

*“The Sacrifice of Horses:”  
The BEF Animal Health Crisis, Spring 1917*

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On 21 April 1917, the Deputy Director of Veterinary Services (DDVS) for the British First Army, Colonel E.E. Martin, travelled to No. 1 Canadian Mobile Veterinary Section (MVS), then stationed a few miles west of Vimy Ridge. This unit, consisting of a single Veterinary Officer and 27 Other Ranks, received casualties evacuated from all four divisions and attached units of the Canadian Corps – some 31,500 animals in total. That day, Martin No. 1 Canadian MVS overwhelmed. Heavy work and intense combat in the early stages of the Battle of Vimy Ridge, a subsidiary action of the broader Battle of Arras, resulted in 575 sick and wounded animals evacuated in thirteen days. Over one hundred of them lay dead – collapsed from sickness, exhaustion, or shot (“destroyed”) by veterinary personnel.<sup>1</sup> Martin’s war diary, characteristically laconic, simply recorded that “carcasses have very much accumulated” around the MVS. He detached extra sections of Royal Field Artillery gunners to help bury the mounting

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<sup>1</sup> War Diary (WD), No. 1 Canadian Mobile Veterinary Section, 9-21 April 1917. Libraries and Archives Canada (LAC) RG 9 III-D-3 Vol. 5043 Reel T-10935.

volume of horses that died since the offensive opened on 9 April – a task that took two days to complete.<sup>2</sup>

The travails of No. 1 Canadian MVS exemplify the animal health crisis confronting the British Expeditionary Force (BEF) in the Battle of Arras. Throughout March and April 1917, the preparatory and assault phases of the offensive, 50,869 animals were killed, wounded, or incapacitated. Of these animals, only 6,602 (13%) were killed or wounded by enemy fire. The remaining 87%, 44,267 horses and mules, died, were destroyed, or evacuated due to sickness and exhaustion.<sup>3</sup> These animals provided essential mobility to units in forward areas by hauling artillery pieces, packing supplies and ammunition, and pulling ambulances. They formed an indispensable component of the British Expeditionary Force's (BEF) logistical network, with 373,266 serving in field units in March 1917.<sup>4</sup> The severe animal losses sustained in the Battle of Arras, and the enormous difficulty in replacing them, thus engendered the greatest crisis to the BEF's animal-based transportation network in the Great War.

British Commonwealth historians have written extensively about the operational, tactical, and technological lessons developed throughout BEF formations before the Battle of Arras. Such historians contend that developments in tactics, technology, and operational doctrine through 1915 and 1916 improved the combat effectiveness of British Imperial formations for the decisive battles of 1918.<sup>5</sup> The Battle, which lasted from 9 April to 17 May 1917, showcased some of the newest revisions in

<sup>2</sup> WD, DDVS First Army, 21 April 1917. National Archives, War Office (NA WO) 95/201. Also see WD, Assistant Director of Veterinary Services (ADVS) 1<sup>st</sup> Canadian Division, 18-22 April 1917. LAC RG 9 III-D-3, Vol. 5042, Reel T-10933-10934.

<sup>3</sup> "Return of Casualties in Field Units B.E.F. 1917." LAC RG 9 III-B-1 Vol. 3371 Folder C-185-45. Also see *History of the Organization and Development of the Army Veterinary Service with the British Expeditionary Force, France, August 1914 to April 1919*, (Simla: Government Press, 1919), 18. NA WO 106-388A.

<sup>4</sup> "Return of Casualties in Field Units B.E.F. 1917."

<sup>5</sup> This is a recurring theme explored in numerous works on the British Empire's forces throughout the First World War. See the essays collected in *Vimy Ridge: A Canadian Reassessment*, edited by Geoffrey Hayes, Andrew Iarocci and Mike Bechthold, (Waterloo: Laurier Centre for Military Strategic and Disarmament Studies and Wilfrid Laurier University Press, 2007), G.D. Sheffield, "How Even was the Learning Curve? Reflections on the British and Dominion Armies on the Western Front, 1916-1918," Patrick Brennan and Thomas Leppard, "How the Lessons Were Learned: Senior Commanders and the Moulding of the Canadian Corps after the Somme," in Yves Tremblay, ed., *Canadian Military History Since the 17<sup>th</sup> Century: Proceedings of the Canadian Military History Conference, Ottawa, 5-9 May 2000*, (Ottawa: Department of National Defence, 2001), William Philpott, *War of Attrition: Fighting the First World War*, (New York: The Overlook Press, 2015), Chapter Eleven, Tim Travers, *How the War Was Won: Command and Technology in the British Army, 1917-1918*, (London: Routledge, 1992), and Paddy Griffith, *Battle Tactics of the Western Front: The British Army's Art of Attack 1916-18*, (New Haven & London: Yale University Press, 1994), and Jonathan Nicholls, *Cheerful Sacrifice: The Battle of Arras 1917*, Kindle Edition, (Barnsley: Pen & Sword Military, 2005), Location 2433.

staff planning, artillery preparation, and infantry tactics. The dramatic advances by the British First and Third Armies on the first day of the offensive – termed by the British Official History as “one of the great days of the War...the most formidable and at the same time most successful British offensive hitherto launched” – exhibited the fruitful application of the lessons learned by combatant branches over the preceding years of war on the Western Front.<sup>6</sup> Indeed, according to historian Gary Sheffield, Arras represented “an important stage in the operational and tactical ‘learning curve’ of the BEF.”<sup>7</sup>

