



Incorporated

NEW ZEALAND PERMANENT FORCE OLD COMRADES ASSOCIATION

PO BOX 33 710, TAKAPUNA, AUCKLAND 1309

NEWSLETTER No 94

LAST POST:

34656 J.W. (John) Monk, 20 Apr 97, at Ngaruawahia  
446361 Captain I.G. (Ivan) Wilson MBE, 21 Apr 97, at Napier.  
1624 G.A. (George or Hoki) Stuart MSM, 4 May 97, at Dunedin.  
924271 M.J. (Curly) Hellyer, 22 May 97, at Whangamata.

CHANGES OF ADDRESS:

Major JR Barrett to 62 Coatesville-Riverhead Highway, RD 3, Albany,  
Auckland. NB: There is no change of location.  
Mrs WL Black to c/o 1/51 Paunui St, St Heliers, Auckland 5.  
Brigadier GD Birch MBE to 467 Omokoroa Beach Rd, Tauranga 3021.  
P. Christian to c/o The Press Office, 138 Mackay St, Greymouth.  
Captain MF Dakin to 10 Pampas Grove, Meadow Views, Welcome Bay, Tauranga.  
R. Harman to 9 Stevenson Rd, Clarks Beach 1850.  
KE Hopkinson to 13 Bowman Rd, RD 9, Hamilton.  
JB Kirk to 82 Marshall Ave, Greerton, Tauranga.  
G. Robb to 18 Lochinvar Place, Ohauti, Tauranga.  
JJ Sprangers to 47 Muir Rd, RD 1, Te Awamutu.  
RC Walker to 122 Gradient Way, Beldon, Perth 6027, West Australia.

NEW MEMBERS:

40919 Captain BG (Bryce) Harrison, 11 St Annes St, Levin.  
Mrs Heather Hellyer, 311 Opoutere Rd, RD 1, Whangamata. (Associate)  
Mrs Amy Monk, 17B Herschel St, Ngaruawahia. ( " )  
350179 ETK (Eddie) Naden, 43 Fernaig St, Papakura.  
39931 W. (Bill) Opai, 16A Bayview Rd, South Dunedin.  
42198 IJ (Isaac) Walker, 80 Stephenson St, Blenheim.

STRUCK OFF for failing to pay subs according to Rule 4(f):

JA Breen	P. Hickey	MW Maunsell
Lt Col AR McLeod	EN McEwen	GJ Pickering
T TeA Pilcher	MA Samuels	Lt Col HA Weatherhead

To the abovenamed members: This will be your last newsletter unless you pay by 31 July 97.

COMMITTEE MEETING:

The next meeting will be held at the Birkenhead RSA on Saturday 9 August 97 commencing 1000 hrs. Non-committee members welcome.

INVITATION FROM AUSTRALIAN ARMY:

An invitation to attend the Artillery Centre farewell to Manly and North Head Barracks is extended to members of NZPFOCA. Activities cover the period 1-3 Aug 97 and replies are required by 25 JUL 97. For details contact Secretary or WO2 Peter Winters, School of Artillery,



PO Box 42, Manly 2095, Phone: 02/99761240, or the local RAA Assn.

### REUNIONS:

NZPFOCA: Our next reunion will be held in Taupo over the week-end 31 Oct-2 Nov 97. Further details will be published in the September newsletter.

5 Field Regt NZA: A 'get-together' will be held in Mosgiel during November 97 if sufficient interest. Contact Neville Mowat, 39A Factory Rd, Mosgiel, on 03/489 2160, or Alan MacLeod, McMeakin Rd, Brockville, Dunedin on 03/476 3226.

EX-VIETNAM VETERANS: A reunion will be held in Wellington 30 May to 1 Jun 98. Write to Box 50 778, Porirua.

See also Newsletter No 93.

AUCKLAND GUNNERS DAY SOCIAL: This was held on 29 May 97, being the nearest day to the 26th satisfactory to the caterers at Birkenhead RSA. The following attended: Bob Blankley, Eric Bickerton, Allan and Elsie Boyd, Iris Boyter, Bert Dyson, Barney Harrop, Dutch Holland, Bill and Estelle Morland, Vic and Audrey Meyle, Joe Panoho, Jim and Hilda Ross, Henry and Thelma Salt, Terry and Joan Transom, Gordon and Nora Weaver, Graeme Williams, Yogi Young, Wally Ruffell.

