7. Artillery in Defense

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Introduction

Defense was not the BEF's first priority. The British army was intended to go abroad and bring the King's enemies to heel, not defend a position. Field Service Regulations, the army's standard manual, of course discussed defensive fighting, but gave it less space than how to outpost a position, and only marginally more than billeting. [1] Artillery certainly had a role in defensive doctrine, and indeed the commander was instructed to choose ground that maximized infantry-artillery co-operation. The artillery was told to command the enemy's infantry movement, dominate enemy artillery, and support friendly infantry under attack. To top this off, an artillery reserve would support counter-attacks. But if all these things were possible it is hard to see why the British forces would be on the defensive. The same enemy superiority that forced a defensive posture would force the supporting arms to change priorities. While attacking infantry needed artillery support to win the firefight and make an attack possible, defending troops were (almost by definition) weaker than their opponents and needed support even more. Artillerymen would find themselves subordinate to the infantry in this facet of operations too, but changes in the army would alter the relationships.

Field Artillery Training said little more about defending than Field Service Regulations did, not even adding the tactical details and suggestions it included for attacks. [2] Covered gun positions were judged more likely to be useful in defense than attack, but otherwise the artillery fought with the same methods. Counter-attacks were much like attacks, perhaps requiring even more boldness but not more fire support. Nobody seems ever to have thought of a prolonged defense, or that the majority of British forces might be on the defensive.

1914

The reality of war in 1914, however, quickly saw the BEF fighting defensive battles. The first battles conformed roughly to expectations, with a portion of the force defending to buy time for operations elsewhere, but within five weeks of mobilization the whole BEF was spread out defensively along the Aisne. This was not, as *Field Service Regulations* predicted, so that troops could be concentrated elsewhere for attack but because the whole BEF was overextended. (Actually, troops were concentrated, but they were French and German. Before the war, without formal allies, the British armed forces had hardly considered alliance operations.) This was an unforeseen situation. Nobody was attacking locally, and the scale of the war dwarfed anything anticipated by *Field Service Regulations.* The battles in Flanders would be the first real experience of defensive trench warfare.

At first, this was little different from any other fighting. There were no special tactics for trench warfare, and the BEF fought in the same old way, just from trenches. Artillery brigades remained tied to infantry brigades, somewhat easing communications at the brigade level but making it virtually impossible to concentrate shellfire. Subordination thus wasted artillery's advantage of range, and at times the artillery assigned to an infantry brigade would be withdrawn when the infantry was. [3] The few exceptions to this subordination were remarkably successful—artillery concentrations could produce enough firepower to stop an attack—but the rarity of these exceptions proved the rule. [4] Ammunition shortages were so bad that Haig moved several batteries out of the Ypres Salient because they lacked shells to fire back and were just sitting targets. Fortunately, German offensive tactics—for both infantry and artillery—were as unsophisticated as British defensive tactics. The Germans bombarded an area, then charged in mass formations. The

surviving defenders blazed away, supported by all the shellfire that could be arranged. All counterattacks were ad hoc because there was neither time nor means to do anything else. It was a hand-to-mouth period for the BEF, with infantrymen and shells both in short supply. German casualties were immense, and the cumulative toll stopped the offensive. The BEF held most of its ground, and won time, but paid in the universal military currency: lives.

Trench Warfare, 1914-1916

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Trench warfare flowered over the winter of 1914-15. Previously, units had entrenched for purely tactical reasons, thinking it was temporary. While it started as a defensive arrangement, it subtly broadened into being a way of life, the norm from which everything else differed. The details, the novelty, and the arcane vocabulary sparked intense interest in trench warfare in the Kitchener Armies and in the general public. Interest in mobile training á la the *Field Service Regulations* waned, since it was clearly useless; trench warfare had everyone's attention. There was impatience with generals who were fighting in the old way when the public wanted everything up to date. Brigadier-General F. G. Stone lectured to the Royal Artillery Institution in November 1915 about "Co-operation between Artillery and Infantry," and the bulk of his remarks were about how trench life was organized, giving his audience detailed examples of the latest practices. [5]

The artillery had their own adjustments to make. Infantry were organized into brigade sectors, and sometimes subdivided into battalion sub-sectors as well. [6] A division typically had two brigades in the line, each with two battalions in the front trenches. A third battalion would be in reserve, and the fourth battalion of the brigade would be "resting," but more likely employed on labor details. Artillery was still organized on a divisional basis, and divided among the infantry brigades. Thus an infantry brigade would be covered by its 'own' guns, with the communications network running straight back but with few sideways links. When more guns arrived on the Western Front they were attached to the groups directly rather than held under some central control, be it division, corps, or army. Frequently a wide variety of artillery was assigned to a single group. Thus a humble lieutenant colonel, formerly commanding three 18-pounder batteries, could find himself with field howitzers, heavy howitzers, and mountain guns as well. [7] Each had different supply, stabling, billeting, and ammunition requirements, and each needed different kinds of positions for maximum tactical efficacy.

This clumsy arrangement was created for the infantry's convenience. It gave them a single point of contact for all their artillery requests, but it caused trouble for the artillerymen. Some brigades became the bases for these groups and found their tiny staffs inundated with work, while other brigades had their batteries taken away and had nothing to do. Administration suffered, and probably only the limited amount of fighting enabled the system to work. Despite the difficulties, this system of sectors received official backing as late as June 1916, although by then mountain and most heavy artillery had been withdrawn from the divisions, and thus the harried brigade commanders. [8]

This system made for very good infantry-artillery liaison, but only front-to-back. The infantry battalion in a sector would put up their SOS signal and they would get prompt support. Originally SOS fire was called "night lines," on the theory that pre-arranged fire would only be needed at night—in daytime artillerymen could (in theory) shift their fire to where it was most needed. It was first used on 29 October 1914. [9]

This system was far from perfect. Guns supporting one battalion could not help the neighboring unit unless the message was first passed up to the CRA by the first unit's artillery liaison officer and then back down to the other artillery group by the CRA. If the

brigades were in different divisions, there would be extra layers of problems. Opportunities for maximum effect were wasted through lack of centralized control. [10] SOS fire lasted for a pre-set period of time, which might be too long (in case of a false alarm, or if a raid were aborted) or too short (if facing a serious attack). Meanwhile, one unit sending up an SOS flare generally provoked a German response, which typically would fall partly on another British battalion, which would want its own artillery support, and the situation could escalate, wasting shells when there was nothing worth shelling. The second pernicious effect was in reinforcing each infantry unit's belief they had an absolute right to artillery support. Ideally, artillery fire would be used where it would most affect the whole battle, not dissipated in supporting every infantry battalion.

