

7. The German Offensives

The year 1918 saw a gradually worsening military situation following the effective withdrawal of Russia from the war, which allowed the Germans to reinforce the Western Front. Far from being able to renew the Ypres Offensive, the British armies in France found themselves preparing to face a German offensive. Although the final year of the war saw the introduction of fewer new technologies, it saw the proliferation of technologies introduced in earlier years, and tactics to take advantage of them, leading to the final progression from trench warfare into modern semi-open warfare.

As in the previous year, a number of organisational changes occurred over the winter, the most important of which was the consolidation of all five Australian divisions into a single Australian Corps under command of General Sir W.R. Birdwood.¹ The Australian government had been pressing for this since July 1917,² but had been refused on the grounds that a corps of five divisions would be unwieldy.³ This issue was sidestepped for the time being by designating the 4th Division as a depot division.⁴ The Australian government also insisted that all command and staff positions be held by Australians. This would take time to effect, but the result would be an Army more thoroughly Australian than ever. And an army it was, it all but name: on 31 March 1918 a staggering 122,426 Australian soldiers, including 483 nurses, were in France.⁵

During 1917 the mechanical transport had gradually been Australianised. The 1st and 3rd Divisions had brought their own transport from Australia. Three auxiliary mechanical transport companies, sent from Australia in December 1916 for the purpose, were broken up to complete the mechanical transport of the 2nd and 5th Divisions. The 4th Division's mechanical transport was finally Australianised by 28 October 1917.⁶ On 12 March 1918 Colonel W.H. Tunbridge, the AIF's Director of Mechanical Transport Services, reorganised the mechanical transport, disbanding the Ammunition Sub Parks and Supply Columns and creating six mechanical transport companies available for any kind of hauling.⁷ Not only was the new arrangement more flexible, but he also took the opportunity to standardise on just four models of trucks. Two companies were equipped with Peerless, three with Daimlers and one with Thornycrofts. The 3rd, 6th and 12th Field Artillery (Army) Brigade Park Sections were equipped with the Peerless. Enough men were left over to form the 1st and 2nd Siege Battery Ammunition Columns, which

¹ Birdwood had been promoted to the rank of full general on 28 October 1917

² Letter, Governor General to Secretary of State for Colonies, 30 July 1917, AWM252 A197

³ Letter, Secretary of State for Colonies to Governor General, 12 September 1917, AWM252 A197

⁴ Letter, Secretary of State for Colonies to Governor General, 13 November 1917, AWM252 A197

⁵ *Australian Imperial Force - Statistics of Casualties etc.*, p. 22

⁶ War Diary, I Anzac Corps SMTD, 28 October 1917, AWM26 227/26

⁷ AIF Order 1159, 12 March 1917

were equipped with Albions. Standardisation would henceforth pay dividends in terms of both training and maintenance.⁸

Trench mortar batteries were also reorganised, on 21 February. The three medium batteries in each division were reorganised as two medium batteries each with six 6 inch Newton Mortars, which had replaced the 2 inch Mortar in 1917. The new 6 inch Newton could fire a 21 kg bomb up to 1,300 metres.⁹ It could use either the type 105 time fuse or the new type 110 percussion fuse that was extremely effective against wire.¹⁰ Retention of the big 9.45 inch heavy mortar was under consideration,¹¹ the commander of the 2nd Division reporting that:

The heavy trench mortar has proved its value under certain conditions. These conditions are very limited. In this division, the only occasions when the 9.45 inch mortar has been really useful were when we held the Ypres salient in September 1916.¹²

In the end, the divisional heavy trench mortar batteries were disbanded and a single battery of six 9.45 inch mortars was retained under Corps Heavy Artillery control.¹³ What is noteworthy here is a new meme, a contingency theory of weaponry, under which the usefulness of a weapon or arm depended on the circumstances, was gaining currency. Formerly, there had often been an aspect of traditionalism about weapons. Increasingly, the evaluation of weapons would be devolved to the lowest level, and the task at hand would determine the decision.

Machine guns were also reorganised yet again on 2 March when the four companies in each division were formed into Machine Gun Battalions, each with 64 Vickers medium machine guns under divisional control, while the Division Machine Gun Officer was upgraded to a lieutenant colonel. Although his responsibilities remained mainly training and technical, he could and would control the disposition of machine guns at the front, aided by his own signal section.¹⁴

A new sapper unit arrived during the winter, the 1st Army Troops Company. The only unit of its kind in the AIF, it was a general purpose engineering unit a little smaller than a field company. This unit gave the corps troops engineering expertise of their own, without having to borrow field or tunnelling companies. New signal units were formed on 19 February - the Australian Corps Signal Company, the 1st and 2nd Cable Sections,

⁸ Letter, SMTO to DA&QMG Australian Corps, 16 April 1918, 3DRL2316/27

⁹ Gower, *Guns of the Regiment*, pp. 180-181

¹⁰ "Correspondence - Reports and Instructions and Description of Material regarding Trench Mortars", AWM25 973/44;

"Report on Wire Cutting Tests", AWM25 973/9

¹¹ "Trench Mortar Batteries - General 1917", AWM25 973/10

¹² GOC 2nd Division to GOC I Anzac Corps 1 November 1917, AWM25 973/11

¹³ BGGS Australian Corps, General Staff Circular No. 5, 25 January 1918, AWM25 721/41

¹⁴ MGGS British Fourth Army GS14/4 15 April 1918, AWM25 348/15

and the 1st and 2nd Airline Sections - while on 2 April the Australian Corps Wireless Section became an independent unit.¹⁵ The proliferation of wireless technology would be important in controlling open warfare.