ASSISTANCE TO ARMY MEMORIAL MUSEUM: Any members willing to assist Museum staff in maintenance of equipment etc, please contact Secretary at address on this newsletter or on 09/445 3567.

ANZAC DAY: Members of our Association were rather thin on the ground at the parade at War Memorial Park, Birkenhead. Our permanent wreath, made by Henry Salt, was laid on the War Memorial shrine by Des O'Connor (Treasurer) and Wally Ruffell (Secretary).

DISTRICT REPS: Manawatu/Wanganui: The President and Executive express their gratitude to Dave Jones for a job well done over many, many years. At the same time they extend a warm welcome to Dave's successor, Lt Col A.J. (Angus) Rivers, 108 Henderson Line, RD 3, Marton 5460, Phone 06/327 8831,

WAIOURU: Kevin Hopkinson, having recently retired from the Army, has vacated the office. We thank him also for his service, and wish him success in his foray into 'civvy street.' See changes of address. Kevin's successor is still to be appointed.

CANTERBURY: Paul O'Connor reports all well on the South Front. He was guest speaker at the Paparoa RSA on Anzac Day. Paul is kept very busy at work and would appreciate a relief. Any offers? Paul's address is: 69 Sabys Rd, Hallswell, Christchurch 3. Phone 03/349 9919, or contact Secretary.

DUNEDIN: Ian Cunningham, 14 Charlotte St, Dunedin, our Rep. for that district, sends best wishes to all Old Comrades.

HAWKES BAY: Jim Gilberd, 85 not out, is still going strong, but may request a replacement in the not too distant future. Younger members please note!

EXECUTIVE OFFICERS: We are all getting older. Your Secretary and Treasurer, 79 and 75 respectively, while not yet doddering, are pretty nearly in the 'ancient' class. In the meantime we request offers from younger members willing to act as understudies. It is highly desirable that they come from the Auckland area.



LADIES DINING-IN GUNNERS DAY 26 MAY 97; Held at the Papakura RSA, Elliott St, a total of 137 Gunners and their Ladies enjoyed not only an excellent meal but a wonderful evening's entertainment, presided over by Eric Bickerton ably assisted by his Dining Vice President, Neil Moros. Entertainment was provided by the Band of the Royal N.Z. Artillery, and the Papakura Cadet Drum Corps. The first-class organisation evident at this function was due to our South Auckland Rep., Jeff Waters, and his committee. Watch out for a 1998 repeat!

NEWS FROM MEMBERS: Dan and Dorothy Foley, 69 Poinsettia Ave, Mooloolaba, QLD 4557, who are 'thriving in Australia' send regards to all. In order to cope with the heat they have had to install a pool!

Brian Frances, 4 Utah Pl, Westhaven, ChCh, says it was great to read Tom Ellen's letter in newsletter 93. Brian was Tom's TSM in 1 Loc Tp in Waiouru 1983-85. Brian is now a Computer Training Officer for the NZ Police and acts as consultant to Marine Air Systems, Wellington, who developed the Vanguard Artillery Computer and Morfire mortar fire control systems. He has recently visited several countries to demonstrate Vanguard.

Jack Shaw, President, NZ Army Assn (Taranaki Branch) asks us to "watch for news of some sort of nationally generated commemoration of the 50th anniversary of CMT in 1999." Taranaki BRanch initiated this through the national body of NZAA who have recognised the importance of the occasion.

Enid Standen, 5 Clifton Ave, Carterton, reports how glad she is she joined the women's section of the local RSA, and the pleasure she derives from outings, games, and in working for the Club.

John Barrett, 62 Coatesville-Riverhead Highway, RD 3, Albany, Auckland, is currently working with the Navy (as a civilian) in Devonport, in the recently-created Strategic Personal Planning Office.

James and Aileen Horn, at present operating a Motel as relief managers during the absence of the owners, intend coming to our reunion 31 Oct-2 Nov. They would appreciate the offer of a couple of motels to look after in Taupo over November and December.

Denis Dwane is now employed at HQ Land Force Command, Takapuna, with his responsibilities being in the Works/Property area. The main focus of his attention is the relocation of the HQ and Mt Wellington-based units to RNZAF Base Auckland.

