

1. Going to War

At 9am on 5 August 1914 Britain's ultimatum to Germany expired and a state of war was declared in Australia.¹ A precautionary stage alert had already been declared, involving the manning of the coastal batteries and searchlights. That afternoon the German steamer *Pfalz*, attempting to flee Port Phillip Bay, was fired on by the Garrison Artillery and forced to return.

A cabinet meeting on 3 August 1914 had been devoted to the issue of despatching troops to Europe. Major C.B.B. White, acting Chief of the General Staff, advised Cabinet of plans for the formation and dispatch of an expeditionary force in cooperation with New Zealand. Australia's contribution was to be two thirds of a division, some 12,000 men, with New Zealand contributing the rest but a false report had reached Australia that Canada had offered to raise a force of 30,000 men. Since the population of Canada in 1914 (7,758,000) was just over half as large again as that of Australia (4,972,000), an appropriate contribution would therefore be 20,000 men and the Army's most senior officer, Brigadier General W. T. Bridges, was instructed to draw up a plan for an expeditionary force of this size.² Bridges and his staff worked quickly, using the old war plans as a basis. On 7 August 1914, he presented the Defence Minister, Senator E.D. Millen, with new plans for an expeditionary force organised as an infantry division and a light horse brigade.³ The division was both the smallest formation that contained units from all arms and the largest for which an Australian establishment existed in 1914. Under the 1914 establishment it consisted of 18,027 men while a light horse brigade (including support units) had 1,967, a total of 19,994 men in all, unsurprisingly close to the figure laid down by the Prime Minister.⁴

The Australian Military Forces (AMF) were incompletely prepared for war in 1914.⁵ In 1911 Australia had adopted peacetime conscription for the first time. Devised by Colonel J. G. Legge, the Universal Training Scheme of 1909 replaced the old state militias with a national Army capable of defending against a major European or Asian enemy. It also provided a vehicle for Australian nationalism and welded the recently created Federation together. Australia was still very much part of the British Empire and strongly influenced by Britain but:

¹ 2300 Zulu on 4 August 1914 being 0900 on 5 August 1914 Australian Eastern Standard Time (AEST).

² Bean, C.E.W., *The Official History of Australia in the War of 1914-1918. Volume I: The Story of Anzac*, Sydney, Angus and Robertson, 1921, pp. 28,32

³ "Mobilisation", AWM25 495/1, p. 33

⁴ GS AIF, "Table showing allotment and distribution of troops", 23 September 1914, AWM25 839/15

⁵ The present day term "Australian Army" is frequently used throughout this thesis in preference to the World War One era term "Australian Military Forces" which can be confusing when used in a broader historical context. Today, the Australian Army claims the lineage and battle honours of both AMF and AIF.

The pattern of defence relations in the decade and a half before the Great War qualifies this view; the self governing dominions enjoyed the right of control of their own armed forces and in the years following Federation the government of the Commonwealth of Australia gradually established and armed these forces, in a manner which was at times contrary to British views and which did not always follow British patterns.⁶

The national service scheme obliged men aged 18 to 25 to serve in the militia for drills equivalent to 16 whole days per year, including 8 days in an annual camp; artillery, engineers and the Navy served the equivalent of 25 days annually, 17 in camp.⁷ This time did not even rate compared with the two or three years full time service of a German conscript.⁸ Nonetheless, the experience of both the conscripts and the earlier volunteer militia would still prove valuable. The first draftees began training in 1912 and in 1914 the militia had 51,195 men.⁹ No divisional structure existed, but officers gained experience in command of units up to brigade level.

There were two problems with the Militia in 1914. The first was that it was comprised of 18, 19 and 20 year olds. The former were not eligible to serve in the new expeditionary force, which Bridges soon named the Australian Imperial Force (AIF), while the latter could not serve without parental consent until 6 May 1918.¹⁰ The second was that under the terms of the Defence Act (1903) it could not serve overseas unless the men individually volunteered to serve. The regular army was very small and only one unit of the AIF, the 1st Field Artillery Battery, was formed from it in 1914. Bridges hoped that militia units would volunteer *en masse*. Some did. When Major A.J. Bessell-Browne asked for volunteers from the Perth based 37th Field Artillery Battery, "the whole parade stepped forward" and the battery became the core of the AIF's 8th Field Artillery Battery.¹¹

Each AIF unit was allotted a set of training areas. In the 7th Infantry Battalion, for example, each company was formed from a battalion of the militia:

⁶ Grey, Jeffrey, *A Military History of Australia*, Cambridge, Cambridge University Press, 1990, p. 67

⁷ Legge, "Australia and the Universal Training Law", *Commonwealth Military Journal*, July 1913, p. 456

⁸ Bidwell, *Firepower*, pp. 41, 299

⁹ Butler, A.G., *The Australian Army Medical Services in the War of 1914-1918. Volume I: Gallipoli, Palestine and New Guinea*, Melbourne, Australian War Memorial, 1930, p. 15

¹⁰ Gammage, Bill, *The Broken Years*, Canberra, Australian National University Press, 1990, p. 26

¹¹ Bean I: *The Story of Anzac*, p.58. Not all of the battery was eligible to serve, as many did not meet the AIF's minimum age of 19 or other requirements.

7th Battalion formation (1914)¹²

Company	Militia battalion	Training Area
A	59th	Brunswick, Coburg
B	60th	North Carlton and Parkville
C	57th	North-Eastern Victoria and the Goulbourn Valley
D	58th	Essendon and Moonee Ponds
E	65th	Footscray, Spotswood and Bacchus Marsh
F	66th	Castlemaine and Kyneton
G	68th	Bendigo
H	-	Murray Valley, Echuca, Inglewood and Charleton

Bridges was probably disappointed by the response. He had hoped that the militia would form at least half of the AIF, which would have required about 1 in 5 militiamen to volunteer, but had to settle for considerably less: something more like 1 in 10.¹³

Prior Military experience of the 1st Division (Other Ranks) (1914)¹⁴

Experience	Number	Per cent
Trainee militia (19-20 year olds)	2,263	15.4
Older militia	1,555	10.6
Former militia	2,460	16.7
Former British Regulars	1,308	8.9
Former British Territorials	1,009	6.9
No previous service	6,098	41.5
Total	14,693	100.0

Some 104 officers (16.5 per cent) had seen active service in the Boer War (1899-1902) or in other wars. This figure was much higher for the senior officers, including as it did Bridges himself, 6 of his 11 colonels, 22 of his 52 lieutenant colonels and 32 of his 100 majors.¹⁵

¹² Dean, Arthur and Gutteridge, Eric W., *The Seventh Battalion, A.I.F. : resume of the activities of the Seventh Battalion in the Great War, 1914-1918*, Melbourne, W. & K. Purbrick, 1933, p. 7

¹³ Bean I: *The Story of Anzac*, p.60

¹⁴ Bean I: *The Story of Anzac*, p.60

¹⁵ *AIF Staff, Regimental and Gradation Lists of Officers, 6th December 1914*

The division staff was divided into a General Staff Branch that handled operations and an Adjutant and Quartermaster General's Branch that handled administration and supply. For the former, Bridges chose Major C.B.B. White and Captain T. Griffiths, for the latter, Colonel V.C. Sellheim and Lieutenant Colonel W.G. Patterson. All were Regular Army officers.¹⁶