Three squadrons of the Australian Flying Corps had been sent to Europe in 1916 for service on the Western Front, the 3rd Flying Squadron arrived in England on 28 December 1916, the 2nd on 30 January 1917 and the 4th on 27 March. On 24 August 1917, the 3rd Flying Squadron, equipped with RE8s, moved to France, with the 2nd followed on 21 September and the 4th on 18 December. The latter two squadrons were trained as fighter squadrons, the 2nd being equipped with the SE5a from January 1918 and the 4th with the legendary Sopwith Camel.¹⁶ On 15 November 1917, the 3rd Flying Squadron became the Corps squadron of I Anzac Corps.¹⁷ A small gesture in itself, this would have a great impact on Australian military thinking. Henceforth the flying squadron commander would attend corps conferences and air and ground operations would be closely coordinated. The down side to this was that most senior officers' acquaintance with the air arm was with the 3rd Flying Squadron (or the 1st in Palestine) and after the war they continued to think of the Air Force as an arm rather than a service.¹⁸

On 21 January the British Army, short of reinforcements, reduced the divisions on the Western Front from 12 infantry battalions to 9, a step already taken by the German and French Armies. The effect was to increase the ratio of other arms to infantry.¹⁹ The War Office urged the AIF to follow for the sake of uniformity but the AIF, short of reinforcements too but not so badly, elected to defer the decision. The Australians felt strongly that the 12 battalion organisation was superior as it allowed a brigade to have two battalions forward and two in reserve.²⁰ The Canadian and New Zealand armies likewise remained on the 12 battalion establishment.

The platoon organisation was changed to a Lewis gun section and three rifle sections. In April BEF GHQ decided to increase the number of Lewis guns per infantry battalion, initially to 20 and ultimately, in June, to 32. Army commanders were asked to nominate divisions suitable for the immediate receipt of extra guns. All five Australian divisions were so nominated. For the moment, each company was given an extra Lewis gun, available as a tactical reserve.²¹ In addition, each infantry battalion, field company and

¹⁵ AIF Order No. 1124, 19 February 1918; AIF Order No. 1200, 2 April 1918

¹⁶ Cutlack, *VIII: The Australian Flying Corps*, pp. 175-178, 213

¹⁷ Wrigley, *The Battle Below*, p. 41

¹⁸ Stephens, "The Odd Couple: Army/Air Force Relations", *From Past to Future*, p. 143. The Australian Flying Corps became the RAAF in 1921.

¹⁹ Letter, War Office to FM C-in-C BEF, 15 February 1917, AWM45 27/8

²⁰ AWM25 721/75 contains the correspondence regarding this matter

²¹ BGGs Australian Corps, 11 April 1918, AWM26 345/8

field battery was given four, and each tunnelling company two, Lewis guns for antiaircraft purposes.²²

Not all technical and tactical ideas were winners. Lieutenant F. Brand of the 7th Light Trench Mortar Battery conducted experiments in the use of the Stokes Mortar as an antiaircraft weapon in November 1917. The Stokes was fired with barrel and base plate only, the number one positioning the mortar by hand, using a sight he improvised.²³ I Anzac Corps School carried out further tests. The general impression of this innovation was summed up by Brigadier General Charles Rosenthal, who felt that, given the lack of a reliable fuze, the variation in range and the slowness of the bomb relative to an aircraft, it was most unlikely that an enemy aircraft could ever be brought down by a Stokes Mortar.²⁴

It was a sign of increased antiaircraft precautions, not restricted to units at the front, who were enjoined not to congregate in groups of more than 250,²⁵ but which extended back to the Australian Corps Schools, the General Base Depot at Le Havre and even the AIF Administrative Headquarters back in London.²⁶ Low flying aircraft could now expect to be shot at by the ground forces. On 27 April the 7th Infantry Brigade reported that it had 2 Vickers and 26 Lewis guns detailed for antiaircraft duties in its sector.²⁷ While the number of enemy aircraft shot down by ground fire each month was low (only 6 by antiaircraft guns and 3 by small arms in June by the whole of the BEF),²⁸ the whole effort was made worthwhile on 21 April when Australian Vickers and Lewis gunners fired on and apparently shot down the legendary Red Baron, Captain Manfred von Richthofen.²⁹

The British Army was expecting the Germans to attack, although not necessarily against its front, and had a good idea of the form that the attack would take. The Germans attempted to obtain strategic surprise by quickly deploying large numbers of troops from reserve. Their guns did not fire until the day of the attack and there was minimal registration activity. Instead of a long preliminary bombardment, there was a short one

²² BGGS Australian Corps, 19 July 1918, AWM26 361/3; BGGS Australian Corps, 22 July 1918, AWM26 361/3; "Organisation of an Infantry Battalion", June 1918, 3DRL2316 28/2

²³ OC 7th Light Trench Mortar Battery 5 November 1917; GOC 7th Infantry Brigade 6 November 1917, AWM25 15/16 "Results of Experiments Carried out by I Anzac Corps School in use of Stokes Mortar against low-flying Aircraft"

²⁴ Col GS, 1st Division 12 August 1917; Lt Col GS I Anzac Corps 23 October 1917; Lt Col GS 1st Division 2 November 1917; GOC 1st Division 19 January 1918, AWM25 973/11 "Stokes Mortars vs Aircraft"

²⁵ GS 5th Division, 28 June 1918, AWM26 424/5

²⁶ Lt Col Commandant of Australian Corps Schools 2 August 1918, AWM25 15/1, "General Instructions for Protection from Enemy Bombing"; War Diary of Australian General Base Depot 31 May 1918, AWM25 15/1; "General Instructions for Protection from Enemy Bombing"; Commandant of Australian Corps Schools 22 July 1918, AWM25 15/10 "Enemy Aircraft - Action to be taken in Event of an Air Raid"

²⁷ OC 7th Infantry Brigade 27 April 1918, AWM26 385/5

²⁸ "Summary of Aircraft Destroyed by BEF Ground Forces", AWM26 408/5

²⁹ "Report on Destruction of Baron von Richthofen's Aeroplane" 22 April 1918, AWM26 348/17.

of several hours of extreme violence, making full use of the ability of their trench mortars to deliver a huge volume of explosive in a short time. They also made extensive use of lethal Green Cross. The German artillery attempted to silence the British with counterbattery fire while pioneers cut the wire with wire cutters. The initial attack was made by specially trained assault troops who exploited gaps while avoiding strong points, leaving them for follow up units.³⁰ The Germans put a great deal of emphasis on the initiative of both junior and senior commanders and expected the offensive to be carried on for 8 kilometres or more.³¹

The British line lay simply where the offensives of 1917 had come to an end and was in no way chosen for defensive value. Particularly vulnerable were the British Fourth Army holding the Ypres salient, and the British Fifth Army holding the long Somme sector recently handed over by the French. The BEF had a lot of work to do. Wire entanglements were laid, blockhouses, dugouts and machine gun and observation posts constructed, and trenches dug. Defences were also prepared against aircraft and tanks, which the enemy was now known to possess.³² Such work occupied much of the time and greatly hampered training, but by aggressive patrolling of No Man's Land the Australian infantryman got training in the war he would actually have to fight.³³