In a marked contrast to these comparative successes, March-April 1917 witnessed the nadir of veterinary and animal care among British Imperial formations on the Western Front. A confluence of critical factors – reduced forage, infectious disease, heavy work, poor animal management, and inclement weather – inflicted terrific losses and threatened to paralyze the BEF’s animal transport network. These factors, in one way or another, could ultimately have been mitigated through better care of horses by veterinary, logistical, mounted, and artillery personnel throughout the BEF. In this respect, the Battle of Arras highlighted the severe deficiencies, and imparted critical lessons, on effective field animal management for the duration of the conflict.<sup>8</sup>

The preliminary and preparatory phases of the Battle of Arras fell under the shadow of the horrific Battle of the Somme, which lasted from July to November 1916.<sup>9</sup> The Somme witnessed the first significant combat losses among the BEF’s animal strength on the Western Front, with 10,389 animals killed or wounded in the latter half of 1916.<sup>10</sup> Crucially for the present study, the Somme saw awful working conditions and stagnation in the care of the BEF’s transport animals, particularly among the New Army formations brought to the Western Front in 1915-16. The thick clay mud of Picardy, and the constant pace of hard work hauling shells forward to feed the pace of the five-

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<sup>6</sup> Captain Cyril Falls, *Military Operations France and Belgium, 1917: The German Retreat to the Hindenburg Line and the Battles of Arras*, (London: Macmillan and Co., Limited, 1940), p. 201.

<sup>7</sup> Gary Sheffield, “Vimy Ridge and the Battle of Arras: A British Perspective,” in *Vimy Ridge: A Canadian Reassessment*, p. 16.

<sup>8</sup> Many of the themes and figures explored through this paper arose from the author’s PhD Dissertation, “‘Maintaining the Mobility of the Corps:’ Horses, Mules, and the Canadian Army Veterinary Corps in the Great War,” (University of Calgary, 2016), Chapter Seven.

<sup>9</sup> See Robin Prior and Trevor Wilson, *The Somme*, (New Haven: Yale University Press, 2005) and Martin Gilbert, *The Battle of the Somme: The Heroism and Horror of War*, (Toronto: McClelland & Stewart Ltd., 2006).

<sup>10</sup> *History of the Organization and Development of the Army Veterinary Service with the British Expeditionary Force, France. August 1914 to April 1919*, p. 17.

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month offensive – in which BEF artillery fired 10,833,398 rounds of all calibres<sup>11</sup> – caused rising incidences of “debility.” This condition, a combination of malnutrition, exhaustion, exposure, and illness, necessitated lengthy rest for animals in hospitals and convalescent depots. In advanced cases, debilitated animals were destroyed by veterinary personnel. “Debility” could be mitigated through proper grooming to ensure the animals were not over encumbered with the weight of cloying mud, of regular (and sufficient) watering and feeding, of regular rest, and ensuring responsible a responsible load weight for transport animals.

However, these essential preconditions remained fundamentally inconsistent throughout the BEF. For example, although largely comprised of Regular Army units, the 29<sup>th</sup> Division demonstrated severe deficiencies in animal management during its sustained operations on the Somme from July to September 1916. Divisional Ammunition Column drivers failed to rotate animals for working tasks and retained exhausted cases in the line, causing some to be repeatedly subjected to heavy labour. Their officers, furthermore, inadequately supervised regular watering and feeding. Consequently, according to BEF Director of Veterinary Services Brigadier-General John Moore, 153 animals (out of an ideal strength of approximately 600) were “so run down that it was necessary to evacuate them.”<sup>12</sup>

Debility, more than combat casualties, would prove the greatest cause of animal losses on the Somme. As of December 1916, 16,074 animals remained under treatment in Veterinary Hospitals for debility alone – as against 38,000 total hospital cases. Moore lay blame with Royal Field Artillery teams for their ignorance of proper animal management techniques. The BEF Director of Remounts agreed, ascribing such heavy wastage to “a question of discipline.”<sup>13</sup> At the same time, RFA officers lamented the few opportunities for animals to receive adequate rest before being sent on protracted route marches that only exacerbated their exhausted condition.<sup>14</sup>

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<sup>11</sup> Colonel G.W.L. Nicholson, *The Gunners of Canada: The History of the Royal Regiment of Canadian Artillery, Volume I: 1534-1919*, (Toronto: McClelland and Stewart Limited, 1967), pp. 272-273.

<sup>12</sup> WD, Director of Veterinary Services (DVS), 24 September 1916. NA WO 95/68.

<sup>13</sup> *History of the Organization and Development of the Army Veterinary Service with the British Expeditionary Force*, p. 17. Also see WD, DVS, 24 December 1916, and WD, Director of Remounts, 8-11 January 1917. NA WO 95/70.

<sup>14</sup> WD, DVS, 27 November 1916.

The influx of these debilitated cases overwhelmed the BEF hospital network and severely disrupted its remount replenishment system. Reduced shipment of new animals from the United Kingdom during the winter stalled infusion of fresh horses into the BEF, while cases returning from hospitals – a key source of remounts – similarly slowed to a trickle. In early January 1917, for example, 10,405 animals remained in remount depots for distribution at the front. Throughout the month, however, the Remount Department issued a total of 11,126 horses and mules to front-line units.<sup>15</sup> The Remount Department was thus barely able to keep up with the demand of furnishing remounts throughout the BEF. Even those animals it did manage to issue often arrived at the front too weak and thin for active service, in many cases requiring immediate evacuation back to veterinary hospitals. Indeed, as the Assistant Director of Veterinary Services (ADVS) of the 18<sup>th</sup> (Eastern) Division remarked on 2 January 1917, “the condition of remounts received recently is much below the usual standard.” Consequently, he wrote, “I am afraid there is bound to be a large number of debility cases in the future if much work has to be done.”<sup>16</sup>