The appalling quality of its staff work during the Crimean War (1854-1856) caused the British Army to establish a Staff College at Camberley, England, in 1858, although there was subsequent criticism of the course on the grounds that it was too academic and not practical enough. While entrance was nominally by examination there were quotas for the various corps of the army which favoured infantry and cavalry officers, many of whom entered through being appointed to the college rather than by passing the exam. The biggest defect in the system was the small number of officers graduated each year, just 32 in 1899, for example, too few to fill all the staff posts even in peacetime. The Boer War (1899-1902) revealed continuing and glaring deficiencies in staff work and a 1904 Royal Commission recommended sweeping reforms, one of which was that all staff appointments be held by Staff College graduates. The number of students at Camberley was boosted and Lord Kitchener created a second campus of the Staff College at Quetta, India in 1904.¹⁷

Another of the reforms was the opening up of Staff College places at both Camberley and Quetta to Australian officers. By the outbreak of war in 1914, six Australian officers had graduated: Majors C.H. Foott, E.F. Harrison, E.H. Reynolds and C.B.B. White and Captains T.A. Blamey and J.D. Lavarack, while four of the British Army's 447 graduates were on secondment in Australia.¹⁸ There was also John Gellibrand, who had attended Camberley with White in 1906-7 while serving in the British Army.¹⁹ Gellibrand had resigned from the British Army in 1912 and returned to his native Tasmania to grow apples.²⁰ With only eleven staff college graduates available, it was impossible to fill all staff appointments with them, nor could Bridges take them all, for some were still required in Australia. In the event, he chose White, Blamey, Gellibrand and a British staff college graduate, Major D.J. Glasfurd, for his headquarters.

¹⁶ GOC AIF to Minister of Defence, 8 August 1914, AWM25 495/1

¹⁷ Marshall-Cornwall, James, "Staff Officer", *War Monthly*, No 42, 1977, pp. 9-11

¹⁸ Majors A.H. Bridges, D.J. Glasfurd and C.W. Gwynn and Captain F.D. Irvine. Terraine, John, *The Smoke and the Fire*, London, Leo Cooper, 1992, p. 115; *AIF Staff, Regimental and Gradation Lists of Officers, 6th December 1914*

¹⁹ Bean *Two Men I Knew*, p. 84

²⁰ Sadler "A Noble Neglected Knight", *Canberra Times* 27 May 1995, p. C6

Although the Regular Army was small, Regular officers and NCOs shaped the AIF and held key positions. Both Regular and Militia officers were dedicated men. The leadership of the AIF was representative of the best the Australian Army had to offer and would stand comparison with the British Army.

The army was divided into units, each with a type and a number. For each type there was an establishment, tables of organisation and equipment which detailed the composition of the unit, how many men it had, and how many and what kind of tools, vehicles and weapons it had. Ideally, establishments were based on technological, logistical, tactical and strategic requirements. The benefits of this were administrative. For a given unit type, one could calculate how much food it would need, how many trucks were required to transport it, how many huts were required to house it. One unit could be replaced by another of the same type in the knowledge that it had the same number of men and the same equipment. The Australian Army's tables of organisation and equipment followed those of the British Army with but minor differences. This standardisation was necessary if the two armies were to fight together, with units of one army relieving those of the other.

In 1914, the smallest infantry sub-unit was the section. Two sections made up a rifle company. Each battalion had eight rifle companies, a headquarters and a machine gun section armed with two machine guns. Four infantry battalions and a 25 man headquarters made up an infantry brigade; a division had three, each under the command of a colonel, assisted by a staff officer known as the brigade major.

Organisation of an Infantry Brigade (1914)²¹

	Officers	Other Ranks	Total
Headquarters	4	21	25
4 x Infantry Battalions	128	3,964	4,092
Each: Headquarters	7	46	53
Machine gun Section	1	17	18
8 x Rifle Companies	24	928	952
TOTAL	32	991	1,023
TOTAL	132	3,985	4,117

²¹ *War Establishments of the Australian Military Forces 1912*, Government Printer, Melbourne, 1912; GS AIF, "Table showing allotment and distribution of troops", 23 September 1914, AWM25 839/15

While the division had many different kinds of tools and pieces of equipment, its fighting power was built around just four weapons: the SMLE rifle, the sword bayonet, the Maxim machine gun and the 18 pounder quick firing gun. Considering the variety of weapons developed over the centuries, it is quite remarkable that so few were considered necessary in the early 20th century. No less remarkable is how recent they all were. The army before the war had embraced new technologies and the concentration on just a few indicates a high degree of faith in these new technologies.

In matters of equipment and organisation, as in doctrine, the Army had decided to standardise on British weapons. The logic and wisdom of this decision is incontrovertible. The ability to plug into the British Army's supply system was essential for the maintenance of a field army overseas. The regular resupply of parts and ammunition over such a distance would have been problematical even in the case of the small arms that were manufactured in Australia and impossible in the case of the artillery, for which neither guns nor ammunition were produced locally. The decision was made easier by the fact that these weapons were equal to or better than anything else available.

The standard Australian infantry weapon in 1914 was the British .303 inch Short Magazine Lee-Enfield (SMLE) Mark III rifle. This was an excellent weapon that had first entered service with the British Army in 1907. The SMLE rifle could be fired at up to 15 rounds per minute and was effective at up to 800 metres. When war broke out in August 1914, Australia had 87,240 of them on hand. Another 17,500 were on order in the UK but the British government commandeered these.²² Australia's situation in this regard compared favourably with that of Britain, which had 795,000 rifles (only 475,000 of which were of the latest pattern) to equip an army that numbered 725,000 men on mobilisation in 1914. The criticality of this will be appreciated if we consider that each division at the front engaged in combat would require another 2,000 rifles per month to replace wastage. What this meant for Australia was that no additional rifles could be expected from Britain for some time to come.²³

Into the breach stepped the Government Small Arms Factory at Lithgow, New South Wales, with its capacity of 15,000 rifles per year.²⁴ This was still inadequate, forcing

²² Bean I: *The Story of Anzac*, p.62; Scott, Ernest, *The Official History of Australia in the War of 1914-1918. Volume XI: Australia During the War*, Sydney, Angus and Robertson, 1936, p. 261

²³ Simkins, Peter, *Kitchener's Army: The Raising of the New Armies, 1914-1916*, Manchester, Manchester University Press, 1988, p. 279

²⁴ This was one of four armaments factories that had been established in April 1910, the others being an explosives factory at Maribynong, Victoria, a clothing factory in South Melbourne, Victoria and a leather goods factory at Clifton Hill, Victoria. In 1914 a fifth factory was established at Geelong, Victoria to manufacture woollen goods

the army to take rifles from the militia to equip reinforcements. By early 1915 it was estimated that even these stocks would be exhausted by the end of the year. Double shifts were instituted at Lithgow and production increased to 2,000 rifles per month, but by then 5,000 per month was required. The crisis ended when British rifles finally became available from October 1915 onwards but the role that Lithgow played in keeping the AIF in the field was an important one. Eventually one quarter of all Australian troops sent overseas would do so carrying a Lithgow rifle. When first used in action, there were some complaints about the bolt action being a bit tight, which was remedied.²⁵

In 1914 the British Army was still in the process of changing over to the high velocity Mark VII ammunition which had been introduced in 1911. The Australian Army used the older Mark VI ammunition, which was produced at the Cordite Factory at Maribynong, Victoria. The SMLE Mark III itself could use either ammunition but the rifle had to be resighted when changing from one to the other. Some 15 million rounds were sent overseas with the troops in 1914.²⁶

