate the modified instruments referred to at the end of Newsletter 89.

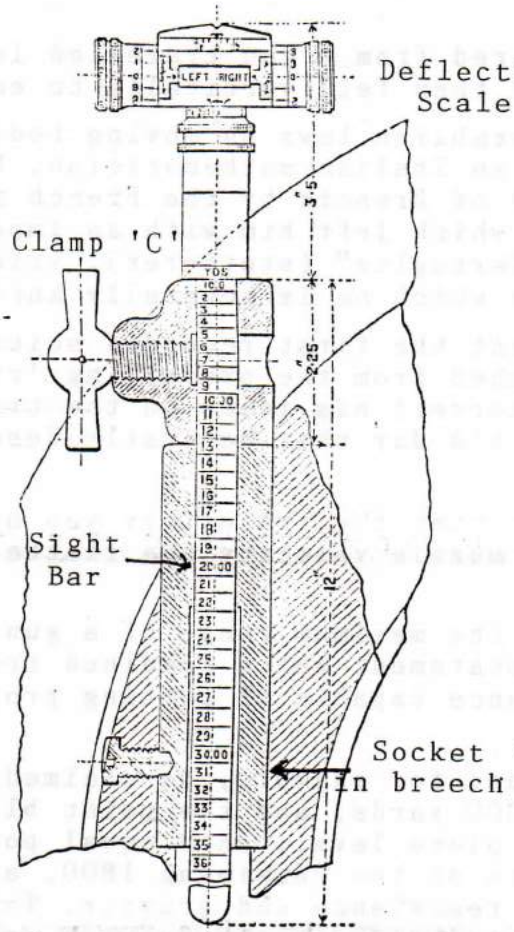


Fig. 61A: The Tangent Sight The original consisted of a simple open sight on a bar graduated in ranges or degrees and inserted into a socket in the breech with a suitable clamp. In some guns the socket was provided in the centre of the breech, in others on both sides. Fig. 61A depicts a model introduced during the 1860s. Earlier sights had no deflection scale.

The name derives from the fact that the height to which the backsight must be raised to give the gun the required angle of elevation is obtained by multiplying the tangent of this angle by the distance between the backsight and foresight, or, as generally expressed, the 'radius distance. See Fig. 61B for theory.

The tangent sight in the form shown survived as the principal method of laying field guns in the British Army (in both smooth-bore and rifled guns), until the South African War (1899-1902).

It was invented in England c.1779 but was fitted to few guns before 1800.

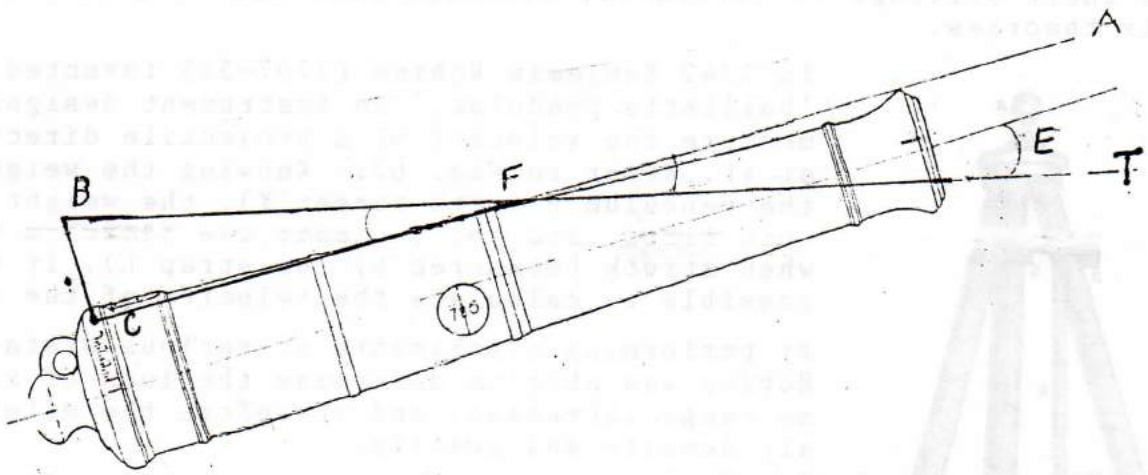


Fig. 61B.

Let B = backsight
C = clamp for sight bar BC
E = elevation on gun
F = foresight
CF = radius distance

Then BFC = AFT = E

and $\frac{BC}{FC}$ = tan E

Therefore BC = FC tan E, hence the name 'tangent sight.'

BALLISTICS:

At the beginning of the smooth-bore era Gunners knew little of the motion of projectiles, with which the science of ballistics is concerned.

For example, they believed a shot fired from a gun travelled in a stright line to some point in space, then fell vertically to earth!