The British adopted the German defensive scheme which had earned their grudging respect at Third Ypres. As in 1917, the front was organised in three lines but held much more lightly. The forward zone was a screen of barbed wire covered by machine gun posts. The battle zone was where the main fighting was intended, and this consisted of a series of defended localities. The rear zone was a fall back and rallying line.³⁴ The doctrine was a good one, but there was too little time to inculcate it into the British Army. The German system relied on junior commanders at the front to launch counterattacks on their own initiative. This meant that the new doctrine had to be promulgated to and thoroughly understood by all levels of the British Army, a tall order. Most commanders continued to hold the forward zone too heavily and spend too much time on it, to the detriment of works in the battle zone.³⁵ All of which has led some commentators to suggest that the British Army might have been better off with the older, more familiar, system, which had worked well enough for the Australians at Lagnicourt.³⁶

³⁰ "Note on Enemy Intentions on Fifth Army front", 26 February 1918, AWM26 351/4

³¹ "Notes 25/1/1918 and 8/2/1918 by Ludendorff dealing with Tactics to be employed in the Offensive", undated, AWM26 440/9

³² Bean, V: *The AIF in France: During the Main German Offensive 1918*, pp. 90-92

³³ "Australian Corps - Narrative of Operations March 20th to April 30th", undated, AWM26 360/6

³⁴ Gudmundsson, *Stormtroop Tactics*, pp. 156-157

³⁵ Bean, V: *The AIF in France: During the Main German Offensive 1918*, p. 90

³⁶ Wynne, G.C., "The Development of the German Defensive Battle in 1917 and its Influence on British Defence Tactics", pp. 15, 32

On 21 March the German attack fell on the British Third and Fifth Armies. Holding a long front with few reserves, the commander of the British Fifth Army, General Sir H. de la P. Gough, had only one card up his sleeve. Immediately before the attack, the artillery battery positions were changed, thus saving many of his outnumbered guns from destruction or neutralisation.³⁷ The Germans were soon taking casualties from defensive artillery and machine gun barrages. Because of the broad front of the German attack, however, these were too thin in many sectors and often not timely. A morning mist, normal for the region at that time of year, screened the advance. The defended localities were generally emplaced on higher ground leaving the valleys defended only by fire.³⁸ Without observation, they became dead ground and infiltrating stormtroopers were able to penetrate the battle zone, bypassing the defended localities. In some cases the mist also prevented the SOS signals from being seen.³⁹ By nightfall, a general withdrawal was in progress,⁴⁰ and units fighting rearguard actions for the first time made many tactical errors. Some fought to the finish rather than retreat while others withdrew without a fight. The need to cover the withdrawal with fire was neglected. Too much attention was given to keeping a continuous line, resulting in local penetrations that triggered general withdrawals.⁴¹

The next day the German advance continued and semi-open warfare resumed on the Western Front. Orders were issued for the destruction of ammunition and the demolition of bridges.⁴² During the German withdrawal of 1917 the British Army had found, to its dismay, that it had become rusty at open warfare. This time things were much worse, because whereas in 1917 units could simply opt out of open warfare with a less vigorous pursuit, now the Germans were forcing the pace.

Cooperation with the Royal Air Force soon failed due to lack of communications, in particular the cutting of unburied telephone lines by German artillery. As the front moved there was insufficient time to lay lines, let alone bury them, and the cable sections were unused to their new role in open warfare. As in 1917, units deprived of telephones were slow to switch to visual and wireless communications.⁴³ No special transport was supplied for the wireless sets and retreating artillery units lost or damaged their radios or did not have the time to erect new radio masts.⁴⁴

³⁷ British Fifth Army War Diary, 21 March 1918, AWM26 351/4

³⁸ GHQ, "Notes on Recent Fighting No. 1", 5 April 1918, AWM26 345/6

³⁹ MGRA British Fourth Army, "Artillery in the Recent Fighting", 21 March 1918, 3DRL2316 27

⁴⁰ British Fifth Army War Diary, 21 March 1918, AWM26 351/4

⁴¹ GHQ, "Notes on Recent Fighting No. 1", 5 April 1918, AWM26 345/6

⁴² British Fifth Army War Diary, 22 March 1918, AWM26 351/4

⁴³ GHQ, "Notes on recent Fighting No. 8. Signal Communications", 28 April 1918, AWM26 345/11

⁴⁴ GHQ, "Notes on Recent Fighting No. 5. Artillery", 21 April 1918, AWM26 345/9

The 3rd, 4th and 5th Divisions were ordered to join the battle on 25 March. Corps would not follow until 5 April so for two weeks individual divisions and brigades fought separate battles under different British commands.⁴⁵ Brigade groups were thrown into the battle as they arrived and in some cases would spend weeks separated from their divisions. What the AIF brought to the battle was fresh, strong, veteran divisions with training and experience in open warfare from the previous year. The high degree of initiative that it granted to junior leaders would also serve the cause well.

On 9 April the Germans had launched a second offensive on the Lys sector near Armentieres, and headed for the major rail junction at Hazebrouck. Australian units that had not yet left for the Somme were thrown in to the fight and the 1st Division, which had only just arrived there, was rushed back. On the Somme, the Australian met an enemy advance that had already halted. On the Lys, the 1st Division helped stop the advance.

