

French Artillery in 1918

In 1914 the French Army's principal artillery piece was the famous 75mm field gun with its hydraulic recoil(less) system. It could fire 12 rounds per minute; its weight was 1870 kilos and it required six horses to move it. It fired all types of shells; the direction of fire could be raised/lowered between -11 degrees and + 18 degrees. Over 4600 of these guns were supplied to the Army's 62 regiments, forming 1043 batteries (of which 24 were in North Africa). A gun with its ammunition wagon was served by 14 men: 6 drivers, 6 gunners and a corporal and sergeant.

In total, the French Army mobilised in August 1914 10,650 officers and 428,000 men—in all 438,650, nearly half a million.

Because the mobility of their 75mm was thought to be better suited to the type of warfare the French preferred, they lacked heavy guns, considered to be unnecessary in a short war. There were 67 batteries of heavies—84 (120C) + 20 (120L) + 104 (155CTR) = 308 guns—but all were old and obsolescent types. It was not only the military thinkers and the French Ministry of War who were against providing heavy guns. The politicians played a part. Only in two years (1910 and 1913) during the prewar years 1901–1913 inclusive, did parliament vote more than the requested credits for materiel for the Army. In every other year, less, sometimes much less, than was requested was funded, with the result that over those prewar years, out of the 1042 million francs requested, only 796 million were voted.

The Army's artillery doctrine in 1914 was clear: the role of the batteries of 75mm guns was to support an infantry assault by accompanying the infantry as they attacked. The batteries fired on visible targets, with commanders communicating by voice or arm signals, rarely by telephone. Artillery observers were to provide the communication with the infantry but, in fact, there was little liaison between the two arms.

Before moving to 1918, four points about the intervening years should be made. First: it was recognised very early on—in the opening weeks—that the lack of heavy guns had proved to be a big mistake. General Ferdinand Foch, who commanded the Northern Army Group coordinating the Belgian, British and French forces in northern France and Belgium, wrote to his CinC immediately after the First Ypres battle, and again on New Year's Day, January 1915. Foch listed what he believed was required: large numbers of siege guns with plenty of shells to deal with fortified enemy positions; mortars and other weapons capable of lobbing bombs into enemy positions; and sappers for mining operations and digging equipment such as had been used for constructing the Paris métro. He wanted many more machineguns as well. He was also thinking about artillery tactics. In addition to superior numbers of guns, Foch saw the need for counter-battery (silencing enemy guns during an infantry attack), for getting the 75s as close to enemy trenches as possible, and for 'an intimate union' between the infantry and the artillery, instead of treating the two arms separately.

Second: in 1915 both Britain and France created munitions ministries to deal with the huge (and unexpected) problem of providing the enormous numbers of shells required in this

modern industrial war. The Socialist French deputy (member of parliament) appointed to the task was Albert Thomas. He was a particularly able and energetic minister and got on well with his British counterpart David Lloyd George. In a statement to a representative from *The Times* newspaper, Thomas noted how the collaboration between the two departments was becoming daily 'more intimate'. He stated: 'we have come to practical decisions which should prove of the greatest importance in the development of the development of our plans for the manufacture of munitions of war. We are carrying our cooperation so far that that we are now able not only to foresee the execution of our respective programmes, but even the carrying out of a common programme which will enable us to utilize to the utmost advantage the resources of both countries.' He made practical suggestions also, recommending the establishment of a permanent organisation to regulate the sharing of raw materials, the placing of orders and arrangements for exchanging materiel. Importantly, he urged the creation of a heavy artillery system on rails that could be used along the whole front from the Adriatic to the Channel. He was thinking about the long-term needs of an industrial and coalition war.

Third: technical aids to identifying enemy batteries existed even before the war. The physician/astronomer Charles Nordmann (he commanded the 33 Régiment d'Artillerie), invented an improved system for sound-ranging whose effectiveness he proved to high command on 9 December 1914. It was based on recording the different times registered by listeners hearing the sound of the enemy gun's fire. There were three other systems also under development, but uniformity was agreed on the basis of Nordmann's system. Flash-spotting to detect the enemy's fire was entirely operational as early as 1915. The development of aviation (the French were preeminent in this field before the war) meant that aerial observation and photography gave enormous help in identifying enemy batteries. The information provided in this way was collated in the artillery's own intelligence units (Service de Renseignement de l'Artillerie), set up in November 1915 within each corps and each army, and used to produce maps for fireplans.