Key to the onset of debility, and a major recurring problem in the winter of 1917, was insufficient feed. Throughout the autumn of 1916 and into the winter of 1917, the British War Office experienced considerable difficulty providing sufficient fodder for all its animals in France – a symptom of its global logistical commitments. By February 1917, the War Office had to provide 152,000 tons of oats and grain per month to its 809,000 animals ranging from the United Kingdom to France, Salonika, Egypt, and Mesopotamia. Sir Henry Babington Smith, a British Treasury official, asserted that the weight of grain required to feed horses in the UK and France alone (106,000 tons a month) could feed a country of 14 million people. Oats for animals in France arrived direct from the Americas, while hay was purchased in the UK before being sent to the Continent.<sup>17</sup>

The ability to build up adequate reserves of these critical supplies proved increasingly tenuous. In November 1916, for example, four transatlantic transport ships bringing 21,000 tons of oats – one quarter of the entire monthly requirement for the BEF – could not be located due to the recent closure of some French ports to merchant marine shipping. Accordingly, the BEF Director of Supplies, Brigadier-General E.E.

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<sup>15</sup> WD, Director of Remounts, 1 and 31 January 1917.

<sup>16</sup> WD, ADVS 18<sup>th</sup> Division, 2 January 1917. NA WO 95/2023/3.

<sup>17</sup> Sir. H. Babington Smith, “War Cabinet – Consumption of Grain by Horses,” 27 February 1917. NA CAB 24/6.

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Carter, recommended reducing oat rations by three pounds per animal.<sup>18</sup> Although these ships shortly thereafter reached French ports, their brief disappearance illustrates the thin margins of securing sufficient fodder to keep the BEF's animals fully fed throughout the winter of 1916-17. Further difficulties were experienced by a shortage of rail trucks to move supplies of all kinds from ports to railheads on the Western Front. Indeed, Carter noted that, "we were living a hand to mouth existence in the way of obtaining the necessary truckage for the daily supply trains to the Front."<sup>19</sup>

The logistical and agricultural difficulties inherent in feeding such a large number of animals were compounded by escalating German U-Boat attacks in the winter of 1917.<sup>20</sup> On 2 February 1917, Carter again complained about oat ships failing to arrive on schedule, impressing upon the War Office "the seriousness of the situation," and "urging that Oat ships be sent out here at once." However, five days later, a U-Boat sank the SS *Floridian* with its cargo of 3,000 tons of oats and flour.<sup>21</sup> Consequently, although military rations called for 13 lbs of forage per diem for these animals, they only consumed, on average, between 7.5 to 9 lbs in the winter of 1917 – only up to three-quarters the recommended total for animals undertaking heavy labour.<sup>22</sup>

Concomitant with difficulties securing forage, and owing directly to deficiencies in proper grooming and broader animal management, was a rising tide of animal sickness. The thick mud that covered animals on the Somme, owed to irregular grooming, proved an ideal growth environment for parasitic mange. This microscopic disease spread easily among draught animals held in close quarters and was difficult to detect until the animal was already thoroughly infested with thousands of mites. It caused such intense itching and loss of skin that the animal was unable to sleep, eat, or work. In advanced stages, where the animals' scaly raw skin resembled a rhinoceros hide, it necessitated destruction.<sup>23</sup>

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<sup>18</sup> WD, Director of Supplies, 18-19 November 1916. NA WO 95/76.

<sup>19</sup> "Minutes of a Conference Held in the Director of Supplies Office, G.H.Q., on the 26<sup>th</sup> Decr. 1916," 1. NA WO 95/76.

<sup>20</sup> See Holger H. Herwig, *The First World War: Germany and Austria-Hungary, 1914-1918*, (London: Arnold, 1997), pp. 312-325

<sup>21</sup> WD, Director of Supplies, 2-6 February 1917. NA WO 95/77.

<sup>22</sup> Babington Smith, "War Cabinet – Consumption of Grain by Horses."

<sup>23</sup> Canada. Department of Agriculture. Heath of Animals Branch. Bulletin No. 12. *Mange in Horses and Cattle*. (Ottawa: Authority of the Minister of Agriculture, 1911), p. 3.

Mange spread like wildfire throughout the BEF in the winter of 1916-17. Thousands of dirty animals picketed in the open, huddling close together for warmth, provided an ideal environment for the infection to spread. It rose from afflicting 1.2% of BEF animals in November 1916 to 3.8% in March 1917 – some 16,624 animals. This infestation, immediately before the Battle of Arras commenced, was the highest incidence of mange in the Great War.<sup>24</sup>

The disease itself was not inherently fatal, however, and British Imperial veterinary personnel experimented with a range of treatment methods throughout the war. In 1915, Canadian veterinary officers with experience treating the disease among cattle in Alberta and Saskatchewan introduced the most efficacious treatment employed in the BEF – the calcium sulphide method. The practice entailed clipping an animal's coat to expose its hide and denude the parasites of cover. Veterinary personnel then led the animal to a "dipping tank," a long narrow trench dug into the earth filled with heated calcium sulphide solution. The animal was briefly submerged and forced to swim the length of the tank. Two or three of these "dippings" a week apart were usually sufficient to cure the animal completely. These tanks originally appeared in veterinary hospitals far behind the front lines, though by the winter of 1916-17 they increasingly appeared as permanent fixtures of forward operational areas. The calcium sulphide method was ultimately a more curative than preventative approach, but it provided the most effective means of combatting mange on the Western Front.<sup>25</sup>