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This was the ideal, but there were reasonable grounds why it did not happen in 1915. First, communications were poor: telephones, switchboards, and even telephone cable were in short supply, so it was not possible to integrate artillery units into a broader attack. Second, it was against all tradition and practice (there were even doubts about the legality of higher artillery command). Third, the infantry battalion in 1915 did not possess the integral firepower that it would develop later in the war. Without artillery support, the infantry might have given way. All this, reinforced by their own problems and views, kept the artillery operating under the same flawed system of directly assigned support.

The BEF had staved off disaster in 1914 at the First Battle of Ypres. The Germans tried again the next spring, but the fighting in the Second Battle of Ypres did not suit the trench-warfare organization into which the BEF had by then drifted. [11] The rigid command and communications organization fell apart after the initial German advance, forcing a return to more or less the methods of 1914. Communications did not work well under either system (if that is not too misleading a word for conditions as haphazard as they were), and eventually the BEF had to shorten its line. The defensive failure at Ypres did not lead to any significant rethinking of defensive policy. Defensive improvements in 1915 called for more trenches, more men, more artillery, and more machine-guns, not better use of available forces. There are three partial explanations for this: there was no formal defensive policy, and no group to review it had there been one; the Ypres defenses had eventually checked the German advance; and the initial breakthrough (that had unhinged the rigid defenses) was not the BEF's fault. Second Ypres was the only large German attack on the Western Front in 1915, so the BEF's defenses faced no more severe test. In July the Germans launched a well-prepared, if small, attack at Hooge. The results showed some defects in British defenses, but caused few changes.

The BEF did make progress in defensive support of attacks. Few people, in or out of uniform, expected the entire German forces on the Western Front to collapse from an Allied attack, so steps had to be taken to protect attacking infantry from counter-attacks, whether immediate or delayed. The attack at Neuve Chapelle featured a "barrage" intended to delay the German reserves—it was a defensive part of an offensive plan. [12] Otherwise, the plan was silent, apparently since the Germans were not expected to counterattack until British artillery had moved forward. These were two of the three responses to the counterattack problem. The third was purely ad hoc: doing whatever was possible during the battle.

The BEF's small and futile attacks between March and September 1915 did not get far enough to need protection against major counter-attacks. If they gained any ground at all, it was only a trench or two. The short advances made it easier to support the survivors, since the main observation posts (OPs) in the British frontline trenches could see the captured ground and any developing counterattacks, which also reduced the intelligence gathering and communications problems. Of course, German shelling frequently cut the telephone wires from the OPs back to various headquarters, wrecking the communications network, but that would always be a problem.

The battle of Loos was the largest, best-planned, and most successful British attack of the war so far. It envisaged some partially defensive measures built into the bombardment as well as more active steps to support troops against counter-attacks. For the first time harassing fire was organized to interdict German reserves (and the headquarters directing them) before the battle. On the day of the assault this had to be dropped due to gun and shell shortages; there were other things the artillery had to do that were considered more important. Instead, extra care went into reporting counter-attacks, still using OPs in the British frontline, but which now reported to corps-level headquarters. The corps was not only an increasingly important command echelon, it also had enough resources to make a difference, and its participation removed a layer from the command chain. This, in theory, would speed up reactions, and a corps message center became a standard part of British attacks. This was a faint gesture toward centralized control of scarce resources.

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Furthermore, there were detailed plans for guns to advance and provide direct support of the infantry in the mobile fighting that would follow the expected breakthrough. Routes were assigned and special trench bridges provided so that guns could advance and provide both offensive and defensive support. The field artillery would fire pre-planned barrages for 80 minutes, and then advance under divisional command. [13] Unfortunately, none of this solved the communications and organizational problems. By moving, the advancing guns put themselves out of communication with higher headquarters while not really solving the problems of liaison with the forward infantry. They were physically closer to the infantry, but those last few yards were still an insurmountable gap. The advanced batteries could not support a unit they could not see unless they could organize a chain of orderlies to carry messages. This had its own problems, starting in the front line: infantry needing support had the most difficulty passing word back. [14] German defensive artillery barrages were intended to divide the battlefield, separating the forward infantry from both artillery support and reserve infantry. Finally, when news of a counter-attack arrived, the British command structure was not sufficiently sophisticated to rapidly mass fire, and artillery was in such short supply that guns to support one sector had to be pulled away from some other assignment.

In 1915 on the Western Front the Germans were almost totally on the defensive. Thus at Loos there were no large reserves massed for a deliberate counter-attack, though there were tactical counter-attacks during the battle. In 1916 things were different. The Western Front was the main theater. Not only did the Germans launch the Battle of Verdun, they made several attacks -with -limited objectives against the British. And there were large reserves available to counterattack during the Somme, a policy that meant German loss rates roughly matched Allied ones.