Each infantry battalion and light horse regiment had a machine gun section armed with two Maxim machine guns. By 1905 the Australian Army had thirty two .303 inch Maxim guns, five of the older .45 inch Maxims and eight air-cooled .303 inch Colts.²⁷ More of the newest model Maxim guns were purchased from 1909 on and some of the old guns were apparently rebuilt. In the AIF, the newest guns were allocated to the infantry while the Light Horse got the older models. The Maxim was water-cooled, a problem in the Australian outback. A condenser enabled the water to be recycled after it boiled off. It weighed 30 kg and could fire 600 rounds per minute. Range was about 4,000 metres.²⁸ The ammunition was the same Mark VI .303 inch ammunition used in the rifle, in 250 round belts. Like the rifle, the Maxim could also fire Mark VII ammunition, but this was frowned upon as it increased the heat in the barrel and therefore the wear on the weapon. Belts were not pre-filled at the factory so the machine gun section had to belt the ammunition themselves.²⁹

and in 1918 a sixth factory was established on the Brisbane River to manufacture acetone for the production of cordite. See Scott, XI: *Australia During the War*, p. 236-239, 260-261.

²⁵ Bean I: *The Story of Anzac*, p.62; Scott XI: *Australia During the War*, p.261

²⁶ Cable, DOD to Secretary War Office, 20 August 1914, AWM25 495/1

²⁷ Goldsmith, Dolf L., *The Grand Old Lady of No Mans Land: The Vickers Machinegun*, Coburg, Canada, Collector Grade Publications, 1994, p. 257

²⁸ Hogg, *The Machine Gun*, pp. 24-25

²⁹ Griffith, Paddy, *Battle Tactics of the Western Front: The British Army's Art of Attack 1916-18*, Cambridge, Massachusetts, Yale University Press, 1994, p. 31

Since a skilled rifleman could fire 15 rounds per minute, a machine gun was worth about forty of them. Thus the 18 man machine gun section was actually quite economical because it had the firepower of 80 rifle men and could reach that level of proficiency with just two weeks training. Nonetheless, rifles outnumbered machine guns 500 to 1 in an infantry battalion, so the guns only amounted to about 8 per cent of its firepower.³⁰

The machine gun was most effective when fired in "enfilade", that is, from the flank. The bullets fall in a long narrow elliptical pattern, a "beaten zone" which forms but a part of the "deadly zone" in which bullets can strike an opponent. An enfilading machine gun creates a barrier with its deadly zone akin to an invisible wall. A series of machine guns can set up a system of interlocking lines of fire, with each gun defended by a second gun firing in at right angles to the line of fire of the first, thus enfilading the ground in front. Tests showed that two guns could inflict 60 per cent casualties on men advancing at two paces interval at a distance of 600 to 800 metres, in just one minute.³¹ In considering the allocation of just two Maxim guns per battalion, it must be born in mind that the organisation was intended for open warfare. The Maxim's weight, bulk and requirement to be positioned limited its use in this context and two guns was considered to be adequate for the purpose.

The numerically next largest arm in the division was the artillery. In 1911 the Royal Australian Artillery had been divided into the Royal Australian Field Artillery, which manned mobile guns in support of field formations, and the Royal Australian Garrison Artillery, which manned coastal defences.³² This followed the British Army, which had split its artillery in 1899.³³ The split was unfortunate because the nature of the war ahead would be more suited to the training of the Garrison Artillery who, for the moment at least, were occupied defending ports.

Four guns formed a battery and three batteries together with an ammunition column made up a brigade. Each brigade had an armaments artificer attached to it to perform repairs on the guns. Brigade headquarters had two fitters or wheelers, as did each battery and ammunition column. Each battery and ammunition column had two saddlers, a Farrier Sergeant, a Shoeing Smith Corporal and two Shoeing Smiths (three in the ammunition column). The division had three field artillery brigades and a small

³⁰ Bidwell, *Firepower*, p. 28

³¹ Bidwell, *Firepower*, p. 29

³² Horner, David, *The Gunners, A History of Australian Artillery*, St Leonards, NSW, Allen and Unwin, 1995, p. 63

³³ Bidwell, *Firepower*, p. 153

artillery headquarters to control them plus other artillery that might be attached to the division for a particular mission. The artillery commander was graded a colonel, the same as the infantry brigade commanders. Like them, he was assigned a brigade major as a chief of staff.

Organisation of Divisional Artillery (1914) ³⁴

	Officers	Other Ranks	Total
Headquarters	4	18	22
3 x Brigades	78	2100	2178
Each: Headquarters	6	38	44
3 x Batteries	15	420	435
Brigade Ammunition Column	5	242	247
TOTAL	26	700	726
Division Ammunition Column	19	564	583
TOTAL	101	2682	2783

The British Army had developed its own quick firing guns. The 18 pounder was an excellent weapon designed with experience in the Boer War in mind. The British Army chose it over a 15 pounder like the *Soixante-Quinze* because it felt that weight of shell was the decisive factor.³⁵ It could fire up to twenty 18 pound rounds per minute. Maximum range was 6,000 metres and muzzle velocity was 500 metres per second. Being a gun, its maximum elevation was just 16 degrees. The panoramic gun sight on the 18 pounder, the No. 7 Dial Sight, was a superb piece of equipment destined to outlive the 18 pounder, being incorporated into its successor, the 25 pounder, and later still into the 5.5 inch gun that entered service with the Australian Army in 1942 and remained in service until 1983. Australia purchased its first two dozen 18 pounders in 1906. With the expansion of the Army due to the compulsory service scheme, 16 new guns were purchased each year and by 1914 the army had 116 18 pounders available. Equipping the 1st Division required 36 guns, almost a third.³⁶

Two types of ammunition were available. Common shell filled with Lyddite (picric acid or trinitrophenol) was provided for use against fortifications and entrenchments. A percussion fuse exploded the shell after it hit the ground. It was therefore of little use against infantry in the open.³⁷ For this purpose, shrapnel shells were provided. The 18

³⁴ GS AIF, "Table showing allotment and distribution of troops", 23 September 1914, AWM25 839/15

³⁵ Bidwell, *Firepower*, p. 13

³⁶ Gower, *Guns of the Regiment*, pp. 47-48, 160, 216-217; Horner, *The Gunners*, pp. 60,63,508

³⁷ Bethell, *Modern Guns and Gunnery*, pp. 152-153, 157-158

pounder shrapnel shell contained 375 lead/antimony balls packed in trinitrotoluene (TNT), as Lyddite cannot be used with lead balls because it causes the formation of lead picrate, an unstable explosive. Such shells were exploded with a time fuse so that they fired the shrapnel balls forward like an airborne shotgun.³⁸ Unfortunately, neither type of ammunition was produced in Australia.