The critical problem with the treatment's success, however, was the immense risk of utilizing it in deep winter. With animals' heavy coats taking months to re-grow, and the ideal period for clipping being October-November, extensive clipping in the depths of winter would leave horses and mules terribly exposed to the cold. British and Canadian veterinary officers at the divisional level appreciated these immense risks and voiced repeated objections to its widespread adoption in January-February. Nevertheless, suffering "anxiety" with the rising flood of mangy animals streaming to the overfilled veterinary hospitals, and convinced in the efficacy of forward treatment, Moore ordered all but the sickest animals to remain with their units for clipping and treatment. Upon finding 39 animals in "B" Battery 246<sup>th</sup> Brigade Royal Field Artillery,

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<sup>24</sup> "Veterinary Service B.E.F. Mange Chart (Horses and Mules Combined)," LAC RG 9 III-C-1 Vol. 4579 Folder 2 File 1, and *History of the Organization and Development of the Army Veterinary Service with the British Expeditionary Force, France*, p. 14.

<sup>25</sup> "Report on treatment of Mange by a Solution of Calcium Sulphide," 6 January 1916. NA WO 95/67.

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for example, the DDVS Third Army “considered it necessary to evacuate them all.” However, upon strict orders from Moore, the DDVS was instructed “to evacuate only those showing lesions [and] to retain itchy animals at the front for isolation [and calcium sulphide] dressing.”<sup>26</sup>

This approach indeed resulted in reduced incidences of mange among combat and logistics units, and eased some of the pressure on veterinary hospitals, but it left treated animals terribly exposed to winter weather. The ADVS 18<sup>th</sup> Division observed on 28 January that the “hot bath treatment for mange certainly does not render horses fit [and] able to withstand exposure to severe cold weather [and] cutting wind even when rugged up.” Indeed, he added, “they seem to fall away to nothing in a very short time.”<sup>27</sup> Exacerbating the animals’ exposure was the especially miserable winter of 1916-17. Northern France was beset with icy winds, snow, and sleet from December to April. This heavy, wet, frigid precipitation chilled animals to the bone, and exposure began to cause mounting losses. On 3 April, the ADVS 1<sup>st</sup> Canadian Division remarked “the rain [and] snow storm of yesterday afternoon [and] night showed the effects among the horses. A large number died [and] a large number had to be destroyed from cold [and] exhaustion.”<sup>28</sup>

As on the Somme, this latter condition became increasingly worrisome. The BEF’s horses were subjected to heavy, uninterrupted work hauling artillery and ammunition supporting offensive operations at Arras. For the Third Army, making the main thrust, 1,720 guns of all sizes – one gun per twelve yards of front – were allocated to support the attack. In the First Army’s assault on Vimy Ridge, 1,097 guns of all sizes attached to I Corps and Canadian Corps were allocated 2,465 tons of ammunition per day.<sup>29</sup> It thus fell to the BEF’s four-legged transport, in conjunction with light rail and motorized transport, to bring the guns forward and feed their barrages with regular supplies of ammunition.

This heavy work quickly wore down the emaciated, exposed animals. Gunner Robert Gordon Brown, serving in the Canadian Corps with the First Army, wrote in his diary on 2 April:

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<sup>26</sup> WD, DDVS Third Army, 13 January 1917. NA WO 95/384/2.

<sup>27</sup> WD, ADVS 18<sup>th</sup> Division, 28 January 1917.

<sup>28</sup> WD, ADVS 1<sup>st</sup> Canadian Division, 3 April 1917.

<sup>29</sup> Falls, *The German Retreat to the Hindenburg Line and the Battles of Arras*, 306-307.

Rain and snow in afternoon and evening...Fortunately it stopped snowing after awhile but cold wind made it chilly. Roads to and from the gun pits are packed with wagons and lorries every night. Long waits at different crossroads. Roads are good but heavy traffic and wet weather is hard on them. It is a long hard pull for horses or mules, especially in some places where mud is deep. We often see dead horses along roadside. They fall dead from exhaustion and are left where they fall, as the work of bringing up ammunition and supplies must not be delayed.<sup>30</sup>

Similar conditions pervaded the Third Army. Its DDVS, upon visiting No. 21 MVS in the 9<sup>th</sup> (Scottish) Division, observed many of the horses were little more than “walking skeletons.” He approved 72 evacuations for Debility and seven cases of mange for evacuation, while he “recommended the very bad ones for destruction.” That same day, he noted that 103 horses from the 4<sup>th</sup> Division were evacuated for debility.<sup>31</sup>

Conditions in the Fifth Army district, the southernmost sector of the offensive, were particularly difficult. The successful withdrawal of German forces to the Hindenburg Line earlier in the winter, codenamed Operation *Alberich*, rendered the Fifth Army’s movement extraordinarily difficult.<sup>32</sup> Lieutenant Ernst Jünger, who witnessed the withdrawal, recalled:

Every village was reduced to rubble, every tree chopped down, every road undermined, every well poisoned, every basement blown up or booby-trapped, every rail unscrewed, every telephone wire rolled up, everything burnable burned; in a word, we were turning the country that our advancing opponents would occupy into a wasteland.<sup>33</sup>

These scorched earth tactics amplified the broader scope of difficulties confronting the Fifth Army. Its DDVS observed that, over “awful” roads, “horses go to their advanced lines for 7 days [and] come back half dead, being worked from 4 am to 10 pm, hauling material [and] supplies for Siege Batteries.” On 14 March, he recorded “26 [animals] destroyed [and] evacuated. Marked loss of condition all round.” He continued that the “so many foolish inconsiderate orders making extra work for the horses” contributed to the sharp decline in their condition. With horses in the Fifth Army “dying from

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<sup>30</sup> Robert Gordon Brown Diary Entry, 2 April 1917. The Canadian Letters and Images Project, from <http://www.canadianletters.ca/content/document-3275>, (Accessed 27 October 2016).