The limited attacks were a German specialty; they had begun using large masses of artillery to blast the way clear to a nearby objective in October 1914. [15] In 1915, most German attacks had involved more than simple artillery superiority: they added mines, poison gas, or flame-throwers. For British staff officers these elements confused the issue, making the main cause of the German success debatable rather than due to the massed artillery. The lack of an agreed-upon reason for the German victories delayed changes in British defensive doctrine. Artillerymen avoided most of the blame. Massed German artillery drove the defenders back, and there was little to be done—the odds were simply too steep. As an example, when in May 1916 the Germans pushed the BEF a little further down the slopes of Vimy Ridge, Haig did not send masses of men or guns to regain the line at any cost. He bided his time to counterattack, sent his MGRA to better co-ordinate the guns already present, and ultimately never did counterattack. [16]

Few senior officers were sacked for failure in defensive operations: between Second Ypres and the Kaiserschlacht there were only four cases of officers being clearly removed for

losing ground. [17] Sir Horace Smith-Dorrien was sent home in disgrace after requesting a withdrawal around Ypres in April 1915; Sir Henry Wilson was relieved when his corps lost ground on Vimy Ridge in May 1916; after the June 1916 fighting at Hooge the CRA of the 3rd Canadian Division was removed; and the commander of VII Corps was replaced after the German attack in the battle of Cambrai. However, the cases of Smith-Dorrien and Wilson were army politics as much as anything else (each was detested by his commander in chief). [18] Nor were more junior infantry officers purged when their units failed, and it appears that no brigadier-general or higher was replaced except for wounds. [19] Botching an attack may have been a greater career risk than being driven back. Probably most hazardous career move—and with the least cause—was failing to hold ground against a counter-attack.

There was also little clear policy governing the defensive use of artillery. The "Artillery Notes" series detailed various aspects of attacking, but the pamphlet "Artillery in Holding the Line" was published in sufficiently small numbers that none have survived. The title alone suggests a passive or at least rigid defensive mentality. Its contents can be surmised as more of the same, approving and elaborating the ad hoc system that had grown up in 1915. "Sectors" were official policy, and SOS lines were normal practice. [20] (Appendix 14 is a period discussion of defense and other topics.) There was no modification of defensive measures to reflect the evolving and improving command system, or any consideration of changes in the infantry. This suggests that doctrine was still compartmentalized. The command system had improved in order to support attacks, and could have helped in defense too, but offensive and defensive were different categories. Also, defense became a more secure proposition as the infantry received more grenades and machine-guns. With their growing internal firepower, did they really need so much artillery support? Should it be provided in the same old way?

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During the Somme fighting there were many German counter-attacks, so the protective aspects of barrages were highlighted. The protective value of creeping barrages had been foreseen in "Artillery in the Offensive," where it mentioned their utility in "stopping any attempts at counter-attack." Beyond this offensive-defense, there were no particular innovations in defensive artillery tactics. SOS signals were still the main way to request artillery support, and the lack of reliable mobile communications made attacking troops vulnerable. A new method developed for coordinating defensive fire in an attack, namely improved RFC-RA liaison. "Zone calls"—reports from air observers reporting German activity by code phrase and map coordinate—were first developed to deal with German artillery, but quickly expanded to deal with all German activity. Lack of confidence drove all the plans. Artillery was asked to fire enough to quash counterattacks by itself. The infantry were too short of integral firepower to defend alone, but they wanted more than artillery help: they wanted the artillery to do it all. [21] The principle was broadly that of the SOS call, merely extended into the attack. Later there were some encouraging signs, such as protective barrages (which were fired after the infantry reached their objectives, or at least after they were scheduled to reach them) lifting so the infantry could put out patrols rather than simply digging in behind a curtain of shells. Against deliberate German counter-attacks, there were no significant improvements. SOS fire was the main artillery response and, while useful, better things might have been done.

1917

1917 provided the BEF a variety of defensive lessons. GHQ had not updated "Artillery in Holding the Line," so defense in trench warfare was unchanged. The re-organization of field artillery, with divisions losing roughly one-third of their guns, was completed primarily to facilitate attacks, but defense played a role. Divisions retained two artillery brigades, which tallied neatly with the two infantry brigades that held the line. Artillery organization was thereby simplified, and divisions could drop "groups" when necessary, while divisions with

48 guns still had enough defensive firepower. This recognized the infantry's greater firepower and fighting skill, but it also took account of the greater firepower the artillery could generate. (This is a tribute to the shell factories: guns without shells are useless, as they were at First Ypres, but with ample shells guns could develop their full firepower.) Before 1917 there was no real 'yardstick' for apportioning artillery in defense as there was for attacks. Now an 18-pounder per two hundred yards of British front was considered adequate, as long as the Germans couldn't mount a surprise attack. (Here the BEF's staff planners recognized that they could not launch surprise attacks and assumed Germans tactics led in the same direction, toward massive bombardments.) GHQ did point the way from SOS fire to counter-preparation, which was essentially bombardments used to disrupt the attack before it got started, but assumed that there would be enough warning for the artillery in the threatened sector to be reinforced. [22] In 1918 the Germans found a way to mount surprise attacks, and the BEF rapidly had to revise its defensive doctrine because the reinforcing artillery did not arrive in time.

But in 1917 there was little defending to do in the advance to the Hindenburg Line. Allied forces pushed slowly ahead, the deliberate pace chosen expressly to avoid offering counter-attack opportunities. The Germans were no fools, and probed only a few times. The only significant instance was at Lagnicourt, where the BEF had advanced guns dangerously close to the front line to support an attack to their flank. [23] The Germans mounted a surprise attack, penetrating an extremely thin infantry screen and temporarily over-running several batteries. However, other batteries stood their ground (killing many German infantrymen), and the Australian infantry regained the lost ground, winning four Victoria Crosses in the process. It was a small action that was different enough from the norm of trench warfare so that generalized lessons were hard to detect, but it did not help that the BEF was focused on trench warfare. Mobile operations were not common, and actions like Lagnicourt were considered the exception that proved the rule. And in truth, for trench warfare Lagnicourt did offer few lessons.

