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# Technology, “Machine Age” Warfare, and the Military Use of Dogs, 1880–1918



Gervase Phillips

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## Abstract

Many military historians have emphasised technological innovation as the defining characteristic of modern “machine age” warfare. This paradigm ignores the central roles that animals have played in twentieth-century wars and fails to recognise that the scale of their exploitation has actually escalated in modernity, largely in response to technological innovation. In short, the military employment of animals on a massive scale is as much a defining characteristic of modern warfare as is mechanisation. Here, the example of the establishment of permanent, regular military dog units, for use in “civilised” warfare, from the 1880s onwards is used to illustrate this point.

On 10 May 1895, the *Manchester Times* reported the suffering of some members of the French expeditionary force then engaged in the final stages of the conquest of Madagascar:

The war dogs that have accompanied the French troops . . . are having a bad time of it. Numbers of the poor animals when on night duty fall prey to crocodiles and the poisonous serpents, while those that escape fall victims to fever and other illnesses. It is hoped that when troops get further into the interior, where there are fewer reptiles, the dogs will get on better than at present.<sup>1</sup>

1. “Interesting Facts,” *Manchester Times*, 10 May 1895, 5.

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Gervase Phillips is Principal Lecturer in History and Head of the History Section at Manchester Metropolitan University. The author of *The Anglo-Scots Wars, 1513–1550* (1999), he has contributed articles to such journals as *Journal of Historical Sociology*, *War in History*, *Journal of Interdisciplinary History*, and *Technology and Culture*. Besides his current research on the exploitation of animals in warfare, he is working on a monograph on persecution and genocide from antiquity to the present day.

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In one sense, the presence of these unfortunate dogs with a European army, especially in this particular context, should not come as any surprise. The history of the war dog as an instrument of the conquest, and subsequent policing, of colonial territories is a very long one. The Greek historian Zonarus wrote of how the Roman commander Marcus Pomponius, during the occupation of Sardinia in 231 BCE, employed “keen-scented dogs from Italy” to track down those resisting his rule to their woodland and subterranean hiding places.<sup>2</sup> Jean de Bethancourt, who conquered the Canary Isles for Castile in 1402 CE, also unleashed hunting dogs against the indigenous people, the Guanches.<sup>3</sup> This practise became a feature of the pacification of the Canaries over the course of the next hundred years and possibly of the final stages of the Reconquista too, when, in 1492, the Moorish kingdom of Granada was finally conquered by Ferdinand and Isabella. It would travel to the New World in the ships of the conquistadors, as detailed in the appalled testimony of the Dominican friar Bartolomé de Las Casas (1484–1566).<sup>4</sup> There is some suggestion, too, that the earl of Essex may have included mastiffs in the English forces he led to Ireland in 1598.<sup>5</sup> In the Americas, the use of dogs for military purposes became a characteristic and recurrent feature of colonial and racial conflict. Historians John Campbell and Sara E. Johnson have graphically chronicled how their employment became common practice in warfare against both indigenous populations and rebellious enslaved Africans and their descendants for over 300 years. In the event of insurrection, or during assaults on isolated maroon colonies (communities of runaways, established in remote areas such as the highlands of Jamaica or the Everglades of Florida), the bloodhound became a savage and effective weapon of white racial hegemony. The Cuban bloodhound, in particular, was widely exported to slave-holding regimes across the Americas and was employed by the French during the Haitian Revolution (1791–1803), by the British in the Second Maroon War in Jamaica (1795–1796), and by the Americans during the Second Seminole War in Florida (1835–1842).<sup>6</sup> The service of those dogs with the

2. Quoted in Stephen L. Dyson, *The Creation of the Roman Frontier* (Princeton, N.J.: Princeton University Press, 1985), 250. For a very full survey of the military use of dogs up to the nineteenth century, see David Karunanithy, *Dogs of War: Canine Use in Warfare from Ancient Egypt to the 19th Century* (London: Yarak Publishing, 2008).

3. Pierre Bontier and Jean Le Verrier, *The Canarian or the Conquest and Conversion of the Canary Islands by Messire Jean de Bethancourt*, ed. and trans. Richard Henry Major (London: Hakluyt Society, 1872), 149–50.

4. Bartolomé de Las Casas, *The Devastation of the Indies: A Brief Account*, trans. Herma Brifault (Baltimore, Md.: John Hopkins University Press, 1992), 127.

5. Letter, 29 April 1598, Giles Van Harwick [alias of William Resould] to Peter Artson [alias of Robert Cecil], in *Calendar of State Papers Domestic: Elizabeth, 1598–1601*, ed. Mary Anne Everett Green (London, 1869), 43.