The Australian Division was undergunned compared with its British counterpart, which had nine batteries of 6 guns, three of 6 howitzers and a heavy battery of four 60 pounders, a total of 76 barrels as compared to 36 for the Australian, but the British Army would soon adopt the four gun battery and with over half the British Army's available guns taken to France by the British Expeditionary Force, new British units trained with whatever was available.³⁹ However, there were only sufficient stocks of 18 pounder ammunition to send 40,000 rounds with the expeditionary force,⁴⁰ somewhat lower than the 1,500 rounds per gun recommended by the British Army Council.⁴¹

The prewar tables of organisation also provided for a battery of howitzers or heavy guns for each division. In artillery parlance, a "gun" is a weapon that fires a projectile with a high speed and a low trajectory, whereas a "howitzer" fires a projectile at medium speed and high or low trajectories. In other words, a gun generally fires straight at a target whereas a howitzer drops its projectile on top of it. The only howitzers available in Australia were a battery of five obsolete 5 inch howitzers. Despite representations from the battery commander, Major Charles Rosenthal, it was decided to omit the howitzers from the division on the grounds that the ammunition would probably not be available.⁴² There was a training problem if the only such guns in the country were sent overseas. This was a pity because, as it turned out, ammunition was available and howitzers would have been useful in the hilly country of the Gallipoli Peninsula. Nor was a heavy battery sent for the same reason: Australia had only a single heavy battery of four old 4.7 inch guns.

While the AIF soon found that just four weapons did not meet all its needs on the battlefield, they were neither defective nor inadequate and only the Maxim would be replaced in the course of the war. The others would serve to the end of the war and beyond.

³⁸ Gower, *Guns of the Regiment*, p. 49

³⁹ Simkins, *Kitchener's Armies*, p. 283

⁴⁰ Cable, DOD to Secretary War Office, 20 August 1914, AWM25 495/1

⁴¹ Cable, Secretary of State for Colonies to DOD, 9 August 1914, AWM25 495/1

⁴² Hamilton, Ian, *Gallipoli Diary*, Volume II, London, Edward Arnold, 1920, p. 295

The third combat arm in the division, and the most prestigious, was the light horse. Light horse were not cavalry, which is properly the term given to soldiers who fight on horseback, nor mounted infantry, who are infantry that would ride to battle on horseback, dismount and fight on foot, but a cross between the two. The light horse would fight on foot like infantry, but while mounted could also carry out many of the traditional roles of the cavalry, such as patrolling, scouting and raiding. Light horse were not equipped with swords or lances but with the same rifles and bayonets as the infantry. This was made easier because the standard Lee-Enfield rifle used by the infantry had been adapted for mounted use by the British cavalry. The shortening of the rifle to allow it to double as a carbine also produced a rifle better suited to trench warfare. Until 1918, only officers and warrant officers were equipped with swords.

Organisation of a Light Horse Brigade (1914)
(including * attached support units) ⁴³

	Officers	Other Ranks	Total
Headquarters	8	27	35
3 x Regiments	75	1533	1608
Each: Headquarters	6	41	47
3 Squadrons	18	444	462
Machine gun section	1	26	27
TOTAL	25	511	536
* Signal Troop	1	42	43
* Brigade Train	7	153	160
* Field Ambulance	6	112	118
* Chaplains	3		3
TOTAL	100	1867	1967

Light horse were mounted on Australian stockhorses, known as "walers".⁴⁴ A typical waler was about 14 to 15 hands high, sired by a thoroughbred out of a part draft horse dam with perhaps a dash of Timor pony or brumby.⁴⁵ Because they did not have to carry soldiers about the battlefield, they were smaller than cavalry horses, which meant that they ate and drank less. They could carry heavy loads (130 kg or more) over long

⁴³ GS AIF, "Table showing allotment and distribution of troops", 23 September 1914, AWM25 839/15

⁴⁴ Despite the name, walers were not restricted to New South Wales but were bred in all states. By the early 20th century, economic pressures had shifted the centre of horse breeding industry away from New South Wales and Victoria to the cheaper pastures of central Queensland. See Yarwood, A.T., *Walers: Australian Horses Abroad*, Carlton, Victoria, University of Melbourne Press, 1989, p. 21

⁴⁵ Yarwood, *Walers*, p. 17

distances (80 km in a day) and rarely collapsed from exhaustion.⁴⁶ The Australian Army placed great stock on mobility and the confidence that it had in the light horse was reflected in the fact that in 1914 there were 23 light horse regiments established throughout rural Australia.⁴⁷

Although much smaller than an infantry battalion, the light horse regiment had as many machine guns and a generous allocation of tools and explosives. The tables of organisation provided for two squadrons of light horse per division, each 154 strong, but Bridges chose to upgrade the divisional light horse to an entire regiment.

Attached to the division, but not part of it, was an entire light horse brigade, consisting of three light horse regiments. The possibility of constructing a light horse division (one built around light horse regiments rather than infantry battalions) does not seem to have been considered by the General Staff before the war despite the emphasis on mobile formations.

Saddlery and harnesses for the light horse regiments came from the Government Harness Factory at Clifton Hill, Victoria, one of the factories established under the 1910 initiative. Each light horse regiment had a Saddler Sergeant and a Saddletree maker and each squadron had its own saddler. To keep the horses shod, each regiment had a Farrier Quartermaster Sergeant and each squadron a Farrier Sergeant, a Shoeing Smith Corporal and three Shoeing Smiths.

Straddling the boundary between the combat arms and the support services were the engineers. In 1914, there were two types of engineers: field engineers and signal engineers. From 1906 to 1912 signallers had been part of a separate corps, but on 1 July 1912 they were merged with the Engineers in conformity with the British Army. The two continued to maintain more or less separate identities although their relationship was closer in the Australian Army than in the British, so much so that a signals officer, Major J.P.L. McCall, could be appointed to command one of the 1st Division's field companies.⁴⁸ In 1925 the signallers would regain their own corps. A division had a signal company responsible for communications between division headquarters, the brigades and superior headquarters if there was one. The signal company had no radios although the signal troop attached to the light horse brigade did. Communications were

⁴⁶ Jones, Ian, *The Australian Light Horse*, North Sydney, NSW, Time-Life, 1987, p. 21

⁴⁷ Jones, *The Australian Light Horse*, p. 18

⁴⁸ McNicoll, R.R., *The Royal Australian Engineers 1902 to 1919 Making and Breaking*, Netley, SA, Corps Committee of the Royal Australian Engineers, 1979, pp. 5, 13, 20

visual, by semaphore flags or heliograph (a kind of mirror for reflecting sunlight) or by telephone or telegraph.

Field engineers are often called "sappers and miners" (or just sappers). In classical siege warfare a "sap" is a trench running towards a fortification, a "mine" is a tunnel under the fortification. This reflected the field engineers' orientation towards siege warfare while the rest of the army, except for the Garrison Artillery, concentrated on open warfare.

Organisation of Divisional Engineers (1914) ⁴⁹

	Officers	Other Ranks	Total
Headquarters	3	10	13
3 x Field Companies	18	600	618
Signal Company	7	157	164
TOTAL	28	767	795

The basic unit was the engineer field company. The prewar tables of organisation called for a division to have two field companies but Bridges gave his division three, one per brigade. He seems to have been aware of the latest thinking in Europe, that the ratio of sappers to infantrymen should be 6:100 or more.⁵⁰ It was to prove an excellent decision. While normally officers of the rank of captain commanded infantry companies and light horse squadrons, majors commanded the engineer companies and artillery batteries. Like the divisional artillery, a divisional engineers headquarters was provided to control all signal and construction activity in the divisional area of responsibility.

For its construction role, the field company contained a large number of tradesmen such as carpenters, bricklayers, plasterers and miners and a large quantity of tools. The field company was capable of building simple fortifications and bridges. In practice, they would be asked to build whatever the division needed and a great deal of ingenuity would be called for. There were no power tools, compressors or mechanical earthmoving equipment, technologies that would revolutionise military engineering a generation later.