<sup>31</sup> WD, DDVS Third Army, 4 April 1917.

<sup>32</sup> See Falls, *The German Retreat to the Hindenburg Line and the Battles of Arras*, Chapters IV-VI.

<sup>33</sup> Ernst Jünger, *Storm of Steel*, trans. Michael Hoffman, (London: Penguin Books, 2003), 128.

overwork," he further reported on 29 March that the 62<sup>nd</sup> Divisional Artillery was "immobile" from a dearth of effective animal transport.<sup>34</sup>

Such examples of poor field animal management by artillery and logistics personnel compounded the already appalling working conditions confronting these underfed, exhausted, exposed animals. The DDVS Fifth Army further observed, for example that animals among the 311<sup>th</sup> Brigade RFA were "in poor condition," for "this Brigade suffers from bad management...no consideration for the horses, do not halt when dismounted."<sup>35</sup> The ADVS 3<sup>rd</sup> Canadian Division, Lieutenant-Colonel David Tamblyn, similarly recalled attending to a pack mule burdened with over 300 lbs of load weight when the maximum prescribed load was almost half that, at 160 lbs. He "took up the matter with Divisional Headquarters" to argue "the physical condition of the animals and the bad state of the roads made it absolutely impossible to expect a pack animal to do any work if it were overloaded."<sup>36</sup> Indeed, such overburdened animals sent out on prolonged trips without rest or adequate feed stood little chance of surviving.

Together, these factors engendered the greatest animal health crisis in the BEF. The confluence of bare subsistence rations, muddy roads, heavy labour, clipped coats, awful weather, instances of poor management, and inability to adequately replace losses with remounts, sparked an incipient disaster on draught animals of the BEF. From February to April 1917, 35,063 animals were admitted to veterinary hospitals for debility alone.<sup>37</sup> In March and April 1917, 50,869 animals were killed, destroyed, or evacuated from frontline units – 13.8% of the BEF's animals in the forward areas and lines of communication.<sup>38</sup> These enormous losses directly threatened to impede the mobility of units in the field. Indeed, as Major-General Arthur Currie, General Officer Commanding (GOC) 1<sup>st</sup> Canadian Division testily wrote on 13 April, "I know the military situation may require the sacrifice of horses, but the point I want to bring out

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<sup>34</sup> WD, DDVS Fifth Army, 14 and 29 March 1917. NA WO 95/536/2.

<sup>35</sup> WD, DDVS Fifth Army, 25 March 1917.

<sup>36</sup> War Diary, Deputy Assistant Director of Veterinary Services 3<sup>rd</sup> Canadian Division, 15 April 1917. LAC RG 9 III-D-3 Vol. 5042 Reel T-10934.

<sup>37</sup> *History of the Organization and Development of the Army Veterinary Service with the British Expeditionary Force, France. August 1914 to April 1919*, p. 19.

<sup>38</sup> "Return of Casualties in Field Units B.E.F. 1917," and *History of the Organization and Development of the Army Veterinary Service with the British Expeditionary Force, France. August 1914 to April 1919*, p. 19.

now is, that they must be replaced and at once, otherwise our ability to move forward will be very much less than it should be.”<sup>39</sup>

The First and Third Armies continued to suffer heavy animal losses after the offensive commenced on 9 April, though more due to continued heavy work and inclement weather than enemy action. The DDVS First Army observed that the “condition for horses [was] very bad” for the offensive against Vimy Ridge on 9 April.<sup>40</sup> Four days later, Moore noted the “serious position as regards horses at the front,” petitioning the Quartermaster-General to “[allow] full rations to the animals at the Front, in consideration of the extra strain put upon them, and their lack of condition owing to their having been underfed during the past three months.”<sup>41</sup> Indeed, this bane of overwork and underfeeding continued to waste animals away. On 16 April, the DDVS Fifth Army observed that the 62<sup>nd</sup> Division sustained numerous animal casualties owing to “cold weather here. No rugs. Overwork. Exposure. Some indifferent stable management.”<sup>42</sup>

Despite such heavy losses, comparatively few animals were killed or wounded in combat. This was not due to any lack of effort from the enemy, as German artillery shelled lines of communication and known transport routes to interrupt to flow of supplies. At Vimy Ridge, however, the deep mud that caused difficulty for animals pulling supplies forward inadvertently saved their lives. High explosive shells fired by German batteries typically burrowed deep into the mud before exploding, shielding animals from shrapnel and concussive blasts.<sup>43</sup> Indeed, only 860 transport animals of approximately 195,000 in the attacking armies in the Battle of Arras were fatal combat casualties.<sup>44</sup>

The suffering of these wounded animals nevertheless left an indelible impact on personnel in charge of their use. Second Lieutenant Bernard Trotter, a transport officer with the 11<sup>th</sup> Battalion, Leicestershire Regiment, witnessed the violence wrought upon

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<sup>39</sup> Major-General A.W. Currie to Canadian Corps Headquarters, 13 April 1917. LAC RG 9 III-C-1 Vol. 3888 Folder 41 File 2.

<sup>40</sup> WD, DDVS First Army, 9 April 1917.

<sup>41</sup> WD, DVS, 13 April 1917.