6. John Campbell, “The Seminoles, the ‘Bloodhound War’ and Abolitionism, 1796–1865,” *Journal of Southern History* 72 (2006): 259–302; Sara E. Johnson, “‘You Should Give them Blacks to Eat’: Waging Inter-American Wars of Torture and Terror,” *American Quarterly* 61 (2009): 65–92.

French army in Madagascar in 1895 might, thus, be seen as a mere manifestation of an established, if under-acknowledged, tradition in European warfare.

Yet it is remarkable in another sense. The presence of dogs in an expeditionary force of the 1890s seems particularly striking as it occurred at a point when technological innovation was, it is often assumed, transforming the conduct of war. “Muscle,” it has been asserted, was giving way to “machine.” Tactically, the firepower of magazine-fed, bolt-action rifles, automatic machine-guns, and quick-firing (QF) artillery gave rise to the “empty battlefield” (not actually “empty,” of course, but where units were dispersed, in cover or entrenched). Operationally, the railways gave modern armies unprecedented mobility and an unheralded capacity for sustaining logistical support of forces in the field. The telegraph, and latterly the telephone, transformed the reliability, speed, and reach of communications available to commanders and the polities they served. Strategically, the modern industrial state proved capable of mobilising its population and its economic resources to a remarkable degree and thus of deploying mass conscript armies, paying them, equipping them, and feeding them not just for a campaigning season, but for conflicts that stretched over years. The pace of technological change seemed only to accelerate as the military possibilities of the internal combustion engine and powered flight were grasped, not to mention the yet darker potentialities offered by the chemical and biological sciences.

Given the significance of these developments, it is hardly surprising that many commentators on military affairs have consistently sought to define this age by its technologically innovative characteristics. Those who lived (and campaigned) through the wars of the new epoch were the most apt to stress the impact of recent inventions on the conduct of war. Thus, in 1920, J. F. C. Fuller would predict that “the doom of all muscular warfare has been sealed.”<sup>7</sup> Later generations of military historians, if rather less emphatic on that precise point, have nevertheless emphasised what they understood as the same broad trend. In 1986, Michael Geyer argued that the “true” conception of modern war was shaped by technology, machines being substituted for men.<sup>8</sup> For Trevor Dupuy, invention, in the fields of “metallurgy, chemistry, ballistics and electronics . . . mechanics and engineering,” was key to understanding war in “the age of technological change.”<sup>9</sup>

Naturally, this paradigm has not gone unchallenged. In the 1990s, historians of “machine age” warfare, such as Paddy Griffith, Hew Strachan, and J. P. Harris, pointed both to the continued importance of human qualities (of command, morale, and discipline) on the battlefield and to the practical limitations of nascent technical innovations in combat. Noted, too, were the frequent failures of technologically

7. J. F. C. Fuller, “Tanks and Cavalry Tactics,” *Cavalry Journal* [U.K.] 10 (1920): 527.

8. Michael Geyer, “German Strategy in the Age of Machine Warfare, 1914–1945,” in *Makers of Modern Strategy from Machiavelli to the Nuclear Age*, ed. Peter Paret (Oxford: Oxford University Press, 1986), 527–97.

9. Trevor N. Dupuy, *The Evolution of Weapons and Warfare* (New York: Da Capo, 1984), 169.

advanced armies to overcome less well-equipped adversaries, especially in counter-insurgencies.<sup>10</sup> Yet that same decade saw some of the most strident assertions linking ascendancy on the modern battlefield to “revolutionary” technological innovations. Contemporary military theorists suggested that advances in modern information and communications technologies were ushering in a “Revolution in Military Affairs” (RMA) that would, again, change the very nature of warfare. To bolster this case, commentators such as Andrew Krepinevich argued that this development was merely the latest example of a pattern of technologically driven revolutions that had shaped European warfare (it was a consistently ethnocentric thesis) over several centuries. Krepinevich thus characterised the latter half of the nineteenth century in familiar terms, as undergoing a “Land Warfare Revolution” propelled by “increases in the volume, range, and accuracy of fire [which was] further enhanced by improvements in artillery design and manufacturing, and by the development of the machine gun.”<sup>11</sup>

Some academics were receptive to this conception of military history driven by successive RMAs, such as the contributors to the 2001 volume of essays *The Dynamics of Military Revolution*, edited by MacGregor Knox and Williamson Murray.<sup>12</sup> Others, such as Colin S. Grey, Brice Harris, and Jeremy Black, have been far more sceptical, warning against over-stating the transformative impact of technological innovations. And the recent coalition campaigns waged in Iraq and Afghanistan (which, *pace* J. F. C. Fuller, proved rather “muscular,” especially in their demand for well-trained infantry), have reinforced how much has *not* changed in the conduct of modern war over the course of the last 100 years.<sup>13</sup> Nevertheless, even if most authors of military history now eschew a crude technological determinism, the tendency to (over)stress “revolutionary” transformations in the conduct of war driven by technological innovations persists. It is evident in Max Boot’s 2006 text *War Made New: Weapons, Warriors and the Making of the Modern World*; it is evident in Alex Roland’s 2016 overview of the subject, *War and Technology: A Very Short Introduction*.<sup>14</sup>