Harry Fantham reports that any South Islanders who wish to attend the annual reunion may do so for \$389 for two passengers and car return on any Inter-Island ferry, which is cheaper than by air. South Island members please note.

Graeme Henderson, 224 Rocks Highway, Riverton, reports a Gunners Day celebration was held in Invercargill on Sunday 25 May, and included a Cenotaph Parade at 1100 hrs after which members adjourned to the Garrison Club 'to imbibe.' Attendance was 40 plus including wives. John Masters was guest speaker.

Jim McMorran, 319 Selwyn St Spreydon, ChCh 8002, sends regards, especially to ex-14 Wing members who marched in to Trentham on 12 Jan 1938. Jim is not enjoying the best of health at present; we hope you enjoy an improvement soon, Jim.

Reg Walker (see changes of address), sends best wishes to all members and especially his old comrades of the war years. Reg and his good lady have a caravan, do quite a bit of travelling around Australia, and 'live life to the full.'

Charlie Anniss, 6B Tui Place, Perrin Park Hamilton, has been having



a rough time healthwise, but is bearing up and sends regards to all. We wish you well, Charlie.

Robin and Celia Wait send regards and expect to attend 6 Fd Regt reunion in Palmerston North in October.

Macka Wells, 36A Davilak Ave, Hamilton Hill, WA 6163, hopes we had a good Anzac week-end. He tries to make it across to South Australia on Anzac week to spend some time with ex-Vietnam mates of 3 RAR 'A' Coy.

Grant Robb (see changes of address) retired from the Army on 6 Jun 97. We wish him well in 'civvy street.'

Graham Birch (see changes of address) hopes we had a happy Gunners Day and says, "After almost 40 years in the RF with its rather nomadic life style, it is time to firmly emplace the trail and dig in." You picked a pretty good gun position, Graham!

### THE GUN

Continued from Newsletter 93

By Wally Ruf 11

#### FIRING THE GUN:

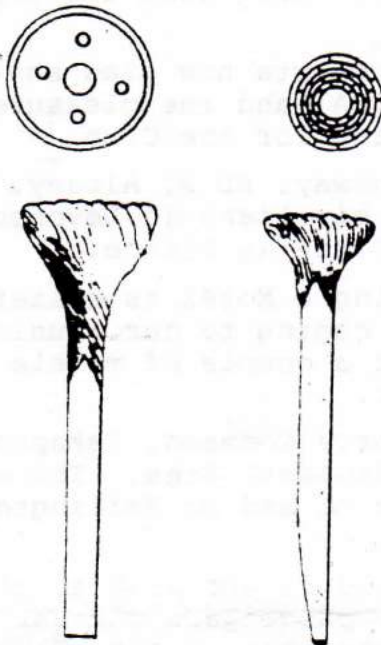


Fig. 75A  
Metal tube

Fig. 75B  
Quill tube

COMMON TUBES: We have already learned that to prevent erosion of vents metal tubes were introduced in 1697. See Fig. 75A. These were filled with mealed powder dampened with methylated spirits, while the top, formed into a cup, was filled with a mixture of mealed powder, gum, and water made into a paste and sprinkled on top with dry powder. This cup was covered with a paper cover which had to be removed before use. Having been inserted in the vent the tube's contents were ignited in the normal manner (by portfire after 1700).

The tubes worked very well but the Navy complained that fired tubes lying on the decks might injure sailors' bare feet, so in 1778 (change came slowly in those days) adopted tubes made of goose quill (Fig. 75B). Almost identical in shape and size to the metal variety they worked equally well, but though they saved sailors' feet they did not save gun vents. As the quill burned completely away on firing vent erosion was as bad as before.