⁴⁹ GS AIF, "Table showing allotment and distribution of troops", 23 September 1914, AWM25 839/15

⁵⁰ Bloch, *Is War Now Impossible?*, p. 333

Tools carried by various units (1914)⁵¹

Tools	Light Horse Regiment	Field Artillery Brigade	Engineer Field Company	Infantry Battalion
Shovels	160	128	111	110
Spades	0	112	19	0
Picks	80	128	107	76
Axes, felling	51	16	47	16
Axes, hand	5	0	28	8
Bill hooks	30	64	39	40
Hand saws	5	96	27	1
Crosscut saws	4	0	4	0
Reaping hooks	4	48	10	20
Folding saws	0	0	8	32
Crowbars	4	10	8	8
Guncotton (kg)	210	0	258	0
Sandbags	200	0	852	0

Demolition was accomplished with explosives. The standard ones were ammonal and guncotton. Ammonal is a mixture of 75% ammonium nitrate, 20% aluminium and 5% carbon. It is strongly hygroscopic and liquefies when exposed to air. Each field company was allocated 258 kg of guncotton, packed damp in 22 kg tin-lined boxes. In each slab of guncotton there was a hole in which a dry guncotton primer could be inserted. The primer in turn had a hole for a detonator.⁵²

Numerically the largest of the service branches within the division was the Medical Corps. A division had three company sized medical corps units known as field ambulances. This organisation had been introduced in the British Army in 1906 in the wake of the Boer War. It combined the stretcher bearers with a field hospital in the hope that this would provide greater cooperation between them. The field ambulance was not intended to provide any kind of long-term treatment of the sick or wounded. Its role was their safe evacuation from the divisional area. As such it was equipped to provide first aid and emergency surgery. Casualties requiring hospitalisation or complex surgery would be transported to a hospital.

⁵¹ *War Establishments of the Australian Military Forces 1912*, p. 117

⁵² McNicoll, *Making and Breaking*, p. 195

Supply and transport were the responsibility of the Australian Army Service Corps. Four Service Corps companies were assigned to a division, one acting as a headquarters company. Divisional transport was entirely horse drawn which reflected contemporary Australian and British Army practice and also Australian society. The army had considered the idea of mechanising the division but it was felt that Australian roads were so poor and mechanical transportation technology so immature and unreliable that animal transport was still superior.

Organisation of an Infantry Division (1914)⁵³

	Officers	Other Ranks	Total
Infantry	396	11,955	12,351
Artillery	101	2,682	2,783
Engineers	28	767	795
Medical	30	732	762
Service Corps	30	667	697
Light Horse	25	511	536
Headquarters Staff	21	67	88
Chaplains	10		10
Ordnance		5	5
TOTAL	641	17,386	18,027

Bridges was constrained by the 20,000 man ceiling on the expeditionary force that the Government had set for political reasons, and by the need for standardisation.⁵⁴ Forming new units or restructuring old ones could have thrown the mobilisation process into chaos, as it did in Canada.⁵⁵ In this, the Canadians had an advantage over the Australians in that they were able to assemble an entire division prior to departure whereas the First Division was not complete until it arrived in Egypt. An orderly mobilisation required adherence to the tables of organisation and equipment. Moreover, the division would have to serve alongside British Army divisions and radical departures could cause problems. Conforming to the British standard as closely as possible would minimise these. Such changes as he did make in the organisation were minor, the addition or subtraction of whole units.

⁵³ GS AIF, "Table showing allotment and distribution of troops", 23 September 1914, AWM25 839/15

⁵⁴ A problem shared by his counterparts in the Vietnam War. See McNeill, Ian, *To Long Tan*, St Leonards, NSW, Allen & Unwin, 1993, pp. 190, 203

⁵⁵ Hyatt, A.M.J., *General Sir Arthur Currie: A Military Biography*, Toronto, Toronto University Press, 1987, pp. 15-16.

Organisation of Certain Line of Communications Units (1914)⁵⁶

	Officers	Other Ranks	Total
Ammunition Sub Park	7	464	471
Depot Unit of Supply	1	13	14
Field Bakery	1	92	93
Field Butchery	1	20	21
Clearing Hospital	8	77	85
Stationary Hospital	8	86	94
General Hospital	21	143	164
Mobile Veterinary Section	1	13	14
Ordnance Company	2	165	167
Remount Unit	4	122	126
Reserve Park	7	264	271
Sanitary Section	1	25	26
Supply Column	5	240	245
Veterinary Section	2	113	115

A division required certain supply units. A depot unit of supply could support around 4,000 men and 1000 animals; a division needed five of them. A field bakery and field butchery was capable of feeding 22,500 men: a division required one of each. Hauling supplies over any distance required mechanical transport and a division had none. Nor, for that matter, did the Australian Army. To care for the horses each infantry battalion, artillery brigade and light horse squadron had an attached veterinary officer, just as it had an attached medical officer, but there were no veterinary units in the division.

The field ambulance could not, and was never intended to, treat all the casualties of a division engaged in battle. This required a Clearing Hospital, which had 200 beds, two Stationary Hospitals with 200 beds each and two general hospitals with 520 beds each. The Clearing Hospital would be set up at the head of the lines of communication, probably a railhead. It would receive casualties from the field ambulances and forward them to the Stationary Hospital further back that which in turn would forward men to a General Hospital. In the event of an invasion of Australia, the Army intended to use civilian hospitals as General Hospitals.⁵⁷ Under the British system, each medical unit was theoretically capable of treating any casualty.

⁵⁶ GS AIF, "Table showing allotment and distribution of troops", 23 September 1914, AWM25 839/15