<sup>42</sup> WD, DDVS Fifth Army, 19 April 1917.

<sup>43</sup> WD, ADVS 1<sup>st</sup> Canadian Division, 9 April 1917.

<sup>44</sup> WD, DDVS Cavalry Corps 15 April 1917, and *History of the Organization and Development of the Army Veterinary Service with the British Expeditionary Force, France, August 1914 to April 1919*, pp. 18-19.

animals. On 14 April 1917, he visited a veterinary hospital treating casualties evacuated from the front – “a rather heart-wrenching experience.” He wrote to his family

There is something about the suffering of the dumb creatures that is more pathetic in its way than that of the human victims of war. The human has the consciousness of honorable sacrifice to brace his spirits; but the animal just suffers without understanding.<sup>45</sup>

Trotter’s sentiments exhibit the deep attachment these personnel felt to their animals, even while witnessing horrible carnage among their fellow man. Indeed, Lieutenant-Colonel Tamblyn similarly recalled “many a heart felt sore and many a tear fell when man left his [wounded mount] under dire circumstances” – a sight that made life at the front “worse and more unbearable.”<sup>46</sup> Tragically, however, Trotter’s conception of the soldier’s “consciousness of honourable sacrifice” prophesied his own fate. Less than a month later, on 7 May 1917, he was killed by a shell while hauling supplies towards the front lines.

Although logistics and artillery animals faced these regular dangers during the battle, the cavalry bore the brunt of the BEF’s animal combat losses at Arras. Committed to battle on 11 April to try to exploit advances made by the Third Army, cavalry mounts sustained enormous casualties from exposure and enemy fire during their few days in the forward areas.<sup>47</sup> Second Lieutenant Alan Thomas of the 6<sup>th</sup> Royal West Kents remembered at Monchy-le-Preux, the site of particularly bitter fighting, “heaped on top of one another and blocking up the roadway as far as one could see, lay the mutilated bodies of our men and their horses.”<sup>48</sup> In just the first two weeks of April, 1,210 horses of the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> Cavalry Divisions were killed, destroyed, or died, out of the total 2,070 battle deaths that month – exceptionally heavy losses when considering cavalry’s brief involvement in the offensive.<sup>49</sup>

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<sup>45</sup> Bernard Freeman Trotter Letter, 15 April 1917. The Canadian Letters and Images Project, from <http://www.canadianletters.ca/content/document-2635>, (Accessed 27 October 2016).

<sup>46</sup> David Tamblyn, *The Horse in War, and Famous Canadian War Horses*, (Kingston: The Jackson Press, n.d.), pp. 29 and 64. For more in-depth analysis on human-animal bonding in the First World War, see Andrew McEwen, “‘He Took Care of Me’: The Human-Animal Bond in Canada’s Great War,” in Susan Nance, ed., *The Historical Animal*, (Syracuse: Syracuse University Press, 2015).

<sup>47</sup> Falls, *The German Retreat to the Hindenburg Line and the Battles of Arras*, 181, 272-273.

<sup>48</sup> Quoted in Nicholls, *Cheerful Sacrifice*, Location 2736.

<sup>49</sup> WD, DDVS Cavalry Corps 15 April 1917, and *History of the Organization and Development of the Army Veterinary Service with the British Expeditionary Force, France, August 1914 to April 1919*, pp. 18-19.

Husbanding the Cavalry Corps for action inadvertently exposed them to the worst impact of the weather. Unlike draught horses, working constantly in the open with little shelter, the BEF's cavalry mounts spent most of the winter under warmer covered standings and were thus completely unprepared for the shock of the weather. The DDVS Fifth Army observed for example on 1 April that the Inniskilling Dragoons "have suffered a lot from cold, exposure [and] work since they were hurriedly brought up from comfortable quarters" in the rear.<sup>50</sup> Poor horse management also beset the cavalry. Colonel P.J. Harris, the DDVS Cavalry Corps, observed on 9 April that:

I noticed 3 or 4 dead lame horses and no attempt made by the rider to dismount and examine the foot, the rider continued to trot, oblivious to the pain the animal was suffering and permanent injury that may be cause by the rider's unthoughtfulness.

Indeed, reflecting the problems reflecting the broader BEF, Harris claimed that, had the cavalry been drawing full rations of 12 lbs oats, 12 lbs hay, and "any bran that is required," "there would have been fewer debilitated animals, and, as we have seen by experience, fewer casualties."<sup>51</sup>

Ultimately, for cavalry and transport horses alike, respite would only come as spring weather arrived in France and the Battle of the Arras wore down. Despite significant gains in the opening days of the offensive, including the capture of Vimy Ridge, the battle devolved into a grinding attritional slog and the BEF was unable to achieve a decisive breakthrough of enemy lines.<sup>52</sup> Consequently, the workload lightened considerably for the BEF's transport animals. By late April, the weather improved and animals picketed in the open were no longer subjected to biting winds, snow, and sleet. Roads firmed up, and hauling loads forward became less onerous. Furthermore, with the onset of spring, fresh grazing became available, and the forage ration for animals steadily approached its recommended volume. Indeed, by 14 May, the DDVS First Army observed "the wastage at the front is decreasing daily and there is a steady improvement in horses."<sup>53</sup>

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<sup>50</sup> WD, DDVS Fifth Army, 1 April 1917.

<sup>51</sup> WD, DDVS Cavalry Corps, 4-13 April 1917.

<sup>52</sup> See Colonel G.W.L Nicholson, *Canadian Expeditionary Force 1914-1919*, (Ottawa: Queen's Printer, 1962), pp. 265-266.