#### THE FLINTLOCK:

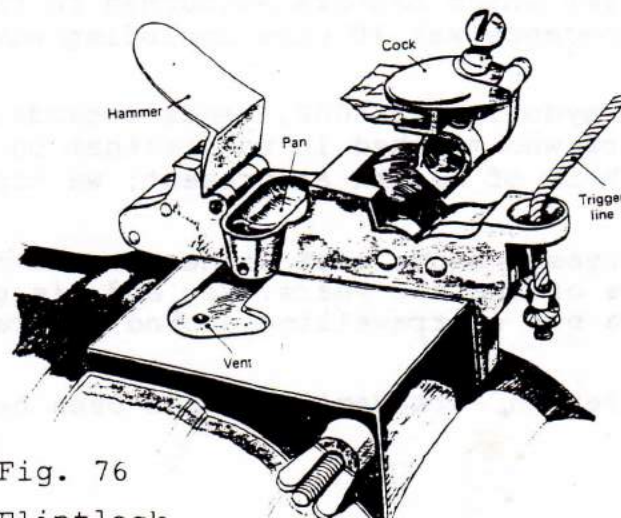


Fig. 76

In 1778 Sir Chas Douglas urged the adoption of flintlocks for naval ordnance but the RN would not listen. He therefore bought musket locks for the guns on his own ship where he proved their superiority to other forms of ignition. Twelve years later the Admiralty were convinced and adopted them in 1790.

However, the Army did not adopt them until 1820 - and even then retained their portfires 'just in case.'



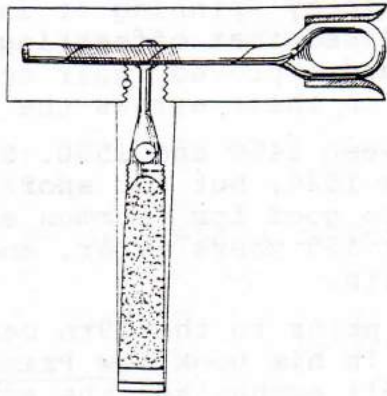


Fig. 77. Friction tube.

**FRICITION TUBES:** Often called 'T' friction tubes from their shape, they were introduced in 1853. Filling was similar to that of common tubes. Ignition was by flash produced by a roughened bar at the top reacting with a sensitive igniter in the neck when pulled by a lanyard attached to the ring. See Fig. 77.

Friction tubes were still in use in BL field guns until they were superseded by QF types during the South African War (1899-1902).

NZAOC still had them in store in 1938 when they produced some for the makers of the film Rewi's Last Stand!

**PERCUSSION TUBES:** In 1830 James Marsh invented the percussion tube and in 1832 the first ship HMS Castor had her guns modified for them. They were not approved for Army until 1845, when Woolwich commenced their manufacture - for coast artillery only. They became obsolete in 1866.

**ELECTRIC TUBES:** In 1862 Sir Frederick Abel invented an electric tube for use in coast artillery. Approved for issue in 1866 it was known as 'tube electric high tension' and worked on the same principle as the modern spark plug. Ignition was by spark via a gap between two wires buried in a special priming composition, not by an incandescent wire bridge. Power came from a portable generator.

This now completes the history of smooth-bore ordnance and ammunition.

**ADDENDUM TO CHAPTER 2:** Recent archaeological discoveries indicate that the Chinese did in fact produce guns about the same time as Europeans, as shown in the accompanying illustrations. Indeed, a comparison of Figs 1 and 1A prompts the question, "Who copied whom?"

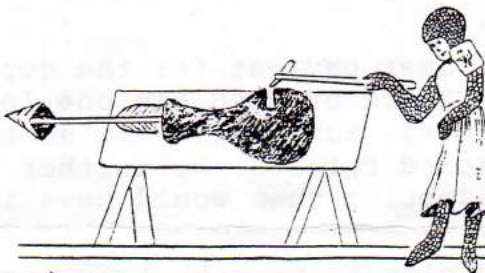


Fig. 1: Earliest known European illustration of a bronze (?) gun in "De Officiis Regum" (On the Duties of Kings), by Walter de Millemete, 1326. Called 'vaso' from the Italian word for 'vase' which it closely resembles. Italian records of the same year refer to the casting of guns in Florence.

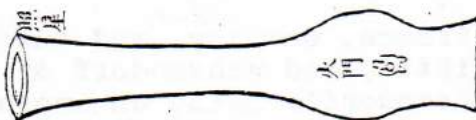


Fig. 1A: Earliest known Chinese illustration of a bronze gun from the "Huo Lung Ching," a treatise begun c. 1355. Calibre 5.5 cm, weight 72 kg.

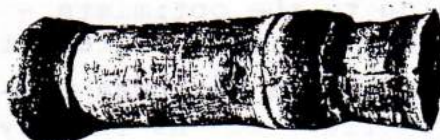


Fig. 1B: Oldest dated Chinese gun, inscription on which indicates it was made c. 1332. Length 35 cm, diameter at muzzle 11.4 cm, cast from bronze. Unfortunately the archaeologists cannot guarantee the accuracy of the date.