The field artillery was out of practice in limbering up quickly. Nor was the heavy artillery mobile enough. Want of tractors, which had been centralised at corps level, caused the unnecessary loss of heavy artillery pieces. In just one week the British Fifth Army lost 601 18 pounders, 44 4.5 inch howitzers and 81 heavy pieces.⁴⁶ The cumbersome 8 inch and 9.2 inch howitzers proved completely unsuitable for mobile warfare so the Australian Corps Heavy Artillery concentrated them into a Reserve Brigade.⁴⁷ Arrangements were made to place a siege artillery brigade directly under each divisional GOCRA. Both field and heavy artillery found the 6 gun battery unwieldy in open warfare conditions and batteries attached to divisions or designated as a mobile reserve reduced themselves to a four gun establishment by leaving a two gun section behind.⁴⁸

To many arms and branches it must have seemed like a general reversion to the 1914 organisation which had, after all, been tailored to open warfare conditions. The division ammunition columns needed to be broken back down into brigade ammunition columns,⁴⁹ and the machine gun battalions back into companies.⁵⁰ The machine gunners were deemed to have paid too much attention to indirect fire, neglecting the power of the Vickers gun in direct enfilading fire, so corps headquarters ordered that not more than one fifth of all ammunition for the machine gun should be used for barrage fire.⁵¹

⁴⁵ "Australian Corps - Narrative of Operations March 20th to April 30th", undated, AWM26 360/6

⁴⁶ British Fifth Army War Diary, 22 March 1918, AWM26 351/4

⁴⁷ GHQ, "Notes on Recent Fighting No. 5. Artillery", 21 April 1918, AWM26 345/9

⁴⁸ BGHA Australian Corps, "Instructions in the event of Moving Warfare", 19 June 1918, AWM26 364/11;

MGRA British Fourth Army, "Artillery in the Recent Fighting", 21 March 1918, 3DRL2316 27

⁴⁹ MGRA British Fourth Army, "Artillery in the Recent Fighting", 21 March 1918, 3DRL2316 27

⁵⁰ MGRS British Fourth Army GS14/70 16 April 1918, AWM25 348/15

⁵¹ BGGs Australian Corps 8 April 1918, AWM25 360/3

Even the long dormant mounted arm had a brief revival; the 4th Division Artillery used mounted artillerymen to form its own cavalry screen, there being no light horse available,⁵² and one of the first orders of the Australian Corps Headquarters when it arrived on the Somme sector was to attach a troop of light horse and a platoon of cyclists to each division.⁵³

There was of course no intention of reverting to 1914 tactics or technologies. The Australian tactical conception was "one of stubborn defence coupled with strong counterattacks".⁵⁴ On 30 March the Germans made three assaults on the 3rd Division near Morlancourt, assisted by low flying aircraft. Enfilading Vickers guns, Lewis guns, rifles and field artillery repulsed the attacks.⁵⁵ The Australians, shielded from view by the morning mist, let the enemy approach to within close range before opening fire.⁵⁶ Some field batteries fired over open sights, a new experience for the 3rd Division Artillery.⁵⁷ When a German battery attempted to do the same, 60 pounders promptly engaged it. The tactic of letting the Germans get close before opening fire was repeated by the 35th Infantry Battalion near Villers-Bretonneux on 4 April and the 8th Infantry Battalion on the Lys front shortly after midnight on 13 April, when a company of Germans was allowed to march to within 20 metres before the Australians opened up, killing 21 Germans and putting the rest to flight.⁵⁸

The standard German attack formation was to have a light machine gun group up front, followed by the rest of the assault platoon in wave formation, and then the rest of the company or battalion in files. When the British were encountered, the files would redeploy into waves.⁵⁹ On 4 April a lone Vickers gun crew of the 15th Machine Gun Company encountered a battalion of Germans marching across fairly open country in a column of fours, engaged the column and dispersed it.⁶⁰ In less spectacular form, this became another standard Australian counter-tactic: enfilading attacking German waves with Vickers and Lewis gun fire. The digger supplemented his allotment of automatic weapons with captured weapons,⁶¹ Lewis guns taken from retreating British troops,⁶² and weapons salvaged from the battlefield.⁶³ In a 19 day period, for example, the 13th

⁵² "Narrative of Operations (B) Field Artillery, Third Period March - September 1918", undated, File AWM25 75/6

⁵³ "Australian Corps - Narrative of Operations March 20th to April 30th", undated, AWM26 360/6

⁵⁴ BGHA Australian Corps, "Instructions in the event of Moving Warfare", 19 June 1918, AWM26 364/11

⁵⁵ War Diary, 3rd Division, 30 March 1918, AWM26 387/2

⁵⁶ Letter, MG Monash to G Birdwood, 30 March 1918, File 3DRL2316 27

⁵⁷ Monash, *The Australian Victories in France*, p. 33

⁵⁸ Bean, V: *The AIF in France: During the Main German Offensive 1918*, pp. 233, 319, 465

⁵⁹ "Notes on Recent Fighting No. 13: German Tactics in the Attack", 4 June 1918, AWM26 345/16

⁶⁰ Letter, Brigadier General H.E. Elliott to Lt Col A.M. Ross, 21 May 1918, AWM26 439/1

⁶¹ GOC 7th Infantry Brigade 4 July 1918, AWM26 386/5

⁶² Bean, V: *The AIF in France: During the Main German Offensive 1918*, p. 467

⁶³ Bean, V: *The AIF in France: During the Main German Offensive 1918*, p. 313

Infantry Battalion wore out 10 Lewis gun barrels and fired 200,000 rounds.⁶⁴ Thus, the tactical ideas of the diggers were in accord with their leaders in their belief in the value of firepower in general and automatic weapons in particular.

The 4th Division found itself defending a steep embankment overlooking the Ancre River. A forward slope defence would have been difficult to reinforce or recover by counterattack during daylight, troops would have to cross the crest to reach the front line, and if any part of the line was captured the Germans would be able to enfilade the rest from above, but a reverse slope defence would allow the Germans to cross the Ancre unopposed and mass on the other side hidden by the embankment. Therefore, the 4th Division chose to establish outposts on the embankment with the main position on the reverse slope. The Australian artillery, warned of a probable attack on 5 April, fired two counter-preparation shoots and, on the morning of the attack, fired on the SOS lines at a slow rate. German artillery and trench mortars, using a mixture of gas, shrapnel and high explosive, strongly but blindly bombarded the Australian positions. They managed to penetrate the front and pour through, capturing a machine gun section before it could fire a shot, but their penetration was a narrow one and they were engaged by Vickers and Lewis guns, Stokes mortars and rifle fire. At 1700 the infantry made a counterattack in depth.⁶⁵ In view of the supporting gunners, the infantry swept forward in one great wave. They were met by a storm of machine gun fire. Nonetheless, the Australians drove the Germans back,⁶⁶ the Australian infantry losing about 1,000 men.⁶⁷ Meanwhile, the Australian artillery came under fire from German "area" shoots - off the map fire at the place where the Germans knew they had to be - with shells using instantaneous fuzes.⁶⁸ They lost 153 men and 5 guns to German shellfire. In reply, the Australian artillery fired some 23,320 rounds of 18 pounder and 5,268 rounds of 4.5 inch howitzer ammunition.⁶⁹

