CASCABEL

Newsletter of

The ROYAL AUSTRALIAN ARTILLERY
ASSOCIATION (Victoria) INCORPORATED

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The President Writes:

As the 75th Anniversary of the landing on the Gallipoli Peninsula approaches, my mind goes back to the seaborne assault by the ANZAC Corps and the part played by the Australian Field Artillery.

The decision to create an expeditionary force, to be named the Australian Imperial Force was made almost immediately after the declaration of war on 14th August 1914. Two weeks later, units were being raised for the Australian Division (that it was the 1st of 5 was not foreseen). The Artillery units were the 1st, 2nd and 3rd Field Brigades, each of 3 batteries equipped with 4 x 18pdr Mark1 guns. The 2nd Field Artillery Brigade, Australian Field Artillery (2 FAB AFA) was raised entirely in Victoria. Commanded by LtCol G.J.Johnston, the Officers and NCO's were recruited chiefly from 7 & 8 FAB, the two Militia Artillery units then active in Melbourne.

After training at Broadmeadows 2 FAB (4,5,&6 Btys) left Australia for Egypt, arriving on 4th December 1915, coincidentally St Barbara's Day. Vigourous training ensued until early April when the ANZAC Corps sailed for Lemnos Island, a few miles off the Aegean shore of the Gallipoli Peninsula. The troops were kept on the transports in Mudros Harbour for most of the next couple of weeks, chiefly because of the shortage of water & accomodation on Lemnos Island.

The Artillery support for the ANZAC Corps was, in addition to the three AFA Brigades, the NZFA Brigade which had a fourth Battery equipped with 4.5" Howitzers, and the 7th Indian Artillery Brigade made up of 21 & 26 Mountain Batteries, each with 6 x 10pdr mountain guns.

The plan was simple enough - the Artillery would be brought ashore after the infantry, from 8.30am - and respond to requests for supporting fire. In the event,

only 26 Mtn Bty got ashore at 8.30am. The men of the ammunition column of 3 FAB were brought ashore with them to carry the guns up the slopes.

The next guns ashore were two 18pdrs of 4 Fd Bty which arrived in mid-afternoon but were sent to sea again by an enthusiastic but misinformed staff officer. One of these guns came ashore again at 5.30pm, this time to an enthusiastic reception as by-standers helped the Gunners and their horses to haul the gun along the beach to a position on a slight mound near the mouth of Shrapnel Valley.

At 6.00pm the first round was fired - first for the Australian Field Artillery in operations in WWl and the first operational round by 2 FAB, the parent of 2 Field Regiment

The problem for the Gunners at ANZAC was the terrain. The steep slopes called for high angle ordnance that would enable the projectiles to clear the innumerable crests. But the AIF had neither howitzers nor mortars, only 18pdr guns having a maximum elevation of 16.5°. As a result, suitable gun positions were difficult to find.

Two weeks after the landing only 20 of the 36 guns had been landed, 4 & 5 Btys of 2 FAB plus 7,8, & 9 Btys of 3 FAB.

The whole of 1 FAB and 6 Bty of 2 FAB were sent to Cape Hellas early in May to support the British and remained there until the Cape was evacuated on 6th January 1916.

A veteran of 6 Bty has told me that men of that Bty were the last to leave Cape Hellas and therefore Gallipoli.

The BC of 6 Bty was Major George Ingram. In March 1916 he was promoted LtCol as CO of 21 FAB(howitzers) and later became CO of 2 FAB in France also in the Militia post war, when the Brigade was located in the Chapel Street Depot. He was the father of our Colonel Commandant, Major-General John Stevenson.

Warm thoughts

Keith Rossi.

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AUSTRALIAN MINERS ALTER THE LANDSCAPE - FLANDERS 1917

In the small hours of 7th June 1917 intermittent artillery fire directed at the German positions increased in intensity around Hill 60, in the Ypres Salient. Suddenly, an awe-inspiring series of explosions tore immense craters in the German front line. When the smoke and dirt settled, Hill 60 had gone and the way was open for a successful attack on the Messines Ridge. The narrative that follows describes

how the lst Australian Tunnelling Company, commanded by Captain Oliver Holmes Woodward MC mined the German positions on and near Hill 60.