The defensive aspect that blossomed during 1917 was protection against counter-attacks. "Artillery in Offensive Operations" called for the artillery to prevent the "assembly and approach of counter-attacks of all sizes." [24] Typical of the prescriptive, centralized style of operations in the BEF, plans were to be drawn up ahead of time for protective barrages during the infantry's consolidation. There were occasional differences from this style, such as Ivor Maxse telling a batch of company commanders to push as far as possible if the Germans were disorganized: "Hold what you can with rifle fire. We will meanwhile organise artillery fire to help you." [25] Protective barrages were also to be fired "as long as it is required by the infantry," showing that the increasing flexibility of offensive tactics was not matched on defense. As the Germans shifted ever further away from a rigid defense, so the British faced more and more counter-attacks. [26] With more experience, techniques such as using aircraft to send zone calls about impending counter-attacks improved. The improved command system of 1917, which made it easier to switch artillery fire to more important targets, also helped. The German system of counterattacks was occasionally too rigid, and timed counterattacks proved especially vulnerable to British shellfire. German reliance upon counter-attacks (launched, say, three hours after the British attack began) led the BEF to develop special tactics. These included filling valleys with gas (to delay and/or kill German infantry), leaving some routes open until the day of battle and then shelling them, or simply cratering the approach roads. There were also debates over whether to allow the Germans to assemble before shelling them (thus increasing the casualties inflicted) or dispersing counter-attack troops as soon as they were detected. However, this was a peripheral argument: the basic principle was to provide maximum protection to the infantry, using large numbers of shells.

The deliberate German counter-attack attack at Cambrai was the first large attack made upon the BEF since the spring of 1915. It had two wings, one nearly triumphant, the other

barely successful. Where it was a success, many of the circumstances were similar to the smaller attack at Lagnicourt: surprise, a thin infantry line, guns primarily employed supporting neighboring infantry, and inadequate communications. Once again guns were overrun but heroic gunners and British counter-attacks saved the day. (The first artillery Victoria Crosses since 1914 were awarded to Sergeant C. E. Gourley and Lieutenant S. T. D. Wallace. Wallace and only five men kept two guns in action for two hours under heavy fire; the men all received the Distinguished Conduct Medal.) Overall, the new German tactics had yielded a substantial success and shook GHQ. According to British expectations, the Germans could not have mounted the attack, not least because there had not been the artillery preparation the British judged necessary because they needed it for one of their own attacks. And while much of the blame was shifted onto the shoulders of the infantry, there was food for thought. [2] The experience was carefully examined for lessons, because the BEF was now on the defensive for the first time since the winter of 1914. The Third Army looked at the fighting around Bourlon Wood, where the line had held, and decided that artillery in sufficient density to support an attack was enough for defense too. [28] Yet this would be little comfort where the artillery was not concentrated, since the norm for holding the line was an 18-pounder every two hundred yards, a far cry from the attack formula of one per twenty-five yards.

1918

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1918 began under very different strategic circumstances than 1917. Thanks to Russia's collapse, the Germans were shifting troops from the Eastern Front. After heavy losses during the Nivelle Offensive in spring 1917, the French Army was hesitant to attack. The Americans were arriving but would take a long time to make their presence felt. The Germans had, for the first time since 1914, a numerical superiority on the Western Front, and they intended to attack before the increasing American strength tipped the balance.

This put the BEF in a defensive posture and required new plans. GHQ took firmer steps than previously to organize defenses and establish a standard policy. Over the winter of 1916-17, several armies had formulated their own policies, focusing more on staying aggressive and maintaining the initiative than on minimizing casualties and sparing time for training. (The Fifth Army alone had fired over 2,000,000 rounds despite never attacking in more than battalion strength. [29]) Now the whole BEF needed a quiet period to reduce casualties, allow training, and improve their defenses. Artillery policy was heavily affected. Previously the artillery had been aggressive, with three main components to its policy. First, there was steady counter-battery fire, trying to suppress all German shelling and also looking to destroy some German guns. Second, the artillery would blast German positions, either to ease the life of the British trench garrisons or to prepare for a local attack. (Appendix 29 and Appendix 30 are orders for the Third and Fifth Armies for the winter of 1917-18.) Third was harassing fire to inflict casualties and lower German morale via the strain and losses. But now a live-and-let-live approach operated for the artillery and infantry. This was especially true where British troops relieved the French, since the French usually made few aggressive moves other than launching major offensives; to them trench life was very quiet. Now if the BEF continued the French modus vivendi it would deceive the Germans about Allied moves and dispositions. [30] Even the normally aggressive Australians were restrained, "as it is not desired to stir the enemy into activity without good cause." [31] The Fifth Army, in contrast to the previous year, ordered no harassing fire and no bombardments. [32] It was recognized that some offensive action was needed, and destructive shooting did continue, largely in the form of counter-battery fire.

The change in artillery activity was the result of a new pamphlet on "Artillery in Defensive Operations." [33] (This is available as Appendix 33.) It dealt with all facets of artillery defense, from underlying principles, through tactics, to advice on how to disable a gun about to be captured. It drew together the trends of 1917, including limiting SOS fire and

supplementing barrages with counter-preparation—shelling the enemy as they prepared, before a defensive barrage was even necessary. [34] The authors were no radicals and elaborated GHQ's own instructions from early 1917, [35] but even before GHQ could promulgate the new policy various armies were doing the right things. [36] Even while "Artillery in Defensive Operations" was delayed for approval, Birch was urging armies to operate according to the 'ABCs' or first principles. [37] (Birch's memo on this is available as Appendix 31.)

The policy was comprehensive, including trench mortars and machine-gun barrages. In 1917, artillery officers had integrated these weapons into creeping barrages, and now they would be integrated defensively too. In essence, this policy put an artillery office in charge of all the fire support for a sector, which was then wielded from a central headquarters—if communications permitted. Areas would be covered by artillery, mortars, or machine-guns, whichever provided better coverage. Later in 1918 this was taken even further, with GHQ ordering that some sectors be left unsupported instead of fire support being uselessly thin everywhere: "It is far better to search two or three sectors of the front thoroughly than to distribute fire of less violence and density over the whole front." [38] This was the final step in removing the infantry's 'right' to artillery support. Established by default with the first "night lines," the idea was obsolete by mid-1917 (at least for quiet sectors) but had never been officially revoked. British infantry were flatly told that "repulse of assaults" was only the *third* priority of artillery, behind "destruction of the enemy's fighting power" and bombarding communications. Mere retaliation for hostile shelling was obsolete for counter-battery work, and now its twin in defensive doctrine also passed away.