Fig. 1C: Oldest European gun known. A 'vaso' dug-up in Sweden, it has been dated to the 14th century. Length 30 cm, Calibre 37 cm, material bronze.



## CHAPTER 7: RIFLED ORDNANCE ARRIVES:

The technique of stabilising a projectile by spinning it in flight is not new; mediaeval cross-bowmen realised that offsetting the 'wings' on their bolts made them spin and improved their accuracy. Archers sometimes treated the feathers on their arrows the same way.

Rifling as we know it was invented between 1450 and 1500. Rifles were in use in Germany and Italy as early as 1520, but for sporting purposes only. They were expensive - too good for 'common soldiers' - so were not issued to troops until over 150 years later, and then only in small numbers to specialist units.

Experiments on the rifling of ordnance prior to the 19th century failed to produce an effective system. In his book New Principles of Gunnery (1742), Benjamin Robins (1707-51) emphasised the advantages to be gained by the nation which developed rifled ordnance. He himself carried out experiments but his findings failed to impress.

In 1789 Joseph Manton (1760-1835), a maker of sporting guns, began to experiment with the rifling of ordnance, and invented a machine for that purpose. The following year the Master General of the Ordnance authorised the issue to him of a SBML 6-pr for preliminary testing. During the course of his experiments he rifled several guns with varying degrees of twist and depth of groove, firing many rounds in shot-for-shot comparison with service smooth-bores.

He also invented a special wooden cup or 'bottom' for attaching to roundshot, designed to expand when the gun fired, take up windage, and engage the rifling.

Unfortunately neither Manton nor any Board of Ordnance member seemed aware of the advantages inherent in the use of cylindrical projectiles. Good as the rifling was, it could do little to improve the ballistics of spherical shot. Thus the rifled guns performed but marginally better than the smooth-bore, which led the Board to conclude that any advantage lay not so much in the rifling as in Manton's cups. They therefore decided to accept the cups for general use but to discontinue tests on rifled ordnance.

In 1792 Manton and the Board wrangled over payment for the cups which by this time Manton had patented. The Board offered him one farthing (0.25c) royalty for each cup manufactured, but Manton wanted a lump sum of £30,000 (\$60,000), which the Board refused. No further action was taken over the cups even though adopting them would have improved the performance of all SB equipments.

In 1821 Lieutenant Croly of the 1st Regiment, British Army, proposed a rifled breech-loading (RBL) gun firing a lead-covered projectile, but he made no progress.

Gunners in other countries, notably France, Germany, and Russia began experimenting. Cavalli of Sardinia (1845), and Wahrendorf of Sweden (1846), advocated RBL equipments, Wahrendorf's being an improvement on Croly's. However, none of them succeeded with their ideas.

Of course Gunners the world over could afford to be complacent; field artillery fought chiefly against infantry whose common muskets had an effective range of 200 yards - according to the optimists - but which in reality was no more than 80. They were not even fitted with sights.

On the other hand the effective range of field guns was 800-1000. Thus the artillery was 'Queen of the Battlefield' as the saying went.



Gunners were no more impressed with riflemen than they were with musketeers; early service rifles fired over-sized balls which had to be forced down the bore by hitting the rammer with a mallet to make them 'take' the rifling! Not only did this make the rate of fire extremely slow, but it distorted the balls, badly affecting their accuracy.

The full story of the development of the military rifle is beyond the scope of this paper, but needs to be briefly addressed, first because it shows how hard it was to get new ideas accepted in those days, and secondly because it eventually obliged Gunners of all nations to switch from smooth-bore to rifled ordnance - as Robins had urged in 1742.

The British Baker rifle introduced in 1800 was sighted to 300 yards but was not considered effective over 200 unless handled by a skilled marksman. In 1838 it was superseded by the Brunswick, a copy of the rifle then issued to the Hanoverian Army, a somewhat better weapon. Rifles of other nations were of similar effectiveness. At 400 metres from the enemy Gunners felt perfectly safe!