10. Paddy Griffith, *Forward into Battle* (Novato, Calif.: Presido Press, 1992), 136–72; J. P. Harris, *Men, Ideas and Tanks* (Manchester: Manchester University Press, 1995), 316; Hew Strachan, “The Morale of the German Army, 1917–1918,” in *Facing Armageddon*, ed. Hugh Cecil and Peter H. Liddle (London: Leo Cooper, 1996), 383–98.

11. Andrew Krepinevich, “Cavalry to Computer: The Pattern of Military Revolution,” *National Interest* 37 (1994): 30–42.

12. MacGregor Knox and Williamson Murray, eds., *The Dynamics of Military Revolution, 1300–2050* (Cambridge: Cambridge University Press, 2001).

13. Jeremy Black, *War and Technology* (Bloomington: Indiana University Press, 2013); Colin Grey, *Strategy for Chaos: Revolutions in Military Affairs and the Evidence of History* (London: Frank Cass, 2002); Brice Harris, *America, Technology and Strategic Culture* (London: Routledge, 2009).

14. Max Boot, *War Made New: Weapons, Warriors and the Making of the Modern World* (New York: Penguin, 2007), 115, 196–204; Alex Roland, *War and Technology: A Very Short Introduction* (Oxford: Oxford University Press, 2016), 73–74.

Where, then, in this vision of “warfare in the machine age” (to use Geyer’s phrase) do the dogs that accompanied the French expeditionary force to Madagascar in 1895 fit? At first glance, they might indeed seem simply to be a manifestation of that old European tradition of using “war dogs” in conflicts of conquest and colonisation. Yet it would be more correct to see them as representing an altogether more recent phenomenon: the mobilisation of animals on an unprecedented scale *as a response to* battlefield challenges posed by technological developments affecting the conduct of war. In short, their use provides graphic evidence that machine did *not* displace muscle in late nineteenth-century and early twentieth-century warfare. “Machine warfare” created a historically unprecedented demand *for* muscle. Consider the British Empire’s mobilisation of animals during the First World War. In November 1918, at the close of the conflict, the British Empire counted 791,696 draught and riding animals with its armies in all theatres: 510,000 horses; 225,311 mules; 36,834 camels; 8,425 bullocks; 11,028 donkeys. In addition, they were utilising, world-wide, about 100,000 carrier pigeons (not to mention gas-detecting canaries and messenger and sentry dogs, whose precise numbers were not recorded).<sup>15</sup> The exploitation of animals was thus as much a defining characteristic of modern warfare as was the impact of the technological innovations born of the industrial revolution.

This point seems most clear in the case of equids. Without horses and mules (or, in the desert, camels), it would have been impossible to prosecute warfare on any substantial scale well into the twentieth century. Indeed, even the maturation of the internal combustion engine did not have a particularly swift impact on military logistics. Overall, World War II probably saw an even greater mobilisation of equids than World War I (a possibility not generally acknowledged in works by Anglophone historians, whose views are, perhaps, distorted by the atypical levels of mechanisation achieved by U.S. and British Empire forces). As R. L. DiNardo has established, when Hitler’s forces invaded the Soviet Union in June 1941, they were dependent upon the 750,000 horses and mules that hauled their artillery, supply wagons, field kitchens, and ambulances and provided mounts for their cavalry divisions. The invasion force thus counted roughly one horse for every four men (the same proportion found in Napoleon’s Grande Armée in 1812). By early 1945, the Wehrmacht deployed some 1,198,724 horses in the field; a further 1,500,000 had, by then, died in their service.<sup>16</sup>

Rather than simply viewing this animal dependency as anachronistic, it might better be understood as actually indicative of warfare in the age of industrialisation.

15. *Statistics of the Military Effort of the British Empire during the Great War, 1914–1920* (London: HMSO, 1922), 878; A. H. Osman, “Pigeons in the Great War,” in *Pigeons in Two World Wars*, ed. Colin Osman (London: Racing Pigeon Publishing, 1976), 8.