The town of Villers-Bretonneux, strategically important because it dominated the important railway centre of Amiens, was the scene of two counterattacks by Australian troops, the first on 4/5 April. The 9th Infantry Brigade's recent training had been devoted almost entirely to musketry and Lewis gunnery and made superb use of both weapons. One company alone fired 330 Lewis gun magazines and 3,000 rifle rounds.⁷⁰ A second, more famous, counterattack was carried out on 25 April 1918 in response to a German attack that captured Villers-Bretonneux from the British. As he had at Polygon Wood,

⁶⁴ Operations Report, Dernancourt, 5 April 1918, AWM26 407/13

⁶⁵ DADOS 4th Division 10 May 1918, AWM26 408/14

⁶⁶ Bean, V: *The AIF in France: During the Main German Offensive 1918*, pp. 403-5

⁶⁷ Bean, V: *The AIF in France: During the Main German Offensive 1918*, p. 412

⁶⁸ Left Group, Australian Field Artillery, Narrative of Operations on 5 April 1918, AWM26 409/7

⁶⁹ "Summary of Events During Battle of 5 March [sic] 1918", AWM26 409/6

⁷⁰ OC 33rd Infantry Battalion, "Report on Defensive Operation East of Villers-Bretonneux April 4-5 1918", 6 April 1918, AWM26 393/2

Brigadier General H.E. Elliott of the 15th Infantry Brigade formed a special counterattacking force and placed it under a trusted subordinate, on this occasion Lieutenant Colonel H.T.C. Layh of the 57th Infantry Battalion, who had distinguished himself at the landing at Gallipoli. Elliott's method of giving complete control to a colonel at the front closely resembled the German system of command and control.⁷¹ He gave Layh a troop of the 13th Light Horse Regiment, the 59th Infantry Battalion and a British horse artillery battery and orders to locate the enemy. In the German Army a counterattack in depth would have followed under the cover of the morning mist but Elliott was dealing with the British Army and his superior, Major General J.J.T. Hobbs, the commander of the 5th Division, could not obtain the required permission.

Instead of a quick counterattack in depth, a methodical counterattack had to be made by the 13th and 15th Infantry Brigades that night to recapture Villers-Bretonneux by means of a double envelopment. This allowed the Germans to bring up machine guns and trench mortars and relieve their tired troops with fresh ones. Nor was Elliott placed in overall command, so the two brigades moved independently. The approach involved a long night march in the mist over unfamiliar ground with hollows containing pockets of gas. Lieutenant Colonel Norman Marshall called a halt on the start line to reorganise and wait for the late companies, delaying the start for over an hour.⁷² A burning building in Villers-Bretonneux provided a landmark to keep direction by, and German units gave away their locations by firing flares that were sometimes confused with the SOS signal, three vertical white lights.⁷³ Enemy seen were fired on by Lewis gunners, shooting from the hip.⁷⁴ The advance was up a slope and casualties were light as enemy fire tended to be high. Elliott felt that the German machine guns were located too close to Villers-Bretonneux, allowing them to be masked.⁷⁵ The Australians tended to rush machine guns from the front rather than attempt to work around them, and bayonets were used extensively in the close fighting. As they reached the old British positions, barbed wire caused men to bunch up, which left gaps between units.⁷⁶ Some men pushed on past the German posts and some attacked them, as there were no designated moppers-up.⁷⁷ At daybreak, the Australians wished they had more ground flares to signal the "friendly" aircraft that were bombing them and artillery that was shelling them.⁷⁸

⁷¹ Lupfer, Timothy T., "The Dynamics of Doctrine: The Changes in German Tactical Doctrine During the First World War", *Leavenworth Papers*, No 4, US Army Command and General Staff College, Fort Leavenworth, Kansas, 1981, p. 19

⁷² Personal Narrative by Lieutenant Colonel N. Marshall, AWM26 438/5

⁷³ Personal Narrative by Captain H.D.G. Ferres, AWM26 438/5

⁷⁴ "Counter Attack on Villers-Bretonneux - Points Noticed". Personal Narrative by Sergeant H.G. Wilson, AWM26 438/5

⁷⁵ Letter, BG Elliott to Lt Col A.M. Ross, 21 May 1918, AWM26 439/1

⁷⁶ "Counter Attack on Villers-Bretonneux - Points Noticed". Personal Narrative by Sergeant H.G. Wilson, AWM26 438/5

⁷⁷ Personal Narrative by Lieutenant R.D. MacFarlane, AWM26 438/5

⁷⁸ Personal Narrative by Captain F.C. Dawson, AWM26 438/5;
Report on Operations by Lieutenant Colonel N. Marshall, AWM26 438/5

The German Offensives of March and April 1918 cost the British Expeditionary Force 303,000 men. The French, in coming to their rescue, lost 92,000 men, for a total of 395,000 allied casualties. The Germans lost 378,000 men but the degree of disruption to the British Army was far greater than anything suffered by the much larger German Army. Nine of the BEF's 60 divisions were written off. Australian casualties between 21 March and 7 May came to 15,083. Although light compared with British losses, this caused the 36th, 47th and 52nd Infantry Battalions to be disbanded, reducing the 9th, 12th and 13th Infantry Brigades to the three battalion establishment.⁷⁹

Organisation of an Infantry Battalion
(Other Ranks only)
(From 22 June 1918)⁸⁰

		Minimum	Maximum
Battalion Headquarters			
	Fighting Portion	72	
	Sergeant Instructors	6	
	AA Lewis Gun Section	13	
	Administrative	61	
TOTAL		152	
4 x Company Headquarters	Fighting Portion (23 each)	92	
	Administrative (4 each)	16	
TOTAL		108	
16 x Platoon Headquarters	(3 each)	48	
32 x Rifle Sections	(7 minimum, 11 maximum)	224	352
16 x Lewis Gun Sections	(11 minimum, 15 maximum)	176	240
TOTAL		448	640
GRAND TOTAL		708	900

To avoid disbanding more battalions, or even a division, the establishment of other ranks per battalion was reduced (in line with the British Army) from 976 to 900. When the required cadre was left behind at the depot, this meant a fighting strength of 708 other ranks. In addition, each battalion still had an establishment of 38 officers, of whom 17 had to be left behind. The total nominal strength of a battalion in action was