Riflemen had long realised that a cylindrical bullet would perform more efficiently in a rifle than a ball of like weight. They made many experiments to find one which could be easily loaded without distorting it by ramming, as occurred with both the Baker and the Brunswick, and which would expand on firing to be rotated by the rifling. Some of their attempts are worth mentioning.

In 1823 Captain John Norton of the 34th Regiment provided the obvious solution. He took a cylindro-conoidal bullet slightly smaller in diameter than the bore down which it could be easily slid for loading, then hollowed out the base so it would expand into the rifling on firing, as shown in Fig. 78. But the Board of Ordnance, having found it worked perfectly, rejected it on the grounds that spherical missiles were the only types acceptable for military purposes. And most members of the Board were Gunners!

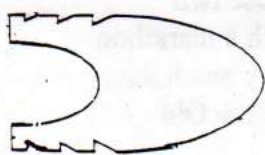


Fig. 78.

Norton's  
bullet.

The real reason for the rejection was that in the services 'progress' was a rude word. Officers lived in an atmosphere of hidebound tradition and unreasoning resistance to change, rank and file existed in one of apathy, fear, and ignorance.

In 1836 William Greener, a celebrated gunsmith, proposed a similar hollow-based bullet fitted with a conical wooden cup designed to be driven into the base cavity by propellant gas pressure, thus expanding it into the rifling, but the Board rejected this also, because it was of a 'composite nature,' i.e. in two bits, therefore too difficult to manufacture! See Fig. 79A.

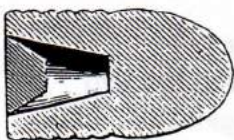


Fig. 79A

Greener's bullet

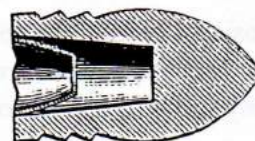


Fig. 79B

Minié's bullet.

Another twelve years slipped by. Then in 1848 the Prussians made their Dreyse 'needle gun' a general issue to all troops. A bolt-action breech-loading rifle sighted to 600 metres, it proved vastly superior to any other service small arm.

In the same year Captain Claude-Etienne Minié of the French Army produced a bullet virtually the same as Greener's (some say he copied it) - and the Board of Ordnance accepted it! Needless to say Greener



was not amused; he took legal action, and the Board was obliged to pay him £1,000 (\$2,000) compensation. See Fig. 79B.

Britain soon commenced the manufacture of the Minié rifle, issue of which began in 1851. Calibre was 0.702-inch - so it could fire the old musket balls in an emergency. It was sighted to 1,000 yards but could kill at 1,400.

Thus in the field the artillery found themselves outranged. No more would there be tales of gallant troop commanders galloping into action '... to within half-musket shot ...' of the enemy, dropping their trails and opening with case! In Britain the Board of Ordnance at last woke up and let it be known they were prepared to evaluate any pieces of rifled ordnance inventors might offer.

To be continued.

FROM THE PRESIDENT:

Greetings Fellow Gunners,

I hope this edition of our newsletter finds you all in the best of health and enjoying a mild winter.

Our AGM is approaching fast, before we know it we will be toasting the Royal Regiment and catching up with all those old mates. The reason I've put pen to paper is that over the past two committee meetings, both the Secretary, Wally Ruffell and the Treasurer, Des O'Connor have indicated that they wish to retire this year. Wally has held one of the key appointments on the committee for the past 20 years, eight as the president and 12 years as the secretary. Des has been the Treasurer for the past 21 years. Both these gentleman have done an outstanding job. I believe these two gentleman truly deserve a break as they have asked, especially after such a marathon effort. On behalf of the Association I would like to thank them both very much for their exemplary effort and their continuous dedication to the running of the Old Comrades Association.

To this end, I would like to call for volunteers to be nominated for these two important positions. At this stage I would also ask for nominations for the Presidents position. It is preferable that the nominees/ volunteers are in the Auckland area. It has been suggested that there is a large number of Gunners in the South Auckland Area that are more than capable. Nominations should be sent to our normal address, attention Wally.

On the job training will be given by our two very experienced gentleman. Wally has also said that he would continue supplying articles to the newsletter.

In closing I would like to thank the other members of the Executive Committee for their hard work and dedication. Especially Terry Transom who has also dedicated many years to the Association. I look forward to seeing you all again in Taupo.

UBIQUE

  
I. S. FOSTER  
President