O.H. Woodward, M.C. and Bar, embarked with the Australian Mining Battalion on 20 February 1916 for France as a lieutenant in No. 1 Section of No. 1 Company later to be known as the first Australian Tunnelling Company. The company landed at Marseilles on 5 May 1916 and moved to Haze brook in Belgium.

The Australian Tunnelling Companies were parcelled out as Army troops - in this instance to the 2nd Army, British Expeditionary Force. The geological work was carried out by Lieutenant Colonel (later Sir) Edgeworth David. At first attached to the Canadians, the companies were soon engaged in active military mining in the Houplines-Ploegstraat Wood area. Their front sector extended for about three miles. In October the company relieved the Canadians at that historic spot, Hill 60 about 2 1/2 miles south east of Ypres. Their work culminated in an awe-inspiring explosion at 0310 hours on 7 June 1917. Caused by 19 mines and over 600 tons of high explosives the blast blotted out Hill 60, so called because a 60 metre contour line surrounded its crest.

Capitan O.H. Woodward had assembled a firing party opposite Hill 60 consisting of him as officer commanding, two other officers and about 40 sappers. After repeated checks by Royal Engineers of the electrical leads that connected detonators to charges, the Australians did their own tests, using galvanometers to test the circuits and Wheatstone bridges to measure the resistance of the detonators. The last Australians were withdrawn about 2 am on 7 June and Woodward activated the firing circuit at the appointed time.

The Hill 60 operation was a classic example of offensive mining aimed at penetrating enemy positions by laying charges under important enemy tactical features. Defensive mining was usually based on lateral galleries parallel to one's own line and more closely located to the surface. Its depth was generally determined by the water level. At Hill 60 it was about 18 feet.

Geological data indicated water levels varying between summer and winter. The sedimentary layers ranged from tertiary alluvials usually wet to lower eocine alternating dry and wet sands. Lower down (27-36 feet) the layers consisted mainly of clays.

The Hill 60 mining system was divided by the Ypres-Mennin railway line and was the highest elevation in German hands. The other elevation was in no-man's land. The mining system was a mixture of offensive and defensive mining which entailed dug-out construction and subways for the Infantry.

Since silence was essential special digging tools were developed. Progress of 4 to 6 feet every 24 hours was considered satisfactory. Clay kicking was a mining method quite novel to the Australians. The method was developed by sewer construction workers in London. The operator was seated and worked the tool with his legs. The average weekly progress in a standard mine gallery was about 70 feet. The galleries at Hill 60 accomodated shifts of two face men, three shovellers and seven infantry fatigues.

Shaft sinking was confined to sinking steel cylinders through water bearing strata and continuing with framed sets in dry clay. Underlie shafts and crib timber were used through the surface strata. Stepped incline shafts were constructed for dug-outs and machine-gun emplacements.

The magnitude of the mining operations on the Western Front required standardised mine timber. All timber used was oregon pine measuring 9" x 3". The First Australian Tunnelling Company at Hill 60 used about 300 feet per week.

Dirt from the face was shovelled into hempen bags about 2 feet long and 10 inches in diameter and closely tied at the neck. The tactical situation rarely permitted a truck within 100 feet of the face, so over this distance the bags had to be dragged along the timber floor. They were then loaded into trucks which ran along wheel guides acting as tracks and which would take 8 to 10 bags at a time. The track sections were portable and came in 8 foot lengths. In incline shafts, the trucks were hauled to the surface manually and in vertical ones, winched up in slings. The clay coloured the sand bags blue, which made them highly visible to aircraft observation. Utmost care had to be exercised to dispose of them properly. They were either dumped into railway sidings or used for revetting trenches.

Small geared rotary fans provided ventilation. Operated by two men, they supplied up to 300 cubic feet per minute. The delivery pipe was a 3" rubber hose reinforced with wire binding. The fans made quit a bit of noise and their sound carried distinctly along the gallery. As an alternative, 6 foot blacksmith bellows were used. For drainage, general service pumps were used, particularly where the need for silence prohibited the installation of power pumps. The pumps could lift about 80 feet and absorbed a great deal of manpower.