Important as a pioneer attempt to establish laws on moving bodies was the publication of Nova Scientia by an Italian mathematician, Niccolo Fontana (1499-1559). During the sack of Brescia by the French in 1512 he suffered a sabre cut to the head which left him with an impediment in his speech - plus the nickname "Tartaglia" (stutterer), which he later adopted as his surname, and by which he is generally known.

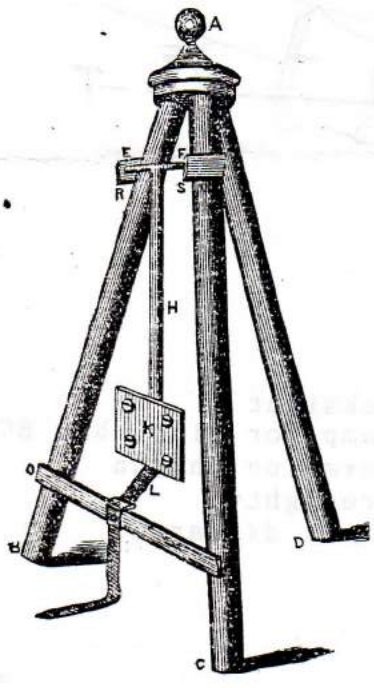
Other works in 1546 and 1551 represent the first recorded scientific approach to the theory as distinguished from the prevailing 'rules of thumb.' Although in some measure incorrect his ideas on the trajectory of a roundshot were so far ahead of his day that he justly deserves the title of first ballistician.

Tartaglia was the first to point out that the trajectory was not flat but curved, and that the higher the muzzle velocity the flatter the trajectory.

He was also the first to prove that the maximum range of a gun is achieved at an elevation of 45^{o}, a statement which remained true until the appearance of 20th century ordnance capable of putting projectiles into the stratosphere.

But he did draw erroneous conclusions; for example, he claimed that if the maximum range of a gun was 2000 yards, and the point blank range 200, i.e. range achieved with piece level, then equal portions of 45^{o} would achieve equal increments of the remaining 1800, a theory which did not take into account air resistance and gravity. Tartaglia was honest enough to admit his theories did not always work out in practice.

Most other authors on the subject during the 16th and 17th centuries based their writings on Tartaglia, although some did dispute certain of his theories.



In 1742 Benjamin Robins (1707-51) invented his 'ballistic pendulum,' an instrument designed to measure the velocity of a projectile directed at it. Refer to Fig. 62: Knowing the weight of the pendulum H (with target K), the weight of the shot fired, and the distance the pendulum moved when struck (measured by the strap L), it was possible to calculate the velocity of the shot.

By performing experiments at various distances Robins was able to determine the loss of velocity as range increased, and therefore the effects of air density and gravity.

The instrument had its faults, but at least its design was based upon logical thought, not on 'rules of thumb' or guesswork. Robins published his findings in New principles of Gunnery 1742. Had more notice been taken of them at the time the technical development of ordnance might have progressed much faster.

Fig. 62: The ballistic Pendulum.

RANGEFINDING:

Throughout the smooth-bore era great emphasis was placed on the ability of Gunners to judge distances, and they were frequently exercised in this skill at ranges up to 2000 yards (1829 metres).

In field artillery the No 1 estimated the range to his target by experience. This was not as difficult as might be supposed, as field guns rarely opened fire at ranges over 1000 yards (914 m), their maximum effective range. Not only did the striking power of roundshot fall off rapidly over this range, but the layer had difficulty in distinguishing the target. Telescopes were not fitted to guns prior to the last two decades of the 19th century, and then only to coast artillery equipments.

No serious attempts to obtain ranges by instrumental methods were made before 1770. That year saw the short base method put to limited use, e.g. for siege purposes, but it was a time-consuming process. See Fig. 64.

Development of efficient optical rangefinders did not commence until 1860, at the start of the rifled era, and culminated in the introducti of the well-known Barr & Stroud types 20 years later.

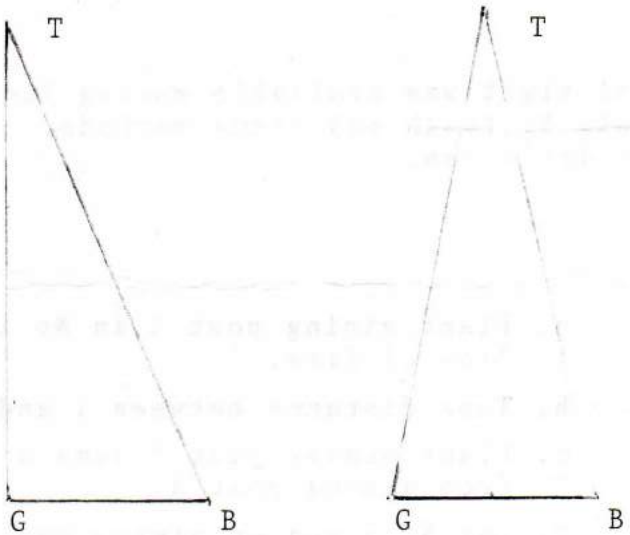


Fig. 64A Fig. 64B

T = target, G = gun, GB = sub-base.