In common with the whole command system of the BEF, the policy assumed considerable centralization. (Diagram 3 illustrates how much information had to be prepared for a defensive position that would become useless if the line moved.) Centralization theoretically leads to efficient use of scarce resources, but it relies on the rapid transmission of accurate information in substantial quantity. The Germans took stringent measures to preserve secrecy, measures that worked despite British probes. The Fifth Army tried stratagems such as shelling bridges and roads just behind the German line, hoping that repairs would indicate German offensive plans. [39] Passing messages in World War I was never easy, and reliance upon centralization invited trouble if the system broke down. At the tactical level, one battery later reported "the more [telephone] wire you give us the more Huns we shall kill," while a brigade commander thought the effort of digging gun positions would have been better spent burying cable. [40] The Germans took quite sensible measures to shell British headquarters, telephone exchanges, and other key communications points. They also built more flexibility into their tactics and were just plain lucky that the weather hampered the British defense. All this contributed to the collapse of central organization in British resistance, and turned the March Offensive into an enormous 'soldiers' battle' fought at the battalion and battery level. [41]

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The German offensives began before dawn on 21 March 1918 with a massive offensive mainly against the British Fifth Army. (Map 16 and Map 17 show the main German offensives in the British sector and on the Western Front in 1918.) Before the British even fired on 21 March, they had to abandon the new doctrine. The Germans had (as at Cambrai) achieved surprise, so the Fifth Army's artillery had not been reinforced. The tactical surprise meant that counter-preparation was ineffective, but the strategic surprise meant that the British reserves were elsewhere.

There was not enough artillery in the Fifth Army to make much

difference with counter-preparation fire even if there had not been tactical surprise. During the Kaiserschlacht (or 'Michael' offensive), events went badly for the BEF, and the artillery was caught in the thick of things. The Germans had pinpointed most British battery positions and gassed them heavily, greatly reducing the effectiveness of the coughing, half-blinded gunners struggling in their masks. Thanks to the mist and German shelling of telephone lines, some batteries never saw SOS flares or received orders to fire. Communications collapsed in the first few minutes, fatally compromising any chance for proper counter-preparation fire or centralized control of the battle. [42] Instead, isolated batteries and even single guns [43] fought their own battle, frequently firing over open sights until ammunition was exhausted, sometimes providing barrages that were far too thin and too narrow. The batteries held in reserve were the most useful of all; the Germans had not identified their positions, and while in reserve they trained for mobile operations, which turned out to be just what was needed. [44]

The tale of the first ten days is replete with stories of unsupported guns holding off German infantry but, just like local successes by the infantry, eventually a flank was turned somewhere and the whole line had to pull back. Nobody can question the gunners' individual bravery, but there was no opportunity for artillery to have more than a local effect on the battle. Liaison became increasingly difficult, and at least one corps re-organized its artillery to cover sectors completely divorced from those of the infantry divisions. [45] This was an important step away from uniform defensive barrages and towards destructive concentrations. When not fighting separately, artillery was being used to influence the entire battle by concentrating on key sectors. Some infantry would lose support, since decisions on where to concentrate artillery were made by formation commanders who focused the fire where it was most needed. Artillerymen offered technical advice on weapon limitations, and doubtless made suggestions, but they were not the final arbiters of who did or did not get support.

As was only natural for a commander in chief, Haig did his utmost to encourage the troops and learn from the battle. He visited many headquarters, and usually took Birch with him. [46] Beyond absorbing the lessons themselves, there was little that could be done to affect the fighting spreading across the old Somme battlefield. Birch spotted the right lessons—especially the need to use heavy artillery immediately or not at all—and the crying need for mobile training of the field artillery. [47]

The heavy artillery had many problems. Many heavy guns were captured, and the rest were slow to move, slow to get ready to fire, and slow packing up to move to new positions. The result was that they had to be withdrawn from action earlier than the field artillery, or even more would be captured. The rule of thumb was that if the front moved faster than three miles per day, heavy artillery could play no useful role. [48] Additionally, the breakdown in intelligence hurt heavy artillery. Since it fired at specific targets rather than at a general line in front of friendly infantry (because of the lethal radii of heavy shells, they had to be fired well away from friendly troops, even in defense), the wrecked communications network thrust the big guns deep into the fog of war.

Most histories present the Lys offensive (starting on 9 April) as the second German offensive in 1918. This however ignores the Third Army's comprehensive defensive victory along the Scarpe on 28 March, known to the Germans as the 'Mars' offensive. [49] This was a victory won largely by superior firepower, and there are strong signs that GHQ anticipated the attack and took steps to maximize British firepower rather than adding manpower. (Perhaps firepower was all that was possible, because the ongoing 'Michael' battles were absorbing all the BEF's reserves and more.) The day before the attack, Haig sent Birch (who

at least had second-hand experience from visiting most of the corps involved in the Kaiserschlacht) to advise the Third Army on defensive artillery measures. [50] The key suggestion was to keep a central reserve of heavy artillery, under command of the Army MGRA. Coming one day before the attack, this idea had little effect; there was no time to reorganize commands and for all the subordinate formations to adjust their plans. Rather, tribute must be paid to the fighting qualities of the British infantry, but their close artillery liaison should not be forgotten. [51] The field artillery fired an average of 750 rounds per 18-pounder in a single day, one of the heaviest efforts of the war, and the heavy artillery engaged German infantry as close as six hundred yards. [52] Counter-preparation worked well, barrages worked well, and everything showed just how good British defensive measures could be. The four British divisions lost only a few trenches, and the reserve infantry were able to play cards all day long; only in the evening were they moved, and then to relieve tired units. A German history reports that the attack failed "because of the great disturbance caused by the British artillery fire," and at the end of the battle eleven divisions had been stopped by four. [53]

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The key point was advance warning, which allowed counter-preparation to be fired when the Germans lacked time to recover from its effects. [54] If it were fired too soon, the British batteries would be revealed for the Germans to shell during their preliminary bombardment, while the German assault troops would not yet be in the trenches. If fired too late, the assaulting troops would have left the trenches and the shellfire would 'hit the air.' The BEF learned that counter-preparation had to be as intense as offensive barrages, not merely desultory. [55] Decisions this important were not left just to the gunners, but reached to the highest operational levels.