16. R. L. DiNardo and Austin Bay, “Horse-Drawn Transport in the German Army,” *Journal of Contemporary History* 23 (1988): 129; R. L. DiNardo, *Mechanized Juggernaut or Military Anachronism: Horses and the German Army of WWII* (Mechanicsburg, Pa.: Stackpole, 2008), 39; Anthony Brett-James, *1812* (London: Macmillan, 1973), 10.

After all, as economic and urban historians have now demonstrated, both the industrial revolution generally and the growth of modern cities in particular were as dependent upon horse-power as upon steam-power. Indeed, the point about the machine age's reliance on animal muscle is particularly well illustrated by the relationship between the growth of railways and that of the national horse herd in the United Kingdom. This reached a peak of over 3 million by the end of the nineteenth century. The railway companies were major employers of horses. They were used directly on the lines in marshalling yards for shunting wagons and employed in even greater numbers in the collection and distribution of goods and people from terminals and stations.<sup>17</sup>

Recognising that the economies of the machine age were in fact characterised by an increase in the exploitation of animal muscle ought to have implications for how military historians approach this period. Heeding the suggestion of David Edgerton, they might refocus their attention to encompass not just the impact of innovation but also "the history of technology-in-use" (with "technology" usefully defined as the application of scientific knowledge for practical purposes, which would include such subjects as animal breeding, management, and care).<sup>18</sup> There have been a number of excellent works concerning the significance of equids in modern warfare, both as draught and riding animals.<sup>19</sup> For the other animals mobilised in the service of industrial societies at war, the scholarly literature is practically non-existent. Besides a genre of popular titles celebrating animal heroics, and some useful autobiographical accounts by dog handlers from World War II and later conflicts, there has been little academic study of canine use in modern warfare.<sup>20</sup> What has been written has tended to focus on World War II and the

17. F. M. L. Thompson, "Nineteenth-Century Horse Sense," *Economic History Review* 29, no. 1 (1976): 60–81. See also Ann Norton Greene, *Horses at Work: Harnessing Power in Industrial America* (Cambridge, Mass.: Harvard University Press, 2008); Clay McShane and Joel Tarr, *The Horse in the City: Living Machines in the Nineteenth Century* (Baltimore, Md.: Johns Hopkins University Press, 2011).

18. David Edgerton, *The Shock of the Old: Technology and Global History since 1900* (London: Profile, 2006), xi; "Technology," English Oxford Living Dictionaries on-line (Oxford University Press, 2016), <https://en.oxforddictionaries.com/definition/technology> [accessed 29 October 2016].

19. For draught work, besides DiNardo, see Emmett M. Essin, *Shave Tails and Bell Sharps: The History of the US Army Mule* (Lincoln: University of Nebraska Press, 1997); John Singleton, "Britain's Military Use of Horses, 1914–1918," *Past & Present*, no. 139 (1993): 178–203; Andrekos Varnava, "Fighting Asses: British Procurement of Cypriot Mules and Their Condition and Treatment in Macedonia," *War in History* 23 (2016): 489–515. For the continued utility of horse cavalry, see Stephen Badsey, *Doctrine and Reform in the British Cavalry 1880–1918* (Aldershot, Hampshire, U.K.: Ashgate, 2008); Jean Bou, *Light Horse: A History of Australia's Mounted Arm* (Cambridge: Cambridge University Press, 2010); David Dorondo, *Riders of the Apocalypse: German Cavalry and Modern Warfare, 1870–1945* (Annapolis, Md.: Naval Institute Press, 2012).

20. Indicative examples would include Peter Shaw Baker, *Animal War Heroes* (London: A. C. Black, 1933); John C. Burnam, *A Soldier's Best Friend: Scout Dogs and their Handlers in the Viet-*

post-war conflicts, with Vietnam probably having the most extensive coverage.<sup>21</sup> The question of why, therefore, in the period circa 1880 to 1918, Europe's armies effectively revived and expanded the military use of dogs demands attention.

While historians of machine age warfare may not have considered this phenomenon, its apparent paradox was not lost on contemporaries. In 1903, a British journalist, in an article on the use of dogs by the French and German militaries, wrote, "we have reached an age of extraordinary mechanism, but animals still come largely into the service of man in the art of war."<sup>22</sup> There was, as has been noted, a strong degree of continuity about the service of dogs, especially in their employment in colonial warfare. French troops had been accompanied by dogs not just in Madagascar in the 1890s, but in earlier campaigns in Tunisia and Algeria.<sup>23</sup> Their systematic use in so-called "civilised" warfare and their permanent integration into regular forces was, however, a novelty born of the machine age. Prior to the 1880s, locally sourced dogs had been used on an ad hoc basis for guard duties. Bloodhounds had been employed as guards and trackers by both sides in prisoner-of-war camps during the American Civil War (1861–1865). Dogs, either as regimental mascots or privately owned by officers, had accompanied units on campaign, the latter often for hunting, either for sport or to supplement rations.<sup>24</sup> By the 1880s, however, experiments were taking place that would result in the professionalization of military dogs and dog handling. Animals would be carefully procured according to their temperament, capacity to learn, and physical characteristics. They and their handlers would be thoroughly trained in their duties and they would serve against "civilised" enemies in the field. They would establish a continuous tradition of canine military service that persists to the present day.