Weekly theodolite surveys updated all new work. Since all galleries were driven as directly as possible to minimise soil disposal, survey work was elementary. The mine system was co-ordinated with Allied trench systems and those of the enemy using aerial photography. All plans were plotted on the co-ordinate system and forwarded

weekly to the Controller of Mines who was the senior mining engineer officer at Army Headquarters. To estimate the charges and the effect of mine explosions, empirical formulas were developed depending on whether it was to produce a crater which could be occupied by troops or to damage the enemy's works above or below ground.

The two measures of critical importance were the crater diameter (D) and the horizontal radius of rupture (HRR). If c was the powder charge in pounds, and s was the soil variable, then c = sxD3 and HRR = 7 x 10c/4 x s, where s varied from 0.8 for very light earth to 2.0 for hard chalk. The crater measurements in the predominant Hill 60 material, blue clay, had a soil constant of 1.60. It was found that ammonal was three to four times as effective as formula gunpowder. Another empirical formula for calculating the amount of ammonal required to produce a crater of a desired HRR was: pounds ammonal = $(HRR)^3/150$.

In a demonstration mine, 84,000 pounds of ammonal was used at a depth of 52 feet in chalk including an overburden of 27 feet of clay and sand to produce a crater of 115 feet in diameter. This showed ammonal to be 3.75 times as powerful as formula gun powder. Based on these experimental data, the 1st Australian Tunnelling Company, now under the direction of O. H. Woodward, proceeded with the mining operation at Hill 60.

The standard mine gallery was 4' 3" x 2' 3" inside the timber frame. For any charge in excess of 1,000 pounds special receiving chambers had to be constructed. The detonators used were Electric No. 3 Mark III containing three grains of mercury fulminate. The detonator was placed in a one- ounce dry gun cotton primer. In each of the large mines there were three circuits with five detonators in series. Two methods of firing were used, a normal exploder and power from a 500 volt DC lighting set. The exploder was used as a fail-safe devise.

The ammonal explosive mixture consisted of 65% ammonium nitrate, 15% TNT, 6% coarse aluminium powder, 1% fine aluminium powder and 3% charcoal.

At Hill 60 two adjacent features were mined for explosion. One was elevated ground referred to as the "caterpiller" and the other the actual contour 60 Hill feature. Under the former, a charge of 70,000 pounds of ammonal was exploded at a depth of 100 feet producing a crater of 273 feet in diameter and 51 feet in depth. The charge under Hill 60 was 45,700 pounds of ammonal and 7,800 pounds of gun cotton. It was exploded at 90 feet below the surface producing a crater of 198 feet in diameter and 33 feet deep.

Other activities associated with this mining venture included use of, for those days, sophisticated

electric testing instuments. Elaborate mine listening instuments such as geophones and other acoustic surveillance methods had been developed to pin point similar enemy mining activities.

The magnitude of the work can be judged from the statistics still available. The project took 63 working days and employed nearly 200 men. Almost 200,000 cubic feet of earth were shifted and an average of 15 cubic of earth was removed per man per day. Total length of galleries was about 2800 feet and more than 500,000 super feet of timber were used.

What was the result? The attack on the Messines Ridge sector supported by, as Woodward claimed, the most perfect Artillery barrage of the war, was completely successful and by 7 June the dreaded Ypres salient had ceased to exist.

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MEMBERSHIP REPORT

The Association is pleased to welcome 2 new members within our ranks. These are, Capt Sir Edward Cohen and Gnr D.N. Lakasis.

We still have a few "missing" members:
Maj J.A.McDonagh
Capt F.J.Young
LBdr S.A.Coxon &
SSgt W.Dobson.

Anyone knowing the circumstances of these members, are requested to contact me.

The committee has approved the deletion of 20 unfinancial members.

Analysis as at 16/2/90.

Life	133
Affiliate	47
Annual Members	
Paid to 6/87	3
Paid to 6/88	21
Paid to 6/89	28
Paid to 6/90 / beyond	153
Total	385

This is after the 20 deletions and the inclusion ofthe 2 new members.