By the time the third German offensive (the Battle of the Lys, or 'Georgette') was launched, the BEF had absorbed even more lessons. The partial German success was largely due to the disintegration of the Portuguese forces; some British divisions stood their ground as well as the Third Army's had. [56] Here, too, the BEF had adequate forces, because Flanders was the shortest way to the British supply bases and the Channel ports. Again surprise was a key factor, precisely because the Second Army had enough artillery (and the Third Army had demonstrated how to use it) to disrupt an offensive before it could fairly get underway. Despite the British strength, once the Germans had created their hole the British line had to retire to avoid being outflanked, and the lessons of mobile operations were the same as those learned further south: heavy guns could not function if they had to move far; mobile field artillery reserves were vital; and German attacks could (sometimes) be stopped by direct fire. (Part of an official report on operations is available as Appendix 34.) [57] Birch appeared at the Second Army's headquarters on another of his missions, this time to ensure that someone was organizing artillery on the flanks of the attack to cover any necessary withdrawals. [58] Similarly, there was now freedom to consider when it was justified to risk guns in order to inflict maximum casualties on the Germans (previously every nerve was strained to save the guns). [59] Another factor to be balanced was counter-battery fire against killing German infantrymen. While valuable when no attack was expected, counter-battery fire disclosed battery positions to the Germans and invited neutralization during an attack. [60] These were nail-biting decisions for the General Staff, corps, and army commanders. Artillerymen made suggestions, but not the final decisions. By this time there was ample general experience and growing defensive experience in the BEF, so beyond technical details artillery officers had little to add.

'Georgette' showed nothing very new, really only reinforcing the lessons of 'Michael.' GHQ had organized an inquiry into 'Michael' even before the Germans had been brought to a complete stop. [61] Corps, divisions, brigades, and even batteries were called upon to give

their account of the battle, not filling out a form that would shape comments nor, crucially, as part of a blame game or witch-hunt. GHQ genuinely wanted to find what worked and what failed. After the Lys offensive burned out, the process of learning lessons was repeated, with all echelons of the Second Army quizzed for their experiences. (One of these can be read in Appendix 34.) There was little new to be learned from 'Georgette,' but GHQ was not slow to jot down and disseminate what there was. "Notes on Recent Fighting" leaflets appeared almost while the Germans were attacking, and while they were probably useful for the bulk of the BEF, they cannot have been regarded with much awe by troops still in action.

'Georgette' was the last major offensive the BEF had to withstand. When IX Corps was attacked on the Aisne in late May, it was part of a French army and was operating under their orders. Despite the IX Corps' heavy casualties, and the vastly different circumstances, GHQ still probed for lessons. More "Notes on Recent Fighting" stemmed from the Aisne battle, focusing on German tactics because there was little to be learnt from the French ones. For instance, German gas tactics depended on the properties and effects of their gasses rather than the layout of Allied defenses. The BEF knew enough to winnow useful lessons from the chaff.

The bulk of the BEF spent May, June, and July merely holding the line, but this was not the relatively passive trench warfare of 1915-17. Raids and patrols were more common than ever. There were two reasons: British divisions were absorbing large numbers of semi-trained men and wanted to give them some experience, and GHQ (as always) wanted to maintain the initiative. The raids were more successful than ever before because of weak German defenses and mediocre German infantry. Defenses were weak since the Germans were mostly defending where their attacks had run out of steam, not on ground chosen as good defensive terrain. [62] The German infantry holding the line was mainly the leftovers after the best soldiers had been skimmed off for the assault divisions that had been decimated in the spring offensives. Not only were the remnants weaker in numbers and weapons, they knew they were second rate. The British infantry finally achieved morale superiority across No-Man's-Land, as their prisoner 'bags' proved.

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GHQ sensed the shifting balance on the Western Front and, while cautious as long as the Germans had a large reserve, adjusted artillery policy accordingly. Over the winter the Royal Artillery had been reined in to avoid provoking the Germans. Now unbridled but intelligent aggression was the order of the day. Destructive counter-battery work, short but intense trench bombardments, and thorough harassing fire took place up and down the line. [63] Every technological aid was called upon: sound ranging was effective against hastily emplaced German batteries; the RAF dominated the skies watching for any movement; and calibration allowed sudden concentrations of fire. Counter-battery fire was especially important, and relentlessly chewed up the German artillery. Leaving aside the guns captured, German artillery losses from British counter-battery fire alone ran at about ten percent per month in this period, a completely unsustainable rate. [64] The constant aggressive fire was co-ordinated by experienced staffs that had done it all before—and done it under less favorable circumstances. Now they had the opportunity to demonstrate their skills and techniques, and they had too much power at their fingertips for the Germans to withstand. The Germans withdrew from several salients and exposed sectors because the British artillery made them too expensive to hold. Forcing withdrawals without attacks was a major achievement, and it shows the level of superiority the Royal Artillery had achieved.

Once the Allies shifted onto the offensive there was virtually no more defensive fighting for the BEF. Naturally, trench warfare persisted in some sectors, at least until the offensive spread to that sector. The First and Second Armies were harassing and raiding the Germans, while the Fourth Army was rounding up prisoners in myriads during the Battle of Amiens. However, the defensive-offensive measures in barrages disappeared. They did not

dwindle, but disappeared as soon as it became clear that major German counter-attacks were a thing of the past. The counter-attacks that took place were modest tactical affairs and could be handled by the close support artillery or by direct communication with supporting batteries. Here the decline of German artillery was a key element, because less German shelling meant less risk of telephone cable being cut. 65

Conclusion

At the end of the war, the artillery had changed their defensive role with the concurrence of the rest of the army, but only after having spent years not achieving their potential. Before the war there was no particular defensive doctrine for the artillery; indeed, the whole army lacked one. Defense was a condition that might occur, but nobody worried very much about it. The principle of economizing men for action elsewhere was clear, but the British army had a great many clear principles, some of which overlapped. What it lacked was guidance on how to implement the principles, and that came only through experience.