⁷⁹ Bean, V: *The AIF in France: During the Main German Offensive 1918*, pp. 656-659

⁸⁰ "Organisation of an Infantry Battalion", June 1918, 3DRL2316 28/2

therefore 729. This necessitated a new platoon organisation from 22 June 1918 that contained a Lewis Gun Section with 11 men and two 7 man rifle sections.⁸¹

Monash believed strongly that the fighting power of the infantry battalion was in its firepower, not its raw numbers. He wrote:

I am convinced that we can carry on successful battle operations so long as we can maintain our battalions at an average of something like 700 or 750.⁸²

However, even these numbers could not be maintained, average numbers of other ranks in the infantry battalions dropping from 706 on 17 August to 653 on 31 August. In September and October 1918 eight more infantry brigades had to be reduced to three battalions, leaving only the original four brigades with four battalions.⁸³

In his firepower philosophy, Monash differed strongly with the BEF's Director of Training, Lieutenant General Sir Ivor Maxse, who held that 900 strong battalion "fire units" were essential. In a conference towards the war's end, Monash told him bluntly:

We can fight with less than 900 per battalion and have done so.⁸⁴

Monash had arithmetic on his side. Excluding the anti-aircraft section and the administrative overhead, and assuming that everyone else but the Lewis gunners and their assistants was carrying rifles, the rifle strength of the 708 strong battalion was about 580. The 16 Lewis gun sections each had the firepower of 80 rifles, so the Lewis guns represented 1,280 rifle fire units, or 68% of the firepower of the battalion. The extra 192 men to bring it up to 900 only increases the firepower by 10%, while increasing the number of soldiers subject to acquisition by 27%. The problem that the AIF encountered with battalions smaller than 700 men was in the ability to carry enough ammunition forward, as the 15 man Lewis gun section carried 64 Lewis gun magazines but the 11 man minimum section carried only 40.

As a result of the German counterattack on Villers-Bretonneux, the Australian Corps took over the entire British Fourth Army front,⁸⁵ with all four divisions in line.⁸⁶ For the next three months the AIF waged a war of attrition. Artillery was used for harassment and interdiction shoots. These missions, on which the corps heavy artillery expended an average of over 200 tonnes per day, involved firing on enemy road and rail traffic, work

⁸¹ "Organisation of an Infantry Battalion", June 1918, 3DRL2316 28/2

⁸² "Organisation of an Infantry Battalion", June 1918, 3DRL2316 28/2

⁸³ GOC Australian Corps, 23 September 1918, AWM25 491/7 for disbandment of the 19th, 21st, 25th, 37th, 42nd, 54th and 60th Battalions; BG DA&QMG Australian Corps, 18 October 1918, AWM25 491/10 for disbandment of the 29th Infantry Battalion

⁸⁴ Notes of Conference with Australian Corps Commanders 5 November 1918, 3DRL2316 30

⁸⁵ British Fifth Army became British Fourth Army on 2 April 1918. War Diary, GS British Fourth Army 2 April 1918, AWM45 21/8

⁸⁶ "Australian Corps - Narrative of Operations March 20th to April 30th", undated, AWM26 360/6

parties and generally anything that moved. The objective, to inflict casualties and make maintaining troops in the forward area as difficult as possible, was now standard procedure. However, the daily fog, especially in the Somme and Ancre valleys, hampered aeroplane observation while prevailing westerly winds frustrated the sound rangers, rendering accurate counter battery fire difficult.⁸⁷

The fluid nature of warfare in April precluded the use of the 8 and 9.2 inch howitzers but as the front settled down it became possible to emplace them again and they rejoined the fight in May. The Corps artillery now included a couple of batteries of 12 inch guns whose enormous range was useful against distant targets. The gunners routinely used type 106 fuzes for all types of missions, ignoring the delayed action fuzes.⁸⁸ Type 106 fuzes were now used on counter battery missions where possible, in conjunction with lethal and lachrymatory gas.⁸⁹ Tests found that the 106 fuze was also superior for smoke shell.⁹⁰ Indeed, serious thought was being given to discontinuing shrapnel altogether.⁹¹

At this time, air recuperators began to become available for the 18 pounders, replacing the troublesome springs. The air recuperators were pairs of cylinders, one at high pressure and one at low. On recoil the hydraulic fluid would be forced by a ram (piston) into the high pressure cylinder that was filled with air and hydraulic fluid. When the recoil ceased, the compressed air would force the oil back into the low pressure chamber and restore the gun to its position, hence the name.⁹² The air recuperator enabled 18 pounders to shoot at ranges up to 9,200 metres and meant that 18 pounders could be used for tasks that formerly required the heavy artillery.⁹³ Unfortunately, there were not enough available to equip all the guns with them. In addition to artillery, aircraft, machine guns, rifle grenades and trench mortars were also used for harassment and interdiction tasks where possible.

⁸⁷ MGGS British Fourth Army to GOC Australian Corps 30 May 1918, AWM26 349/7; CBSO Australian Corps, "Notes on Counter Battery Work in the Battle of 8/8/18 and the advance from Villers-Bretonneux to the Hindenburg Line", October 1918, AWM26 494/2

⁸⁸ MGGS British Fourth Army G66/2, AWM26 349/3

⁸⁹ CBSO Australian Corps, "Counter Battery - Australian Corps Heavy Artillery - Operation Order No. 7", 1 July 1918, AWM26 362/2