That "extraordinary mechanism" of warfare had created demand for their services primarily in three main areas: locating both friendly (specifically wounded) and enemy troops (as sentries or on patrol), logistics, and communications. In large measure, these roles were functions of the dispersed tactics, extended ranges, and high ammunition expenditure characteristic of machine age combat. The Franco-

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*nam War* (New York: Carroll and Graf, 2003); Jilly Cooper, *Animals in War* (London: William Heinemann, 1983); William W. Putney, *Always Faithful: A Memoir of the Marine Dogs of WWII* (Dulles, Va.: Potomac Books, 2001).

21. See, for example, Karen Fischer, "Training Sled Dogs at Camp Rimini, 1942–1944," *Montana: The Magazine of Western History* 34 (1984): 10–19; Michael G. Lemish, *War Dogs: Canines in Combat* (London: Brassey's, 1996); Mary Kathleen Murray, *The Contribution of the American Military Working Dog in Vietnam* (Honolulu: University Press of the Pacific, 1998); Aaron Skabelund, "Breeding Racism: The Imperial Battlefields of the 'German' Shepherd Dog," *Society & Animals* 16 (2008): 354–71.

22. "Animals as Colleagues of the Soldier," *Sphere*, 21 March 1903, 288.

23. "The Use of Dogs in War," *Graphic*, issue 1254 (9 December 1903): 723.

24. Karunanithy, *Dogs of War*, 111–12; Lemish, *War Dogs*, 8; Douglas Murphy, "Dogs of Destiny, Hounds from Hell: American Soldiers and Canines in the Mexican War," *Military History of the West* 26 (1996): 35–48.



Prussian War of 1870–1871 had highlighted the significant challenges facing modern armies on fire-swept battlefields but dogs, it was swiftly recognised, offered potential solutions. Consider, first, the problems posed by the increased use of dispersed, open-order formations by infantry as they responded to the increased range, accuracy, and rate of fire of breech-loading rifles, such as the Prussian Dreyse needle-gun and the French Chassepot.<sup>25</sup> One practical problem arising from these tactics was the location and recovery of the wounded, who not only were now scattered across a wide area but had often taken shelter in deep cover and were thus quite hidden from view. The British dog trainer Edwin H. Richardson graphically illustrated this point with a melancholy photograph of the skeletal remains of an infantryman who had died at Gravelotte in 1870. He was not discovered until years later, still lying propped against the dense hedgerow where he had succumbed alone to his wounds, “the result,” Richardson commented, “of the non-use of Ambulance Dogs.”<sup>26</sup>

Such dogs not only were trained to locate the wounded but also carried a pouch containing a first-aid kit and possibly a flask of soup or brandy from which the injured might “gather strength” as they awaited the stretcher bearers. There was a long-standing civilian precedent for using dogs in this way: “after all, this is only a different version of what the famous St. Bernard dogs have been doing from time immemorial when succouring worn-out travellers on the Pass.”<sup>27</sup> While experiments along these lines were taking place in a number of European armies by the 1890s, it was Germany who had taken a clear lead, often employing Scotch collies for this purpose. The German military had long benefitted from civilian voluntary and charitable auxiliary medical services, *Freiwillige Krankenpflege*, such as the *Sanitäts-züge* and *Kranken-züge* (hospital trains) provided by the Order of St. John during the Franco-Prussian War. The Society of Red Cross Dogs was founded on a similar model in 1893. Its well-heeled members, numbering 1,000 by 1900 and “[including] many of the high princes and nearly all the leading generals of the army,” undertook the breeding, training, and supplying of ambulance dogs to the German army, on the basis of “philanthropy pure and simple,” from kennels in the Rhenish town of Lechenich.<sup>28</sup>

However, while ambulance dogs would clearly aid in the location of one’s own wounded soldiers, it was well appreciated that the canine’s keen senses of smell and hearing would be invaluable in warning of the proximity of hostile troops. Typically, and “depending on the strength of the wind and the tenderness of his nose,” a guard dog could easily detect a human at between 50 and 250

25. Dennis E. Showalter, “Infantry Weapons, Infantry Tactics, and the Armies of Germany,” *European Studies Review* 4 (1974): 119–40.