Thus when trench warfare developed it first took the shape of mobile warfare, simply entrenched. Artillery was assigned to infantry in mobile warfare and trench warfare alike. The artillery's role was unchanged (supporting the infantry unit they were assigned to) but no longer entirely appropriate. While there were extenuating circumstances with the communications problems, and very gradual improvement in defensive methods, artillery was not well integrated into the defensive effort. Despite these problems, as soon as the BEF put its mind to defensive policy it developed a successful one. "Artillery in Defensive Operations" saw a more flexible and better-integrated role for defensive artillery, paradoxically by freeing it from simply supporting the infantry in front. Yet freedom from the control of the front-line battalions did not mean that the artillery did their own thing on the battlefield. Artillery firepower formed the framework for the defense whether in counter-preparation or defensive barrages, and the results (as at the Scarpe) proved the value of the concept. This was an outstandingly successful integration of the artillery into an overall battle plan, recognizing—as the previous total and willing subordination had not—artillery's unique abilities. Nor were the few remaining months of trench warfare wasted: the BEF established a dominance that paved the way for and continued into its attacks.

If defensive artillery power used the techniques of the offensive bombardment and barrage, defense against counter-attacks became indistinguishable from a normal attack. It fluctuated with views of the infantry's abilities: the weaker the infantry were rated, the denser the protective barrage had to be. Eventually the quality of the German infantry declined to the point that the few guns detached for direct support of the infantry were usually enough to fend off tactical counterattacks. But the larger problem was never solved. There was no way to bring concentrated firepower onto counter-attacking troops, mainly because communications usually broke down. The answer was a decade of progress on radio, a luxury of time that nobody in the First World War had.

Notes:

Note 1: *FSR,* §107-110. Back.

Note 2: *FSR,* §158-63. Back.

Note 3: *OH 1914,* vol. 2, 249. Back.

Note 4: *OH 1914,* vol. 2, 227, 263. Back.

Note 5: F. G. Stone, "Co-operation between Artillery and Infantry," JRA 42:9 (1916),

especially 462-3. Stone had been recalled from retirement to be CRA of the 18th Division, with which he had gone to France but only for a few weeks in the line before he was relieved by a younger officer. Stone was made CRA of another division at home, which he trained before it too was sent to France with a younger CRA. The latter was a common practice. Back.

Note 6: J. Macartney-Filgate, *The History of the 33rd Divisional Artillery in the War 1914-1918* (London: Vachers, 1921), 15. Back.

Note 7: J. G. Geddes Diary (RAI Military Document 1135), 27 December 1914. Back.

Note 8: "Notes on Artillery," WO33/756, June 1916. Back.

Note 9: Farndale, *Western Front,* 73. Back.

Note 10: See "Instructions for Artillery Defence of 7th and 8th Division Front," 30 April 1915, WO95/87. Back.

Note 11: Farndale, *Western Front,* 92-103, has considerable detail about various actions. Back.

Note 12: Haig jotted in his diary two tasks for artillery: destroying obstacles and protecting British infantry against counter-attack. This indicates a simple faith in the superior qualities of British infantry and suggests why an infantry-supporting barrage was not developed sooner. Haig Diary, 6 January 1915. Back.

Note 13: I Corps Operations Order No. 106 (20 September 1915), WO95/619. Back.

Note 14: Farndale (*Western Front,* 126) gives the situation for the 9th (Scottish) Division. Back.

Note 15: Bruce I. Gudmundsson, *On Artillery* (London: Praeger, 1993), 44-50. Back.

Note 16: Haig Diary, 22 May 1916. The question of promotion and replacement of artillery officers is too complex to be dealt with here, but seems to have been inconsistent. Back.

Note 17: Compare with unit commanders' removal in Tim Travers, *The Killing Ground: The British Army, the Western Front & the Emergence of Modern Warfare, 1900-1918* (London: Routledge, 1987), chapter 1. Back.

Note 18: Herbert Plumer's position in early 1916 was shaky, but he survived in command of the Second Army. Back.

Note 19: Methodology for this admittedly brief survey was simple: comparing a division's battle honors with the nominal roll of commanders in Becke's Orders of Battle series to check for changes in immediate response to battles. Back.

Note 20: What material that survives, notably "Notes on Artillery" (June 1916, WO33/756), supports this. It discusses sectors, night lines, and allotted batteries as the rule, then moves on to ways of harassing the Germans. Back.

Note 21: It is important to note this was not universal, and CDS50 ("Tactical Notes," 31 July 1915) suggested allowing the Germans to assemble, then inflicting heavier casualties rather than dispersing counter-attacks before they formed. Appendix 9 Back.

Note 22: OA337, 14 January 1917, WO95/519 (Fifth Army General Staff war diary). Back.

Note 23: *OH 1917,* vol. 1, 370-7. Back.

Note 24: SS139/4, February 1917. Appendix 20 Back.

Note 25: Maxse Papers, IWM, file 53, conference 5 July 1917. This was close to the German idea of pressing an attack as far it could go; those who criticize the BEF for not following this route should contemplate the results of this one instance when it did. Back.

Note 26: See G. C. Wynne, *If Germany Attacks: The Battle in Depth in the West* (London: Faber & Faber, 1940) for an account of German defensive tactics. Back.

Note 27: The corps commander was, after a short interval, replaced. Back.

Note 28: WO158/316. Back.

Note 29: "Report on the Advance of the Artillery of the Fifth Army from February 24th to March 30th 1917," Uniacke Papers VII/1. Back.

Note 30: III Corps BGRA Diary (WO95/692), 26 January 1918. Back.

Note 31: ANZAC Corps BGRA Diary (WO95/994), 3 February 1918. Back.