<sup>53</sup> WD, DDVS First Army, 14 May 1917.

By May 1917, then, the BEF's animal health crisis effectively abated. Although never completely paralyzing operations, it is evident that the enormous volume of animals killed or incapacitated – almost 14% of all animals in forward areas – engendered a desperate situation. Indeed, such heavy losses caused severe anxiety to senior commanders over their ability to maintain mobility of their field units. It bears repeating Currie's anxious telegram that, were the losses to continue at their peak rates, "our ability to move forward will be very much less than it should be."

Crucially, the crisis imparted invaluable lessons for BEF animal management personnel going forward. Like combatant branches after the Somme, they learned from these lessons and improved animal care throughout the BEF. Indeed, the Battle of Arras presents one of the most glaring, and important, turning points in animal health management on the Western Front. Veterinary and animal management personnel endeavoured to address the underlying causes of the crisis and take measures to avoid repeating such grievous animal losses in the future.

The most pressing lesson was improving basic standards of proper horse management. Senior veterinary officers from the First, Third and Fifth Armies, and the Cavalry Corps, all observed severe deficiencies among numerous units in proper animal care. Sloppy grooming, uneven feeding schedules, over encumbering animals with excessive loads, and leading animals on too many trips, directly contributed to the appalling wastage rates of March-April 1917.

To minimize such unnecessary and entirely preventable causes of animal suffering, Moore energetically developed courses of instruction on proper horse management, to be held at Veterinary Hospitals throughout the rear echelon. Beginning in June 1917, five of these hospitals held ten-day courses for classes of ten officers and fifty NCOs. Among the classes were "signs of sickness or inefficiency," "stable routine," "grooming," "saddles and harness," and "shoeing." By May 1918, some 850 officers and 4,000 NCOs successfully completed these courses, and were imparted with a keener sense of proper animal management in the field.<sup>54</sup> Tangible impact of these courses is difficult to assess definitively, for as the British Official Veterinary History concedes, they nominally provided "hurried instruction in such a wide subject as the scientific

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<sup>54</sup> *History of the Organization and Development of the Army Veterinary Service with the British Expeditionary Force, France. August 1914 to April 1919*, p. 22.

management of animals.” Nevertheless, it also claims these courses “eliminated that blank indifference which is the greatest obstacle met with by the executive veterinary officer in his efforts to secure the proper management and well-being of animals.”<sup>55</sup>

The Battle of Arras also imparted stark lessons on veterinary protocol. Although not the sole cause of severe animal wastage, it was evident to all veterinary officers in the BEF that widespread clipping for mange in January left animals horribly exposed to the elements. Moore, the ultimate authority responsible for clipping coats in deep winter, conceded in March that were “due attention paid to clipping at the proper time of the year animals would not be so liable to suffer from the effects of inclement weather.”<sup>56</sup> The Veterinary Official History attempted to minimize the impact of this clipping regimen, only conceding it “may have been a contributory factor” to the animal health crisis, though its role “should not be overstressed.”<sup>57</sup> At the same time, the volume of testimony from veterinary officers reflecting the severity of losses among clipped animals suggests that it indeed played a significant role in the heavy wastage rates.

Consequently, more concerted efforts to ensure animals were clipped and free of mange in October-November, rather than in January-February, were imposed that autumn. By undertaking concerted clipping regimens in the autumn with a rigid deadline of 30 November, BEF veterinary personnel simultaneously controlled mange more effectively, and avoided destructively shearing winter coats.<sup>58</sup> Indeed, reflecting a general improvement on the state of animal care throughout the BEF, the Veterinary Official History noted “during the summer of 1917 the effective of discipline, training, and experience...began to be felt” as more attentive grooming and inspections began inhibited further spread of mange.<sup>59</sup> Consequently the scale of mange infections, and losses through debility, did not again reach the levels of spring 1917.<sup>60</sup> In June 1918, the rate of hospitalized cases stood at 1.2% of the entire force, as against 3.5% the same date a year prior.<sup>61</sup> Ultimately, Moore attributed the steady control over the disease

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<sup>55</sup> Major-General Sir L.J. Blenkinsop and Major J.W. Rainey, eds, *History of the Great War Based on Official Documents: Veterinary Services*, (London: His Majesty’s Stationery Office, 1925), pp. 60-61.

<sup>56</sup> WD, DVS, 27 March 1917.

<sup>57</sup> Blenkinsop and Rainey, *Veterinary Services*, p. 60.

<sup>58</sup> WD, DVS, 18 June and 29 August 1917.

<sup>59</sup> Blenkinsop and Rainey, *Veterinary Services*, pp. 522-523.

<sup>60</sup> *History of the Organization and Development of the Army Veterinary Service with the British Expeditionary Force, France. August 1914 to April 1919*, p. 14.

<sup>61</sup> “Veterinary Service B.E.F. Mange Chart (Horses and Mules Combined).”