26. E. H. Richardson, *War, Police and Watch Dogs* (London: Blackwoods, 1910), 74–75.

27. “The Use of Dogs in War,” *Graphic*, issue 1254 (9 December 1903): 725.

28. Maximilian Foster, “Dogs of War,” *Idler*, September 1902, 688; “War Dogs,” *Sketch*, 6 June 1900, 298; E. E. Hulme, “Medical Work of the Knights Hospitallers of St John of Jerusalem,” *Bulletin of the Institute of the History of Medicine* 6 (1938): 697–98; W. G. MacPherson, “The German Regulations for Utilising Voluntary Aid in War,” *Journal of the Royal Army Medical Corps* 1 (1903): 459–86.



*British soldier removing bandages from the kit of a British dog during World War I* [Library of Congress]

yards. Some very impressive claims were made: “[deerhounds] have “challenged” cavalry from a distance of three to five miles, according to the direction of the wind, and infantry from nearly two miles. They can be trained to announce the approach of a known friend in a quite different way, viz., by leaping to and fro or crouching down and jumping up by turns, but without the warning growl of the danger approach.”<sup>29</sup> Historically, it was in the related, but distinct, roles of “sentry” (guarding a position) and “scout” (working with patrols to locate enemy troops) that the animals (medium- to large-sized sheep dogs came to be favoured) had been used most frequently. Richardson, writing in 1910, pointed to their recent use in “savage warfare” by the French in Africa, in government operations against guerrillas in Mexico, by the Russians in their 1877 war against the Ottomans, and by both sides during the Russo-Japanese conflict of 1904–1905. Richardson also noted that frontier forces, such as those of the Habsburgs in Bosnia-Herzegovina, had a long tradition of employing dogs, too. As with ambulance dogs, there were also useful precedents in civilian life; one British newspaper reported in 1889 that dogs were being used extensively, both by smugglers to carry contraband and by the customs officers attempting to track them, along the Franco-Belgian border.<sup>30</sup>

29. “The Dogs of War,” *Manchester Times*, 24 November 1893, 5.

30. Richardson, *War, Police and Watch Dogs*, 91–107; “The Dogs of War,” *Saturday Review*, 28 December 1889, 739.

It is likely that the Japanese use of dogs for scouting work was evidence of the influence of their German military advisors. They had begun experiments using dogs for “outpost work” in 1886, especially in association with the *jäger* (light infantry) regiments, whose duties traditionally included tactical (local) reconnaissance and flank protection.<sup>31</sup> The potential benefits of employing scout dogs were outlined by one contemporary:

As scouts in front and on each side of the line of march, they are expected to be likewise useful, and are to undertake some duties which now tell severely both on man and horses. Woods, ravines, farm-buildings, or hamlets, lying close to the line of march, have always to be reconnoitred and searched ere troops can pass them, and the labour and delay caused are serious. Parties must be detailed, perhaps for considerable distances . . . and the column has to halt till their work is done. The constant recurrence of such duties is very fatiguing, and in an enclosed country it is not easy for a horseman to efficiently perform them. It is thought that a few good dogs, ranging widely from the scouts, would save them an immensity of trouble and do the work equally well.<sup>32</sup>

However, it was not merely the dogs’ sense of smell that was to be called upon on active service; their physical strength would prove an asset too. It was quickly recognised that, if necessary, some ambulance dogs might help with the actual transport of the wounded from the battlefield, a reminder that, at this time, dogs were frequently employed in light draught work across continental Europe.<sup>33</sup> It was, therefore, very natural also to see in the dog a solution to another of the challenges of modern warfare: battlefield logistics. Small arms ammunition expenditure had been, in particular, a growing concern as infantrymen were armed with breech-loading, repeating, and, by the 1890s, magazine-fed, bolt-action rifles. These weapons not only increased the infantry’s rate of fire, and thus the number of rounds they expended in action, but also increased the depth of the fire-swept zone, making it dangerous to locate ammunition carts too close to the firing line, and thus difficult to resupply troops once they were under heavy fire. The Franco-Prussian War had, once again, given notice of the changed conditions, with some units depleting all their rounds in particularly severe actions, but the adoption of automatic machine guns such as the Maxim and Hotchkiss in the 1890s had exacerbated the problem. German regulations of 1904 stressed the point: “Timely renewal of the ammunition supply is of the utmost importance . . . The officers and men charged with renewing the exhausted supply must make the utmost efforts and employ all means to keep the firing line constantly supplied.”<sup>34</sup> Dogs could

31. “Dogs as Soldiers,” *Answers to Correspondents on Every Question under the Sun*, 16 February 1889, 187.

32. “The Dogs of War,” *Saturday Review*, 28 December 1889, 739.