Fourth: Generals Robert Nivelle and Philippe Pétain carried out important improvements during their time in 1917 as CinC. The new work-horse gun, the improved 155mm in several versions, was now being produced in great numbers from French armaments factories. Nivelle used the few batteries of the Artillerie Lourde de Grande Puissance, which had been created in 1915, together with the heavy naval and railway guns, to create in January 1917 a heavy artillery reserve. It contained 3 divisions, with a total of 1600 guns and 128,500 men. Pétain's contribution to the developments in artillery was different. He placed great emphasis on training, and established in his operations bureau at GHQ a 'section d'instruction'. Artillery instruction was to be carried out 'sur place' and the results gained strictly controlled. Since he considered secrecy in preparations vital to ensuring surprise when mounting an attack, he placed particular emphasis inter-arm liaison, ordering in August 1917 that firing to be 'regulated according to requests from aviators or based on information so provided. On 12 August he ordered a monthly artillery bulletin to be diffused, detailing new techniques and tactics so that all could learn. Pétain appointed artillery expert General Herr as 'Inspector

General' of the Artillery, with the task of visiting both French and Allied armies to ensure that new techniques and information were being diffused and applied.

By 1918, then, French artillery was vastly different from 1914. Instead of one basic gun, the 75mm, expected to achieve everything required, the French had a range of guns for different tasks.

type of materiel	quantity in 1914	quantity in November 1918
65mm mountain gun	120	112
75mm	4076	4968
105mm long	—	576
120mm long (old de Bange type)	120	44
145 and 155mm (heavy Filloux type)	—	480
155mm short	104	1980
155mm long	—	720
220mm mortar	—	324
280mm mortar	—	117
extra heavies	—	327
trench artillery	—	1600
anti-aircraft guns	48	900
TOTAL	5318	12,148

The artillery was organised around three functions, plus 'artillerie spéciale', namely the tank. The first was trench artillery, with the famous 58mm mortar (the crapouillot, named because it looked like a toad, a 'crapaud') already developed in 1915. But there were also heavier calibres in use: 75mm, 150, 240 and even 340mm. The second was field artillery (artillerie de campagne), which had lost its omnipotence by 1918. A significant change was the conversion of horse-drawn batteries to lorries. This change was enforced on 1 August 1917 by a lack of horses, but it was found that transporting 75s by road had significant advantages. The third and most important was heavy artillery, where the table shows the growth in numbers and types of gun. Now the artillery could give strategic support which had been entirely missing in 1914. The build-up was gradual as resources for building large guns were restricted and had to compete with shell production at first. Nivelles's heavy artillery reserve became in January 1918 a bigger general reserve of all artillery resources, with over a million men and 26,000 officers. Its five (six by war's end) divisions contained 266 artillery regiments with over 12,000 guns. One of those divisions was manned by navy personnel, with naval guns mounted on barges or used as railway guns.

The creation of a general reserve commanded by the French CinC was achieved by putting at his disposal all the non-organic artillery resources. In 1918 a divisional artillery consisted of one regiment of 75s (three groups of three batteries), plus a group of 155s, the new work horse, as already seen. The corps artillery lost its batteries of trench guns and now consisted

of one regiment of heavy guns (one group of 105s and one group of 155s—two groups if the corps had four divisions instead of the regular two) and it coordinated the divisional artillery. All other guns, however, were at the disposal of the CinC, giving him strategic mobility.

Moreover talks were in hand on the question of creating an Allied artillery reserve, although the war ended before this was created. This was something that Albert Thomas had suggested already in 1915, and General Herr, the Inspector General, was pushing for this. In August 1918 Pétain's chief of staff was agitating for an Allied artillery reserve, and for measures to construct 0.60 railways quickly so as to be able to move up heavies as the infantry progressed. He saw the need to construct heavies with caterpillar tracks to increase their speed and mobility.