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following the 1917 crisis to “the winter coat being cast earlier,” and “better attention to, and supervision of, animals by all concerned.”<sup>62</sup>

A critical factor precipitating the crisis – insufficient forage – was more difficult to solve through education alone. Logistical difficulties pervaded through the rest of the war, and thus the proposed solution was simply to reduce the BEF’s overall animal complement to ensure more forage was available to draught animals in forward areas. The Director of Supplies, Brigadier-General Carter, derided the extra hay and bran rations issued to cavalry mounts quartered behind the lines while transport animals continued to labour at the front. On 15 May he claimed rations for the cavalry were “becoming increasingly difficult to supply” – an extra burden on supply lines given that cavalry had been out of action for a month. Indeed, he claimed, “it is obvious that the animals could certainly not be doing hard work.”<sup>63</sup> In a partial measure to relieve some of this pressure, the 4<sup>th</sup> and 5<sup>th</sup> Cavalry Divisions were broken up in early 1918. Their constituent units were reorganized into machine gun battalions, and their horses redistributed as remounts.<sup>64</sup> Combined with a general reduction in the size of infantry brigades, and reduced importation of horses from overseas, the BEF reduced its feeding strength from 458,000 to 400,000 horses and mules by April 1918.<sup>65</sup>

Crucially, these lessons imparted invaluable experience and examples – to emulate and to avoid alike – during the last, most violent year of the Great War. The German Spring Offensives of March-July 1918, and the Allied counteroffensives of July-November, reintroduced a measure of fluidity to the Western Front. In a contrast to the limited advances made in trench warfare, battles were fought over significant distances for the first time since 1914. Maintaining the mobility of units in the field remained a critical concern during these months, and BEF veterinary personnel confronted new challenges in managing, treating, and evacuating animal casualties. Combat wounds in particular skyrocketed during this intense fighting. BEF formations suffered 73,828 combat casualties from 17 March to 11 November 1918, 36,726 (49.7%) of them fatal. In contrast, combat casualties from January 1917 to March 1918 – including the battles of

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<sup>62</sup> Moore to DDVS First Army, 1 September 1918.

<sup>63</sup> WD, Director of Supply, 15 May 1917.

<sup>64</sup> WD, DVS, 7 February, 5 and 26 March 1918.

<sup>65</sup> War Cabinet Memorandum 391, 15 April 1918, 3. NA CAB 23/6.

Arras, Messines, Third Ypres, Hill 70, and Cambrai – numbered 53,660, with 17,601 (32.8%) fatal.<sup>66</sup>

Despite the intensity of the action and the heaviest combat casualties of the war, the devastating causes of wastage at Arras – malnutrition, exhaustion, disease, exposure, mismanagement – did not again threaten to paralyze BEF's animal strength in 1918. Mange remained effectively under control for the rest of the conflict – a critical factor in minimizing evacuations through disease and debility. Indeed, Moore observed on 9 November – two days before the Armistice – “the situation as regards Contagious Skin Disease in Field Units remains most satisfactory, the Force has never before had such a low percentage of ineffectives from this cause.”<sup>67</sup>

Still, the constant pace of battle, work, and difficulties securing full fodder rations drained BEF animal strength, though never to the same extent as at Arras. Debility cases steadily increased into autumn 1918, with 8,027 cases remaining under treatment by 9 November.<sup>68</sup> While causing some measure of anxiety to Moore, this volume nevertheless starkly contrasts against the 16,074 animals hospitalized after the Somme, or the 20,319 admitted for debility in April 1917 alone. It is a testament to the improved animal management skills throughout the BEF that debilitated cases were minimized throughout months of unrelenting, intense fighting. Few animals were “dying from overwork” during the campaigns of 1918 as thousands were at Arras. Indeed, on 9 November the DDVS First Army observed that animals in the 4<sup>th</sup> Canadian Division Ammunition Column, despite being almost constantly in action for weeks, “are in very satisfactory condition,” while debilitated animals in the divisional artillery “are receiving attention to grooming, feeding and stable management generally.”<sup>69</sup>

The generally improved state of these animals – though worn down by the demands of the Allied counteroffensives – speaks volumes on a higher standard of animal management in 1918 than earlier stages of the war. Indeed, Moore remarked on 30 November “the general health of the animals continues satisfactory,” while “the increase in Skin Disease which is expected at this time of year” – mange – “has not yet

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<sup>66</sup> *History of the Organization and Development of the Army Veterinary Service with the British Expeditionary Force, France, August 1914 to April 1919*, p. 18.

<sup>67</sup> WD, DVS, 9 November 1918.

<sup>68</sup> WD, DVS, 9 November 1918.

<sup>69</sup> WD, DDVS First Army, 9 November 1918.

occurred.”<sup>70</sup> The contrast to two years prior, where debilitated, filthy, mangy, and hungry animals barely had sufficient time to recover from the Somme before being sent to battle at Arras, could not have been starker.

The Battle of Arras was not the bloodiest engagement of the war for the British Expeditionary Force, but it was the most destructive upon the health of its animal-based logistic network. While battle casualties remained comparatively small, the sheer volume of animals that died of exhaustion, or were evacuated from the front lines, engendered alarming wastage rates. The underlying causes were, in many ways, preventable. Overburdening, underfeeding, and a poorly timed clipping regimen in appalling weather were fundamental factors behind debilitating animal losses. When these factors combined with atrocious weather and a heavy pace of work in March-April 1917, the BEF confronted its worst animal health crisis in the First World War.

Historians typically depict the Battle of Arras as a key case study of “lessons learned” among the combat branches of the British Expeditionary Force, particularly with regard to developments in operations and tactics. For the veterinary and animal management branches, however, the hardest lessons of the war were learned during and after the battle itself. Critically, these personnel heeded the lessons imparted by spring 1917. The fundamental causes of animal wastage at Arras did not repeat themselves in the later stages of the war. Mange outbreaks were more quickly and efficiently brought under control, and debility remained comparatively low the arduous campaigns of 1918. At Arras, veterinary and animal management personnel experienced the hardest lessons of effective field animal care on the Western Front. They digested these lessons, and learned from them, for the rest of the Great War.

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<sup>70</sup> WD, DVS, 30 November 1918.