33. “The Use of Dogs in War,” *Graphic*, issue 1254 (9 December 1903): 724.

34. “Drill Regulations for Machine-Gun Batteries,” trans. Paul T. Brockmann, in *Selected Translations Pertaining to the Use and Value of Machine-Guns* (Washington: Government Printing Office, 1906), 152.

either haul small carts, and even, as in the Belgian army, serve as teams for wheel-mounted machine guns, or be used as pack animals.<sup>35</sup> A British journalist who witnessed a German “exhibition of the capabilities of war dogs” in 1895 described how “the dogs were employed as ammunition carriers, each animal carrying a weight equal to 250 shotted cartridges in a sort of saddle on his back. In this manner they supplied the line of firing soldiers with fresh ammunition.”<sup>36</sup>

Naturally, the dogs used for draught work tended to be stronger and heavier animals, often those especially bred for such tasks. Mountain warfare posed especial challenges. In 1915, Allan Alexander “Scotty” Allan, reputedly “the greatest dog driver of the century,” worked with the French officer Lieutenant René Haas to supply 450 Alaskan huskies to the Alpine Chasseurs operating in the Vosges mountains. There, in winter, they hauled sledges that maintained supply lines in conditions that defeated all other forms of transport: Allan “relates that one section carried ninety tons of ammunition to a battery within four days to a place that men, mules and horses had been trying to reach ineffectually for fourteen days.” In spring and summer, these remarkable dogs proved equally useful: “after the snows had melted they pulled trucks on narrow gauge light railways, eleven dogs being able to draw a ton up precipitous slopes.”<sup>37</sup>

As has been noted, the use of dogs both as sentinels or trackers, or for draught work, had long-standing precedents, and was mirrored, in contemporary civilian usage. The other emerging duty of military dogs, carrying dispatches, also had some established civilian parallels in parts of Europe, such as Austria “where four-footed messengers have for many years been taught to carry letters to the snow bound villages of the Alpine high lands.”<sup>38</sup> Their use in this function by soldiers was more novel (although there is some suggestion that the Ancient Greeks may have employed dogs in this fashion during sieges).<sup>39</sup> Yet, once more, it was intimately connected to the challenges of modern combat. It reflected the impact of dispersed tactics, extended ranges, and the sheer scale of modern battlefields, all of which militated against the use of conventional forms of signalling. Even at comparatively short distances, shouts and bugle calls were lost in the din of battle. Dispatch riders were all too vulnerable to enemy fire and signalling flags were similarly conspicuous besides being limited in their effective range. A dog, however, “is not only much quicker than a man, and can cover ground where no cycle could go, but he also

35. Somerville Story, “The Dogs of War: All About the Four-Footed Soldiers of France,” *Wide World Magazine*, May 1917, 566; G. S. Hutchinson, *Machine Guns: Their Tactical History and Employment* (London: Macmillan, 1938), 48–49; H. S. Lloyd, “The Dog in War,” in *The Book of the Dog*, ed. Brian Vesey-Fitzgerald (London: Nicholson and Watson, 1948), 181.

36. “Exhibition of Capabilities of War Dogs,” *Berrow’s Worcester Journal*, 29 June 1895, 2.

37. Shannon Garst, *Scotty Allan: King of the Dog Team Drivers* (Redhill, Surrey, U.K.: Wells Gardner, Darton, 1948), 169–84; Story, “The Dogs of War,” 565; A. Croxton Smith, “Dogs at the Front,” *Field*, 2 December 1939, 1075.

38. “Dogs of War,” *Manchester Times*, 24 November 1893, 5.

39. Owen Rees, “Let Slip the Dogs of War: Dogs in Ancient Greek Warfare,” *Ancient Warfare* 8, no. 5 (2014): 42–46.

has the advantage in being almost invisible to the enemy." Witnesses to early demonstrations in the 1880s and 1890s claimed to have seen messenger dogs carry dispatches over one and one-half kilometres in around two minutes and noted that "dogs racing along the battle-front will dodge bullets by running zigzag, and develop a marvellous talent for taking advantage of every cover, running through the highest grass or along the safe side of rocks and fallen trees."<sup>40</sup>

Such demonstrations quickly established the viability of the dispatch dog, and systematic programmes of training were developed in the German, Habsburg, and French armies. The latter proved particularly bold in their approach. In most instances, dogs were treated as a one-way form of communication. Thoroughly trained to pay no mind to bullets or explosions, to negotiate obstacles, and to ignore distractions, they were expected to return to their handler on being released from the firing line. The French, however, in addition to the messenger dog, trained also *chiens de liaison* who were accustomed to work with two handlers and were thus capable of maintaining two-way communications. Such dogs were especially useful in lateral communication, allowing effective liaison between units operating next to each other in the front line, which often proved a significant challenge in the trench warfare of 1914–1918.<sup>41</sup>