The new 1918 artillery doctrine was based on speed of strategic deployment. The ability of the CinC to move large masses of artillery quickly (without having to arrange things with army commanders) meant that strategic surprise could be obtained. In 1914 it had taken several weeks to redeploy gun batteries, but by 1918 this could be achieved in two days. Motorisation meant that munitions could be supplied just as quickly. Rolling barrages were abandoned as they consumed too many munitions, as were long artillery preparations such as those used during the Battle of the Somme. Such long preparations had removed any element of surprise and churned up the ground across which the infantry would have to attack. Instead, improved spotting of enemy guns, proper calculation of wear and meteorological conditions meant that the strategic mobility, combined with much improved liaison between infantry and artillery, could give the Allied forces the strategic surprise necessary for a successful operation. Instead of large quantities of HE shells destroying the terrain in front of the advancing infantry, a large proportion of smoke shells and gas shells was used to hide the attackers and force the enemy to keep their heads down. Neutralisation, and not destruction, was the key.

Furthermore, liaison between artillery and infantry was made much easier by the developments in wireless and aviation. From 50 wireless sets in 1914, the French Army had 30,000 by 1918. (Telephones went from 2000 to 350,000.) Wireless simplified communication with ground troops. France was a world leader in aviation before the war, and on 14 May 1918 Pétain created the Division aérienne (Air Division). This placed aviation resources for spotting for the artillery and observing the fall of shell under the command of the CinC, in similar fashion to the general artillery reserve.

By way of conclusion, it is clear that the most salient aspect of French artillery in 1918 is the huge increases in both quantity and quality of guns and of men. From 18.1 per cent in 1914, the proportion of gunners in the army rose to 35.7 per cent. The last construction program (signed on 22 February 1918) projected for the 1919 campaign: 180 guns able to fire between 20 and 22 km; 80 guns with a range of 22-30km; 40 guns 30-45km; 18 guns 45-60km; 8 guns able to fire up to 120km. This represents an enormous achievement for a country where the most resource-rich areas (coal, iron ore) and industry-intensive areas were under enemy occupation. In addition to the numbers of guns listed in the table above, France also supplied the Allies: US, Belgium, Serbia, Russia (until it left the war), Italy and Romania. Out of the

300 million shells, for example, that France produced during the war, 25 million were sent to Russia, together with 20,000 machine guns and 1300 field guns. To the AEF they supplied almost 2000 75mm guns, nearly 1000 heavy guns/mortars, over 4000 aircraft, over 200 tanks, 57,000 machine guns, 22,000 rifles and over 10 million shells.

This supply by the French to the Allies explains the figures in the table for the 75mm gun of which the French gunners were using about the same number in 1918 as in 1914. During the war French armaments factories produced more than 27,000 75s (and 3000 of the short 155s as well). Except for those guns destroyed by enemy fire or abandoned on the battlefield, almost all of those 27,000 75s were supplied to the Allies. This takes no account of munitions workers, of course. On the production of shells for the 75s alone, 900,000 workers were employed; 210 million rounds were produced for the 75s during the war.

The Second Battle of the Marne supplies the best illustration of what could be achieved by these improvements, especially by comparison with the first in 1914, when 75s fired over open sights. Foch's counter-attack of 18 July 1918, following the five German offensives against Allied lines, marked what the Germans admitted to be the *Wendepunkt*, or turning point, of the war. It was an all-arms battle: tanks, aircraft and infantry, and without artillery preparation (guns had been pre-registered). All units assaulted together, with no warning of attack. Moreover, it was the most 'international' of the First World War battles, with Americans and Italians fighting alongside British and French.

There was a lot of bitterness by this stage of the war between British and French. The French thought that the British had run away during the first German offensives in March and April, whereas the British (in particular, General Sir Alexander Godley's XXII Corps) thought they were being left to do the hard fighting up the Ardre valley in the later phases of Second Marne. Yet Godley could write to Clive Wigram (King George V's private secretary) on 27 July 1918 that his men judged the French barrage supporting them "was the best barrage that they have ever seen or have ever had". There can be no better comment on the performance of the French artillery in the final year of the First World War.