An early 18th century method of obtaining range by rough survey is illustrated in Figs 64A to C. An Officer laid out a sub-base GB of 25, 50, or 100 yards to form either a right-angled triangle (Fig. 64A), if possible, or if not an isosceles triangle (Fig. 64B). He then measured angles G and B by plane table and sight rule as shown in Fig. 64C. With these data he was thus able to deduce the angle T and calculate GT.

Fig. 64C: Measuring angles G and B.

GENERAL: The old-time Gunner had a shrewd idea of the elements of gunnery; he realised the effects of lack of level of trunnions, air density, wind, uphill and downhill shooting (Non-rigidity of trajectory), temperature etc. His understanding of corrections for variations was sometimes vague, but he had the right idea.

To be continued.

A Gunner should be skilful in arithmetic and geometry, to the end he may be able by his knowledge in those arts to measure heights, depths, breadths and lengths, and to draw th plan of any piece of ground, and to make min countermines, artificial fireworks, ramparts gabions or baskets of earth, and such like things which are used in time of war to be made for offensive service.

Cyprian Lucar
1588.

GUNNERY:

During the smooth-bore era virtually all fire was direct.

On the very rare occasions indirect fire was attempted it invariably involved siege operations in which ample time wa available. Until the introduction of the dial sight in the last decade of the 19th century indirect fire was not practicable; it involved a time-consuming lining up of aiming posts, was possible only in easy rolling country, and was generally suited to howitzers only. Fig. 63 shows an easy set-up:

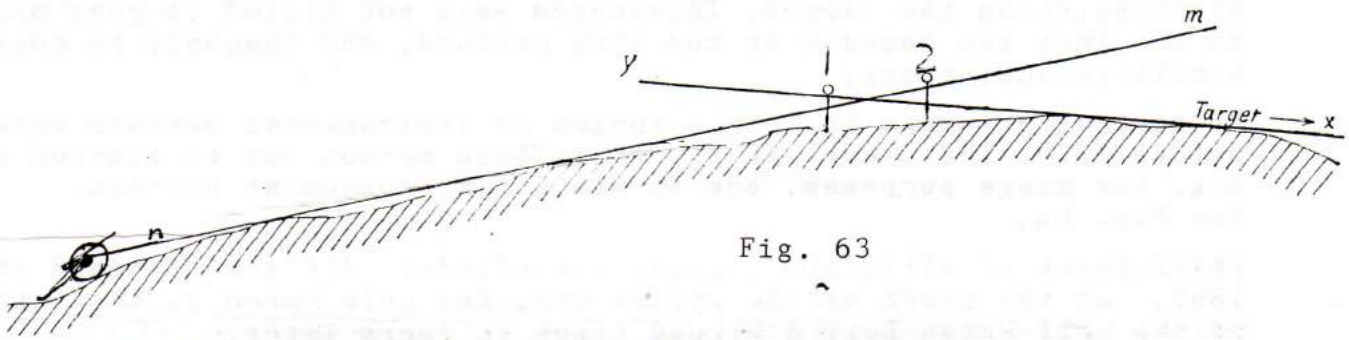
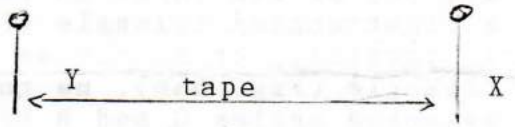


Fig. 63

Aiming posts 1 and 2 had to be in line with the target and also in the line gun-target.

PARALLELISM:

Because neither director nor dial sight was available making lines of fire parallel was possible only by rough and ready methods. For example in Fig. 63 below the drill was:



a. Plant aiming post X in No 1 gun's line of fire.

b. Tape distance between 1 and 2 guns.

c. Plant aiming post Y same distance from aiming post X.

d. Lay No 2 gun on aiming post Y.

The remaining guns in the battery were made parallel in the same way.

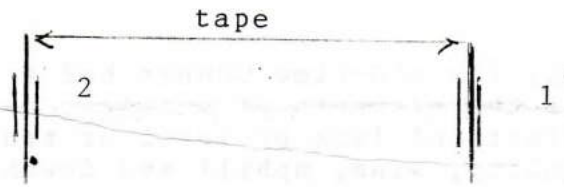


Fig. 63.

CONCENTRATION AND DISTRIBUTION:

This exercise could be carried out by guns with open sights fitted with deflection scales - to a limited extent.

Needless to say the exercises outlined above were not repeated often.

RANGING:

In a drill laid down in 1757 the Number One, who laid his gun and corrected its fire, ensured the first round fell short. He then increased elevation until he obtained a hit. Such shooting is frowned upon to-day, but during the smooth-bore era once the target had been indicated by the BC the Number One was on his own. There was no OP, so if the first rounds were plus the chances were they would be unobserved, and therefore wasted.