Note 32: Fifth Army Artillery Instruction No. 83, 27 December 1917, Uniacke Papers VII/3. Back.

Note 33: SS139/7, February 1918. Back.

Note 34: Counter-preparation might differ little from SOS, and was sometimes fired whenever the 'wind was up,' to use the period phrase for a pointless alarm. III Corps BGRA Diary (WO95/692), 30 November and 11 December 1917. Back.

Note 35: OA337, 14 January 1917. Back.

Note 36: Second Army, 18 January 1917, WO95/276; Montgomery-Massingberd Papers, LHC, file 7/17, "4th Army Policy on the Army Front for 1918," 20 January 1918 for the Ypres Salient. Back.

Note 37: The Second Army claimed it was issued 21 March 1918, the day of the German offensive. Some units may have waited for copies, but the ideas had been implemented earlier. (WO95/277) Birch toured Ypres on 9 February 1918 and discussed the artillery defense of salients, obviously drawing local conclusions, while SS139/7 awaited Haig's signature. RA/G/5, memo to CGS, 10 February 1918, Rawlins Papers, file 12b. Back.

Note 38: Fifth Army letter OA196 passing on the letter from CGS to Armies of 20 July 1918, WO95/902. See also Bailey, *Field Artillery,* 145-8. Back.

Note 39: III Corps BGRA Diary (WO95/693), 14 February 1918, VII Corps BGRA Diary (WO95/812), 12 March 1918. Why the Germans achieved surprise is beyond the scope of this research. There were strong indications the that Germans intended attacking near St. Quentin, but they also engaged in buildups opposite more important sectors. Back.

Note 40: WO158/343; W. H. F. Weber, "With the Field Artillery from Trench to Open Warfare on the Western Front," JRA 45:11-12 (1919): 358, which is also an extremely interesting account. Back.

Note 41: Farndale, *Western Front,* 262-279, has many accounts of the fighting, while Martin Middlebrook, *The Kaiser's Battle: 21 March 1918, the first day of the German Spring Offensive* (London: Penguin, 1983), concentrates on the preparations and the first day. Back.

Note 42: VII Corps, facing the full brunt of the German attack, signaled the heavy guns at

0455 to fire on German trenches, but for most batteries it was already too late. VII Corps BGRA Diary (WO95/812), 21 March 1918. Back.

Note 43: Single guns were forward for a variety of reasons: to snipe at German movements, or pretend a battery position was occupied, but mainly as anti-tank guns. Having introduced tanks to the world, the BEF was well aware how they aided attacks. Back.

Note 44: Horse artillery batteries also proved the worth of their mobile training. Back.

Note 45: XIX Corps of Fifth Army; *OH 1918,* vol. 2, 95. Back.

Note 46: Haig Diary, March-April 1918. Back.

Note 47: See, for example, the Third Army's lessons, WO95/370, 7 May 1918. The Fifth Army also reacted while the retreat was still underway, making such points as that the short German bombardments meant the Royal Artillery could use more intense counter-preparation themselves. III Corps BGRA Diary (WO95/693), 6 and 8 April 1918. Back.

Note 48: "Heavy Artillery XVth Corps Report on Operations 9th to 17th April 1918" (n.d.), WO95/927. Back.

Note 49: This is not limited just to those derogatory of the BEF; John Terraine's *To Win A War: 1918, The Year of Victory* (New York: Doubleday, 1981) does not mention the 'Mars' battle, and even the *OH 1918,* vol. 2 gives it only seventeen pages. Back.

Note 50: Haig Diary, 27 March 1918. This mission appears neither in Third Army operations reports nor in GHQ-Third Army correspondence. It is, however, powerful evidence that the German attack was anticipated. Back.

Note 51: The front here had not moved for almost a year, allowing the perfection of the fixed defenses. The terrain also favored the British, and German tactics were poor. Back.

Note 52: *OH 1918,* vol. 2, 73. Back.

Note 53: Quoted in Farndale, *Western Front,* 275. Back.

Note 54: German preparations were also not as thorough as before 'Michael.' Back.

Note 55: XV Corps BGRA Diary (WO95/925), 31 March 1918. Back.

Note 56: Among these was the 55th (West Lancashire) Division, which had already experienced the new German tactics at Cambrai, which may have affected their defensive plan. Back.

Note 57: The whole "Report on Operations Undertaken by IXth Corps between 9th and 21st April 1918," dated 20 May 1918, is in WO95/841. Back.

Note 58: Haig Diary, 13 April 1918. Back.

Note 59: Reserve Army Artillery Circular No. 1 (7 April 1918) WO95/521; Haig Diary, 18 April 1918; XIII Corps BGRA Diary (WO95/902), 28 April 1918. Back.

Note 60: J. H. H. Jones to Edmonds, 23 February 1928, CAB45/186. Jones was CBSO of XVII Corps in 1918. Back.

Note 61: XIX Corps were asked on 6 April 1918, well before the line had consolidated. Sandys Diary, 6 April 1918. Sandys was BGRA of XIX Corps. Back.

Note 62: This was a problem the Allies had for much of the war, and something the Germans had spent much of 1916-17 trying to avoid. See Wynne, *Battle in Depth,* on the Germans yielding tactically useless ground. Even during 'Georgette,' GHQ had to prompt the Third Army to take this advantage; WO95/369, 17 April 1918. Back.

Note 63: Occasionally armies suggested more orchestrated destruction for artillery in trench warfare, as the Third Army did in July 1917, strongly deprecating retaliation in favor of organized destruction. III Corps BGRA Diary (WO95/692), 17 July 1917. The Third Army had to remind its corps: WO95/365, 10 August 1917. Back.

Note 64: In September, XV Corps examined the German gun positions on ground recently re-captured and found seventy percent of their shoots had been at least "quite effective." WO95/925, c. 28 September 1918. Back.

Note 65: E.g. the Fourth Army's experience on 19 September 1918, WO95/439. Back.

"The Infantry cannot do with a gun less": The Place of the Artillery
in the British Expeditionary Force, 1914-1918