⁵⁷ Butler I: Gallipoli, *Palestine and New Guinea*, p. 13

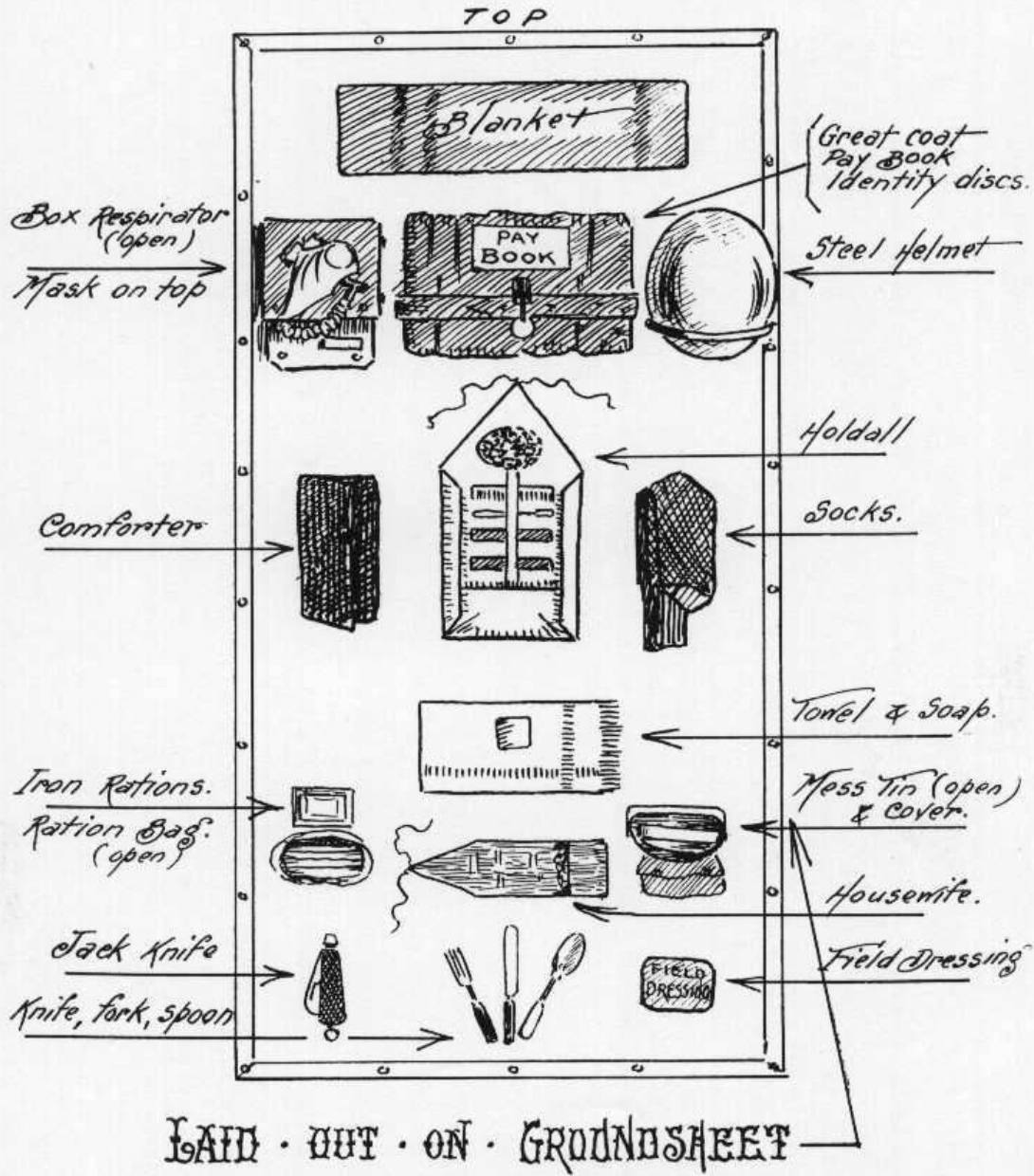
When, at the end of August, the government lifted the size of the expeditionary force to 30,000, these were the first new units that Bridges ordered formed. Since the hospitals included nurses, this meant that women could now join the AIF. Bridges also added three more formations, the 4th Infantry Brigade and the 2nd and 3rd Light Horse Brigades. The additional major units meant that there still was not enough line of communications units. The monthly reinforcements for this force were calculated at 3,000 men and 2,000 horses.

Clothing Issued to the Australian Soldier (1914-18)⁵⁸

Item	Quantity
Badge, copper, large (for hat)	1
Badge, copper, small (for collar and Field Service cap)	3
Badge, copper, shoulder strap, corps letters, pair	1
Badge, copper, shoulder strap, "Australia", pair	1
Boots, ankle, brown, pairs	2
Breeches, cord, CP, woollen, pairs, dismounted style OR Breeches, cord, CP, woollen, pairs, mounted style	2
Belt, abdominal	2
Cap, field service	1
Drawers, cotton, pair	2
Greatcoat, dismounted style OR Greatcoat, mounted style	1
Hat, felt, CP	1
Jacket, service dress	2
Jersey (later Jacket, cardigan)	1
Laces for boots, spare	1
Leggings, brown, CP OR Puttees, pair	1
Shirts, flannel	2
Singlets	2
Spurs, jack, ordinary, pair (mounted units only)	1
Straps, chin	1

⁵⁸ QMG DOD, "Instructions in Regard to Clothing of the Expeditionary Force, Australian Military Forces (Exclusive of Permanent Staff)", 12 August 1914, AWM25 187/5

* KITS · FOR · INSPECTION *



50th Battalion A.I.F.

To equip the AIF, the Quartermaster Branch recalled the weapons and stores of militia units. Some items were retrieved from storage, some purchased and others had to be manufactured hurriedly. As with weapons, the ability to equip the AIF completely in

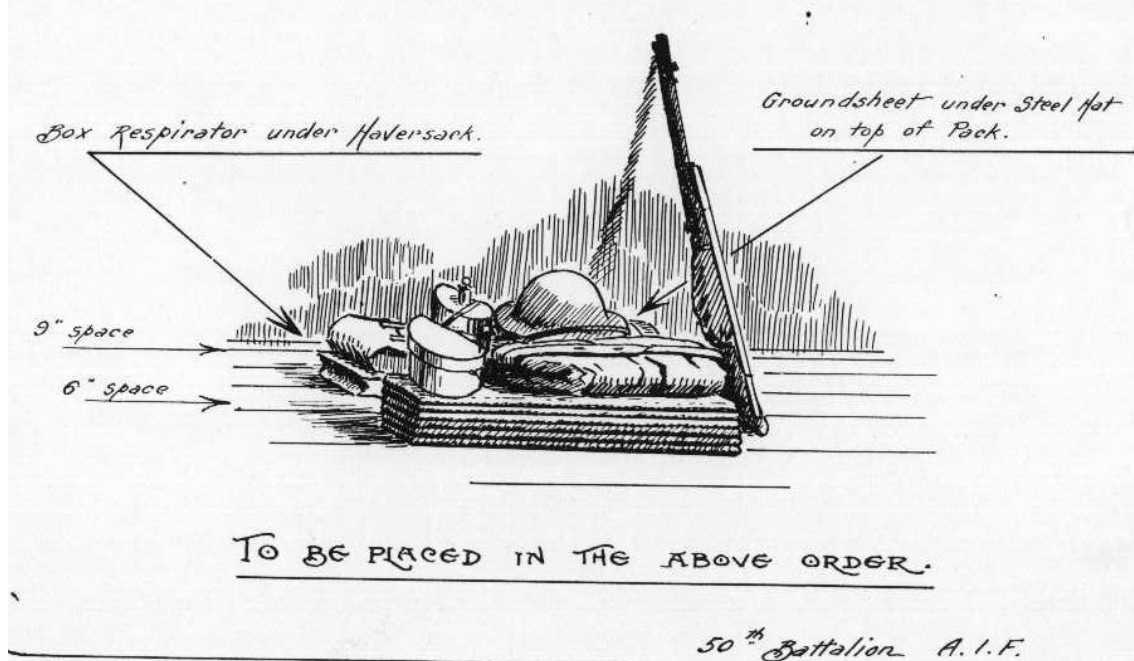
Australia was critical, as little help could be expected from Britain in the immediate future.