As Membership Secretary I have attempted to bring all members up to date financially. I have had good results but a few are lagging. Unfortunately, I had to recommend to a recent Committee meeting that 20 members be deleted from membership for being unfinancial. If you are in arears still there will be a renewal form included in this newsletter. Please do something about it NOW - don't be a statistic in the next newsletter! Should you need to contact me regarding any membership details please ring on 781-2633 or P.O.Box 309 Frankston 3199 and I will assist you in any way I can.

David Osborne.

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ITEMS OF INTEREST

The President has received the following acknowedgement:

Dear Sir,

I would like to thank you on behalf of myself and the Warrant Officers and Sergeants Mess for your generous donation towards the silver centre-piece of the King's Troop RHA Horse Holder. This unique centre-piece will be commisioned by Carringtons of Regents Street and I believe it will be a lovely reminder of our past heritage. Through your kind generosity I am hoping that we will soon have enough funds to place the order. Once again thank you very much for your kindness

Yours Faithfully

T.A.Lant WO1 (RSM)

The King's Troop RHA

Don't forget

Association Happy Hour at the DANDENONG DEPOT on Friday night 25 MAY 1990 commencing at 1730 hrs.
The Happy Hours are always an opportunity to renew friendships or make new ones.....Please come along and enjoy ours and the serving members company.

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Fire power Demo at Puckapunyal on 20 May 1990. Please contact either the Secretary- Robin Smith on 4356352 or the Treasurer Reg Morrell on 5445868 to book your tickets.

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MUSEUM & MEMORABILIA FUND

With the pending move of the Artillery Depot from Batman Avenue, it is of the utmost importance that the Museum Trust Committee to commence their preparations for the move.
A committee organisation was put in place some 2 or more years ago by the then CDA, Col W.M.Vincent. That committee is now being activated.
The Association is responsible for the nomination of 3 members to that committee. One of our committee members - SSgt Brian Cleeman - has accepted nomination, however it will not be possible to nominate additional members from the RAA Association Committee. It is our request that if there are any members out there, who are interested in stepping into the breech and serving on the Museum Trust Committee we would be grateful if they would advise Keith Rossi at their earliest convenience.

Speaking of the museum fund, if any one has any memorabilia or other items of interest to donate to the trust they can contact Brian

Cleemen on 235 3246 during Business Hours. All items donated will come under the protection of the Associations Museum Trust.

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FROM THE EDITORS DESK

I wish to thank Major Warren Perry for the following letter:

I recently received my copy of CASCABEL for January 1990 which I have read with much interest.

Apart from the subject matter of CASCABEL, the printing is clearer and larger and therefore easier to read. If it is true that "old soldiers never die" it is not true that they can always read with ease, say 8 point Times print.

I like the practice too of publishing in each issue a list of new members. This practice could perhaps be expanded to the publishing once annually of a complete list of members.

The "Colonel McBride" mentioned on the third page - the pages are not numbered - is presumably a reference to Lt Col H.W.C. MacBride (1892-1941) of the Australian Staff Corps. He served in the War of 1914-1918 with the Australian Siege Artillery Brigade and at the cessation of hostillities on 11 Nov 1918 was the Adjutant of this Brigade. He died at Randwick in NSW on 27 Jan 1941 while still on the active list. I remember him as a kind and friendly person who exercised his powers of command effectively without "throwing his weight about".

A good newsletter, with an attractive layout and good contributions, including the Presidential and Editorial announcements etc., is an essential element in sustaining a strong and vigorous Association.
Yours etc.....

I hope Maj Perry doesn't mind my reproducing his letter in full as it addresses some very pertinant points. Firstly it gives me feedback on the presentation of our magazine, secondly it suggests how we can improve it both for content and layout and finally, it allows for a forum by commenting on or detailing points about a previous article. Two specific points I have noted are the inclusion of page numbers (see the bottom of the page) and the production of a full list of members names. This may not be easy as we have 385 members. We would need to produce a mini phone book. If it is the will of the membership to produce this list please let me know. Please write with comments, suggestions and articles. All correspondance for CASCBEL can be forwarded to

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