⁹⁰ GOCRA Australian Corps, 13 July 1918, AWM26 365/4

⁹¹ GOCRA Australian Corps, 30 May 1918, AWM26 365/10

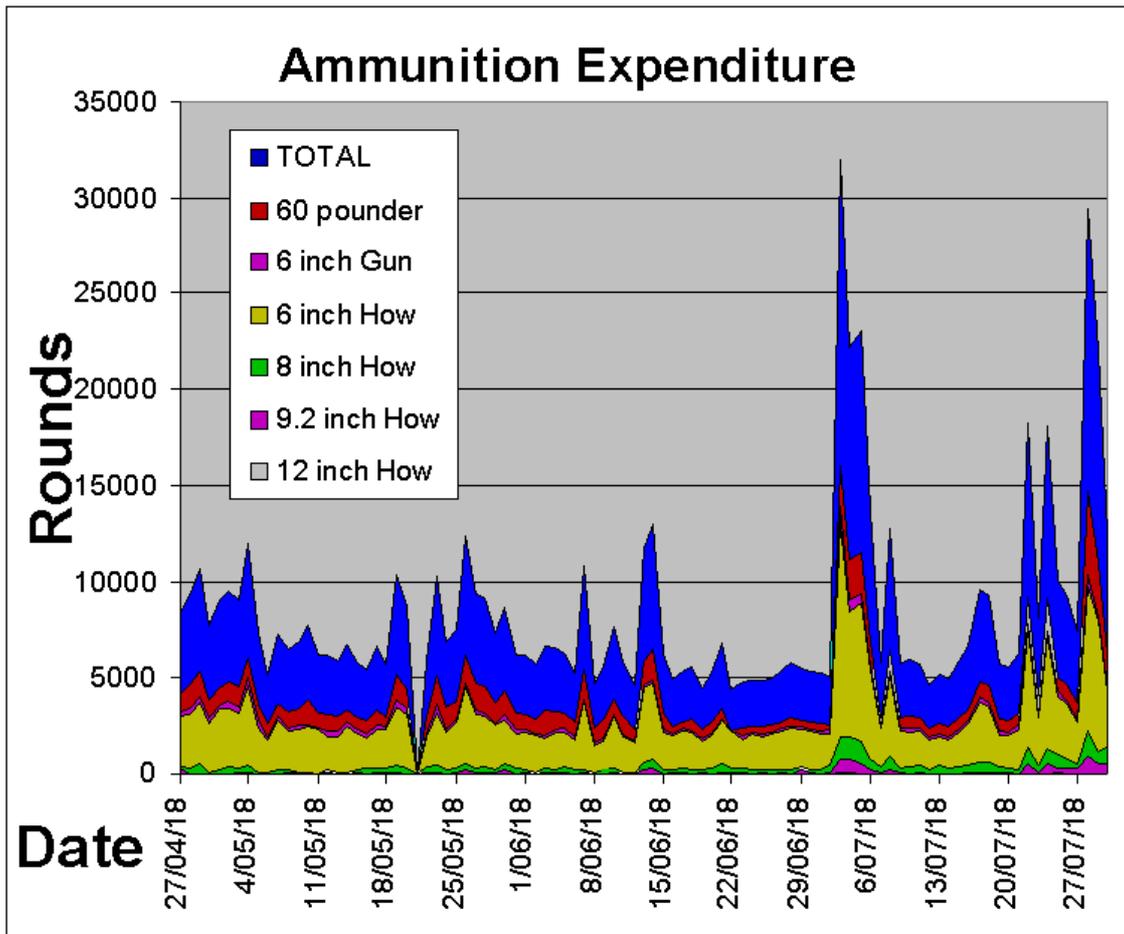
⁹² Gower, *Guns of the Regiment*, p. 44

⁹³ GS 3rd Division, "Increased Range - 18 pounders", undated, AWM26 388/3

Heavy Artillery Ammunition Expenditure (May - July 1918)⁹⁴

	12 inch Howitzer	9.2 inch Howitzer	8 inch Howitzer	6 inch Howitzer	6 inch Gun	60 Pounder	TOTAL
May							
Total Rounds	245	1190	5110	71618	7244	28827	114234
Total Tonnes	84	157	465	3261	330	788	5085
Daily Rounds	8	40	170	2387	241	961	3808
Daily Tonnes	3	5	16	109	11	26	169
June							
Total Rounds	338	1559	4615	61240	3913	20897	92562
Total Tonnes	115	206	420	2789	178	571	4279
Daily Rounds	11	52	154	2041	130	697	3085
Daily Tonnes	4	7	14	93	6	19	143
July							
Total Rounds	515	5925	15266	102836	7883	32927	165352
Total Tonnes	176	782	1390	4683	359	900	8290
Daily Rounds	18	204	526	3546	272	1135	5702
Daily Tonnes	6	27	48	161	12	31	276
TOTAL							
Total Rounds	1098	8674	24991	235694	19040	82651	372148
Total Tonnes	375	1145	2276	10732	867	2258	17654
Daily Rounds	12	97	281	2648	214	929	4181
Daily Tonnes	4	13	26	121	10	25	199

⁹⁴ Compiled from Australian Corps Heavy Artillery, Daily Tactical Reports, 1 May 1918 through 31 July 1918, AWM26 362/1 to 362/12



Gas was extensively used for both harassment and interdiction and counterbattery work by the 4.5 inch howitzers and the heavies.⁹⁵ Two companies of the *British Special (Gas) Brigade* worked the Australian Corps front, using Livens projectors. These were 203mm steel tubes 1.22m long. Batteries of 25 were buried at a 45° angle as close together as the base plates would permit and fired electrically, projecting 27.7 kg drums containing 13.6kg of pure phosgene into the enemy lines.⁹⁶ They made 26 gas attacks in June and July in which a total of 5,031 drums of lethal gas were released.⁹⁷

Infantry played a key role in harassing the enemy. One way this was done was by sniping. Confronted by a bare stretch of No Man's Land and shallow trenches, the 2nd Division was at first unable to move by daylight due to enemy snipers. The 6th Infantry Brigade snipers went to work. Between 10 and 28 April they shot 50 enemy soldiers, one man shooting seven in one day.⁹⁸ Not to be outdone, the 7th Infantry Brigade shot 55 Germans between 12 and 30 April.⁹⁹ As at Gallipoli, the snipers went on to shoot down

⁹⁵ GOCRA Australian Corps War Diary, 30 April 1918, AWM26 365/6

⁹⁶ Foulkes, *Gas!*, pp. 169-171

⁹⁷ Compiled from nightly reports of *British H and Z Special Companies*, 7 June 1918 to 29 July 1918, AWM26 358/3, 358/4, 358/4A, 358/4B

⁹⁸ War Diary, *GS British Fourth Army* 28 April 1918, AWM26 349/1

⁹⁹ 7th Infantry Brigade Daily Summaries of Intelligence, 12 to 30 April 1918, AWM26 385/3,4,5,6

the enemy periscopes as well.¹⁰⁰ The result was a complete cessation of enemy daylight movement in the 2nd Division sector and the enemy rifles and machine guns fell silent.¹⁰¹ Sniping was, of course, not restricted to the 2nd Division; snipers of the 3rd Division's 9th Infantry Brigade shot 12 Germans on 11 April near Hangard Wood.¹⁰²