Kit issued to the Australian Soldier (1914-18)⁵⁹

Item	Quantity
Bag, kit, universal	1
Blankets, GS	2
Bottle, water, enamelled	1
Brush, hair	1
Brush, shaving	1
Brush, tooth	1
Cap, comforter	1
Carrier, water bottle, with shoulder strap OR Infantry equipment set	1
Comb	1
Disc, identity	1
Dressing, field	1
Fork	1
Holdall	1
Housewife (a small sewing kit)	1
Jersey (later Jacket, cardigan)	1
Knife	1
Knife clasp with marline spike, tin opener and lanyard	1
Razor (in case)	1
Sheets, ground	1
Soap, piece	1
Socks, pairs	3
Spoon	1
Tins, mess (mounted style) OR (dismounted style)	2
Towels	2

⁵⁹ "Instructions in Regard to Clothing of the Expeditionary Force, Australian Military Forces (Exclusive of Permanent Staff)", 12 August 1914, AWM25 187/5

KITS



The Australian Army had adopted a uniform based on its experiences in the Boer War, which had shown the benefits of camouflage and concealment now that the rifle was effective at ranges of up to a mile. A pea soup colour was chosen, with oxidised brass buttons that did not reflect sunlight.⁶⁰ The jacket, made of pure Australian wool, was loose fitting so that it was comfortable and did not restrict the arms, chest or the neck. It contained four large outside pockets and an inside pocket. A pleat down the back allowed it to be let out. Officers were permitted to buy additional items like silk ties with a clothing allowance. This standard Australian Army uniform, manufactured by the Government Clothing Factory in South Melbourne, was adopted by the AIF on 12 August 1914 and remained unchanged throughout the war.

The most distinctive item of the Australian soldier's apparel was the slouch hat, chosen because it was more practical in the hot Australian sun than the British pith helmet or peaked cap. The hat was identical to the British Army's felt hat but the Australian version proved more durable than the British, which soon lost its shape, faded and turned purple.⁶¹ It was generally worn with the left-hand side brim turned up and the cap badge on the upturned underside of the brim but many units wore their hats with the brims turned down and the badge on the front. The men were also supposed to have

⁶⁰ Bean I: *The Story of Anzac*, p.60

⁶¹ HQ 9th Infantry Brigade, 9 July 1917, AWM25 389/4

been issued with peaked field service caps but initially there were not enough to go around and most men were not issued with them until they arrived in Egypt. The Prime Minister, Andrew Fisher, granted Queensland light horse regiments the right to wear emu feathers in their hats, a distinction later extended to other light horse units.⁶² The 6th Light Horse wore wallaby fur around their hats.⁶³

All ranks of the AIF wore the famous "rising sun" badge, which had been worn by the Administrative and Instructional Corps since 1904. Small rising suns were worn on each collar and the word "Australia" on each shoulder strap. Informally, some men continued to wear their pre-war cap badges and some units unofficially created their own, but the only units officially permitted to wear a distinctive badge were the siege artillery batteries, which wore that of the Royal Australian Artillery: an oxidised copper badge with the stylised initials "RAA" and the motto *Consensu Stabiles* (Strong by Agreement).⁶⁴

In 1915 a distinctive system of colour patches was introduced. Worn on the sleeve, the shape of the patch eventually came to indicate the wearer's division while the colours denoted the battalion or regiment and brigade. In 1917, men who served at Gallipoli were authorised to wear a brass letter "A" for Anzac over the colour patch.⁶⁵

For the infantryman, the most important accoutrement was the boot. Australian boots were brown, lightweight and superbly adapted for hard use in a dry climate. They provided excellent service during the campaigns in the Middle East, but in the waterlogged conditions in France, they sometimes gave trouble. Lieutenant Colonel E. T. Leane, ordered to investigate the matter in 1917, noted that Brigadier General John Paton was still wearing a pair of boots issued to him in New Guinea in 1914, and one of his staff officers a pair issued to him in Australia in September 1914. Leane publicly blamed the problems on men polishing their boots, especially those who used petrol to remove the oils in order to give a better shine and recommended that polishing boots should be considered a serious offence. Privately, Leane blamed private contractors not adhering absolutely to the pattern, for unlike clothing, the boots were manufactured by twenty private firms which together delivered 100,000 pairs per month.⁶⁶ The problems with the soles corrected, Leane believed that the Australian boot was superior to any worn in France. Moreover, they were cheaper, costing only 14/6 a pair as compared

⁶² OC 2nd Light Horse Brigade, 21 March 1915, AWM25 389/1

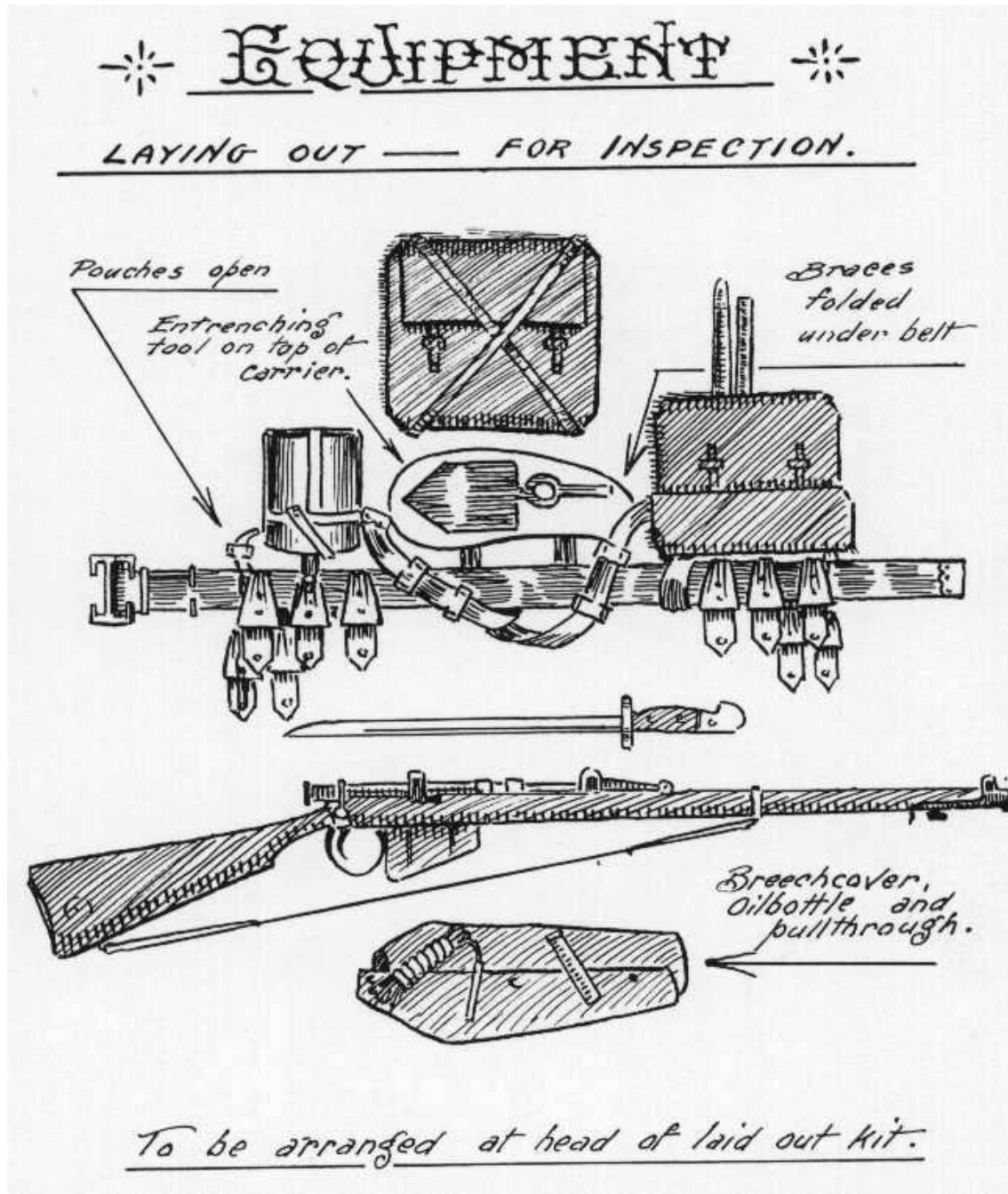
⁶³ OC 7th Light Horse Regiment, 22 March 1915, AWM25 389/1

⁶⁴ AIF Order No. 1098; Cox, Cox, Reginald H.W., *Military badges of the British Empire, 1914-18*, London, Benn, 1982, pp. 16, 18

⁶⁵ AIF Order No. 937

⁶⁶ Scott XI: *Australia During the War*, p. 259

with 23/- for British boots.⁶⁷ In response to these problems, the sole of the boot was thickened and the tongue lengthened.⁶⁸ Because the Australian soldier apparently had larger feet than his British counterpart, the requirement for the larger sizes was underestimated, leading to periodic shortages.⁶⁹



Webbing equipment was standard issue for all infantrymen although shortages initially prevented it from being issued to the other arms. Webbing had been invented in the late

⁶⁷ HQ 3rd Division, 15 September 1917, AWM25 121/1

⁶⁸ ADOS AIF, "Report on Boots CP", 17 September 1917, AWM25 121/1

⁶⁹ HQ 1st Division Base Depot, 5 September 1917, AWM25 121/1

19th century by an American Army officer, Captain Anson Mills, who had patented it as a method of carrying ammunition superior to leather, since the latter could sweat and thereby corrode brass cartridges. The Australian infantryman's belt, ammunition pouches, braces, pack, haversack, bayonet frog and water bottle carrier were all made of webbing.⁷⁰ One of the infantryman's first challenges was assembling his webbing:

Web equipment, that ingenious tangle of canvas straps and bags with which the British Infantryman envelops himself. Displayed deftly before the recruit by an instructor, who has probably spent years of his life mastering its intricacies, it looks sublimely simple. Later the innocent rookie is handed some fourteen or fifteen pieces and ordered to put it together. The average platoon could have the entire Sahara Desert to lay the web out on and still emerge a sweating swearing mass to find that besides having assembled it altogether wrongly, each one had either taken some of the next man's part or in some devilish inexplicable way had buckled their kits on to his. The inventor probably died insane...⁷¹

Infantry Equipment Set (1914-18)⁷²

Item	Quantity
Haversack, General Service	1
Webbing belt, Pattern 1908	1
Braces, with buckle	2
Carrier, cartridges, 75 rounds, left	1
Carrier, cartridges, 75 rounds, right	1
Carrier, water bottle	1
Pack	1
Straps, supporting	2

The cost of fitting out an Australian soldier was estimated at between £40 and £50, with maintenance costed at £12 per annum. This was a very large sum of money for the time, when the basic wage was 8/6 a day.⁷³

Prior to the war, the training issue of the day was "how do I pack the maximum amount of training into a few night parades and a one week annual camp?" Men like Colonel John Monash of the 13th Brigade could pack it in very tightly. In December 1913 he ran

⁷⁰ Simkins, *Kitchener's Armies*, pp. 268-9

⁷¹ Keown, A.W., *Forward With the Fifth: the story of five years' war service, Fifth Infantry Battalion, A.I.F.*, Melbourne, Specialty Press, 1921, p. 25

⁷² "Instructions in Regard to Clothing of the Expeditionary Force, Australian Military Forces (Exclusive of Permanent Staff)", 12 August 1914, AWM25 187/5

⁷³ Scott XI: *Australia During the War*, pp. 255, 663

his company and battalion commanders through a Tactical Exercise Without Troops (TEWT), a military exercise in which troop movements are reckoned off maps. Monash always included logistical problems with his TEWTs, in this case the road and rail transport required to move the brigade to its annual camp site at Lilydale, Victoria, and keep it in the field. The results were then carried out at the camp itself in February 1914, so that they could see how their ideas actually worked in practice. The climax of the camp was a two-day brigade exercise in which four battalions attacked a position held by a fifth entrenched on Mount Mary.⁷⁴ This kind of operation was typical of the training regimens of the day of both the British and Australian armies, which always ended with an assault, which was always successful.⁷⁵

AIF units began forming from 17 August 1914 on, concentrating at camps within 30 kilometres of the state capitals: the Randwick Racecourse and Kensington, New South Wales; Broadmeadows, Victoria; Enoggera, Queensland; Blackboy Hill, Western Australia; Morphettville, South Australia; and Pontville, Tasmania.⁷⁶ Bridges did not intend that units would carry out all, or even significant amounts, of their training in these camps. If he had, he might have selected training areas upstate. He divided the training program into three phases. First phase was in the camps prior to embarkation, estimated at being about three weeks. Second phase was on board ships bound for England, estimated to take about six weeks. The third phase was training after disembarkation in England, where the majority of training would be carried out. Given the limited time available in Australia, training was to concentrate on the individual. Each infantryman would become familiar with his rifle and each gun crew with their gun but only the Western Australian battery, the 8th, actually conducted a live firing exercise before embarkation.⁷⁷

⁷⁴ Pederson, P.A., *Monash as Military Commander*, Carlton, Victoria, Melbourne University Press, 1985, pp. 34-36

⁷⁵ Hamilton, Ian, *Gallipoli Diary*, Volume I, London, Edward Arnold, 1920, pp. 249-250

⁷⁶ Bean I: *The Story of Anzac*, p. 82

⁷⁷ Horner, *The Gunners*, p. 81

Units formed in 1914 ⁷⁸

Unit	Officers	Other Ranks	Total
1st Division	641	17,386	18,027
1st Light Horse Brigade	100	1,867	1,967
Line of Communications Units	98	1,868	1,966
2nd and 3rd Light Horse Brigades	184	3,740	3,924
4th Infantry Brigade	148	4,391	4,539
1st Reinforcements	24	1,888	1,912
2nd Reinforcements	10	898	908
Total	1,205	32,038	33,243

Sending an army of 20,000 men and 7,500 horses with their baggage, equipment and stores to Europe was no small order. The Royal Australian Navy requisitioned vessels and refitted them as troop transports. In all 28 ships totalling 237,885 tons were selected for conversion. The provisioning of the ships was an administrative achievement, involving staff work of a high order.⁷⁹

The AIF did not simply spring up when Bridges stamped his foot. Its rapid creation was the culmination of years of hard work. The AIF had leadership that was apparently of a high standard with a considerable number of regular and battle tested officers, drawn from a relatively large peacetime army. Its equipment, except in the matter of artillery, was the equal of, or identical to, that of the British Regular Army. The so-called Kitchener or New Armies that Britain began raising shortly after the outbreak of war would not be equipped to the AIF's standard for months to come.⁸⁰ The AIF's organisation and tactics were modern, conventional, and quite similar to that of the British Army. The AIF also had a preponderance of combat troops over logistical units.

On 1 November 1914, the AIF sailed for Europe.⁸¹ How well its leadership, its technology, its tactics and its organisation adapted to the challenges of new form of warfare that it encountered there is the subject of the following chapters.

⁷⁸ GS AIF, "Table showing allotment and distribution of troops", 23 September 1914, AWM25 839/15

⁷⁹ Scott XI: *Australia During the War*, pp. 221-224

⁸⁰ Simkins, *Kitchener's Armies*, p. 31

⁸¹ Bean I: *The Story of Anzac*, p. 98