Spectacular results were obtained by patrolling. Small groups of diggers spontaneously began aggressively prowling No Man's Land. The front line was no shell torn morass but green leafy woods and tall wheat fields. The German line opposite was very thinly held in order to keep the maximum number of men in reserve for the next offensive. There were no continuous trench lines or barbed wire entanglements and harassing fire from aircraft, artillery and snipers attempted to prevent their establishment. The Australians found that the high crops enabled them to sneak up on the isolated German posts and they started attacking and capturing them when opportunity presented. This form of warfare required a high order of stealth, individual initiative and patience. At the time prisoners were of enormous value because it allowed GHQ to determine which units were in the line and which were in reserve for the next offensive. The 3rd Division was particularly good at it. During its tour of the line from 26 March to 9 May the 3rd Division contrived to capture Germans on three days out of every five, taking 233 prisoners in all and identifying 41 different German units.¹⁰³

But the AIF tactics went beyond mere aggressive patrolling. On 9 April the 15th Infantry Brigade began advancing its posts silently during the night by 400 metres at a time. Although the nights were short, they were aided in this move by the morning mist. The Germans could not locate their posts after such a move, the retaliatory shelling falling to the rear of the new posts.¹⁰⁴ The process of combining patrolling with silent advances of the line became known as "peaceful penetration" and it spread from the 5th Division to the others, including the 1st Division in Flanders, and to the New Zealanders, who began peaceful penetration on 5 July. Soon there was daily activity on the Australian front and it became something of an inter-unit competition. Individual heroism was a quality always present in the AIF, as in most armies, but now it was being harnessed by the techno-tactical system. A few examples are necessary to show how peaceful penetration worked in practice.

On 18 May Lieutenant A.W. Irvine, Intelligence Officer of the 18th Infantry Battalion, found a sector where all the Australians were dozing except for a sentry. It occurred to

¹⁰⁰ 7th Infantry Brigade Daily Summary of Intelligence, 15 April 1918, AWM26 385/3

¹⁰¹ War Diary, GS *British Fourth Army* 28 April 1918, AWM26 349/1

¹⁰² War Diary, 9th Infantry Brigade 11 April 1918, AWM26 393/4

¹⁰³ "Report of Operations of the 3rd Division Astride the Bray-Corbie Road near Sailly-Le-Sec", AWM26 388/1

¹⁰⁴ War Diary, HQ 15th Infantry Brigade, 9 April 1918, AWM26 438/1

him that the Germans might also be sleeping by day. The next day was unusually hot and the snipers told him that the only sign of life from a German post opposite was a can thrown out over an hour earlier. Irvine selected a party of eighteen volunteers who, covered by a Lewis gun, walked quietly over to the German post in broad daylight and captured 22 prisoners and a light machine gun without loss to themselves.¹⁰⁵

Another daylight action was carried out on 8 July 1918 by a party of the 27th Infantry Battalion under the command of Lieutenant W.R.G. Colman, who used aerial photographs and a personal reconnaissance to locate a route through which his men could approach the German line undetected. They entered an unoccupied stretch of German trench which they followed until they discovered an occupied German post and attacked it with bombs, killing eight Germans and capturing thirteen and a heavy machine gun. Colman reported what had happened to his battalion commander, Lieutenant Colonel F.R. Chalmers, who asked him to clear the rest of the trench. Covered by Lewis guns, Colman took a party and captured four more Germans and a light machine gun.¹⁰⁶

At dawn on 11 July on the 1st Division front near Hazebrouck, a four man patrol of the 1st Infantry Battalion under Lieutenant G.E. Gaskell was searching for German outposts in shell holes. They attacked three shell holes, capturing two Germans in one, four in another and eight in a third. In each case the Australians could have wiped out the post with a single bomb, but this would have alerted surrounding posts. When the 14 prisoners reached him, Gaskell's company commander, Captain C.W.H.R. Somerset, ordered the patrol to clear out the other shell holes in the area. This was not as dangerous as it sounds because the sentries had been captured. Eighteen more Germans were found, bringing the patrol's total to 32 prisoners and 3 machine guns. Meanwhile, another patrol from the same company under Lieutenant C.R. Morley found some dugouts and silently captured 36 prisoners and 4 machine guns. It was then decided to advance the company line. Word spread that the German line was being overrun and other companies and battalions began to get into the act. By afternoon, Brigadier General I. G. Mackay's 1st Infantry Brigade had taken 1,000 metres of front and captured 120 prisoners and 11 machine guns.¹⁰⁷

While these examples are spectacular, there were not isolated. On the Somme, Australian units advanced the line 12 times in May, 6 times in June and 15 times in July.

¹⁰⁵ Bean, C.E.W., *The Official History of Australia in the War of 1914-1918 Volume VI: The AIF In France: During the Allied Offensive, 1918*, Sydney, Angus and Robertson, 1942, pp. 104-107

¹⁰⁶ Bean, VI: *The AIF in France: During the Allied Offensive 1918*, pp. 349-352;
GOC 7th Infantry Brigade, "Report on Minor Operation 8th July 1918", 8 July 1918, AWM26 386/5

¹⁰⁷ Bean, VI: *The AIF in France: During the Allied Offensive 1918*, pp. 412-418

On the Flanders front the 1st Division advanced more than 3 kilometres and captured over 1,700 prisoners. The Australians suffered 16,278 battle casualties from all causes in May, June and July, about 35 per division per day.¹⁰⁸ As much as any tactical system, Peaceful Penetration involved judicious use of the available technologies.

Peaceful penetration was not the only means by which the line was advanced. There was also formal attack. The first of these was made by the 9th Infantry Brigade at Morlancourt on 6 May. The brigade attacked on a 2,500 metre front and captured 165 prisoners, 15 machine guns and a trench mortar. The attack was notable for its low density of attacking troops as compared with Third Ypres, and for the high number of prisoners compared with advancing the line. On the down side, there were 79 Australian casualties, making it much more costly than Peaceful Penetration but a fraction of the cost of the Third Ypres battles that were, of course, fought against much stronger positions.

The stage was now set for the diggers' greatest achievement.

¹⁰⁸ Butler, II: *The Western Front*, p. 865