The relationship of the messenger dog to innovative technologies is a particularly interesting one. Dogs searching "the empty battlefield" for wounded men, or warning of the enemy's proximity, and those carrying munitions, equipment, and supplies, were essentially servants of the new weapons technologies. The messenger and liaison dogs, on the other hand, seem more akin to unlikely competitors to sophisticated emerging communication technologies: the telegraph and, latterly, the telephone and the wireless. Yet these nascent technologies, while perhaps offering a revolutionary potential, had stark limitations in wartime. Animals, and not just dogs, offered a viable contingency. During the Franco-Prussian War, roving squadrons of Uhlans had soon severed French telegraph lines and isolated French garrisons had defaulted to dispatching messages to Paris by carrier pigeons procured from civilians. Paris itself came to rely upon an improvised carrier pigeon service that, during a four-month siege, carried 150,000 official and 1,000,000 private communications into the beleaguered city.<sup>42</sup> The military implications were not lost on continental soldiers. In the aftermath of the conflict, military lofts were established across the continent. It has been estimated that as many as 500,000 birds were eventually mobilised by the rival armies over the course of the First World War (the French monument to carrier pigeons, dedicated in Lille after the war, estimated that some

40. Story, "The Dogs of War," 564; "Dogs of War," *Manchester Times*, 24 November 1893, 5; "War Dogs," *Berrow's Worcester Journal*, 29 June 1895, 2.

41. Ivan Novikoff, "Doctoring War Dogs," *Wide World Magazine*, January 1918, 363; E. H. Richardson, *British War Dogs* (London: Skeffington, 1920), 74–75.

42. "The Use of Carrier Pigeons in War," *Freeman's Journal and Daily Commercial Advertiser*, 21 September 1870, 4; Robert Lubow, *The War Animals: The Training and Use of Animals as Weapons of War* (New York: Doubleday, 1977), 27–29.

20,000 had died in their service. In Belgium, a nation of pigeon fanciers in 1914, about a million pigeons were seized or destroyed by the occupying forces).<sup>43</sup>

In the years leading up to 1914, neither the development of wire-dependent telephones nor bulky, unreliable, and insecure wireless sets suggested to continental European militaries that they might safely dispense with their animal messengers. Pigeons were primarily seen as a means of communication over longer distances, although during the war, in the interest of both speed in relaying information and effective liaison between infantry and gunners, mobile lofts (motorised or horse drawn) were often pushed up dangerously close to the front line. The British sometimes operated their lofts within 2,000 yards of German positions.<sup>44</sup> Generally, at tactical distances, dogs had advantages over pigeons: they could carry longer messages (usually in a pouch attached to the collar); they could run at night; they coped better with rain, snow, and high winds; and, where liaison dogs were available, they offered two-way communication. Of all the dog soldiers of 1914–1918, messengers would prove the most useful.

By the outbreak of that conflict, dogs were an established part of all the major continental European armies. Contemporaries did not regard their presence as antithetical to modernity but rather as characteristic of the age. The British journalist Sommerville Story wrote in 1917, “the use of dogs in warfare was, of course, not invented in the present war, though their utility has been systematized and given more scientific scope than was ever the case before.”<sup>45</sup> This “scientific scope” was particularly evident in the nature and thoroughness of training regimes that instructed dogs in their specific duties to a very sophisticated degree (“dogs on sentry or scouting duty are taught to announce their discoveries by low growls, indeed some of the more highly trained ones manage to make known items of intelligence which they are able to give merely by gestures, never uttering a sound while on duty”),<sup>46</sup> acclimatised them to the din and confusion of battle, and taught them to distinguish friend from (likely) foe, as in this description from 1893:

in the German training process some of the soldiers put on French and Russian uniforms to represent the enemy . . . The pseudo French and Russians then do all in their power to arouse the dogs’ dislike by beating and ill-treating the animals, and shouting loudly at them in the two hostile languages. When the dogs’ temper is thoroughly excited against their fictitious adversaries, the German soldiers come to the front to pet and caress the angry animals and

43. “Homing Pigeons in War Time,” *Nineteenth Century Review* 45 (May 1899): 815–20; “Memorial to War Pigeons,” *Times*, 9 March 1931, 12.

44. War Diary, Officer Commanding, Carrier Pigeon Service, 26 February 1916, WO/95/123/5, The National Archive, United Kingdom [hereafter TNA]; August 23, 1916, WO/95/123/5, TNA; 14 December 1917, WO/95/123/6, TNA; 11 September 1918, WO/95/123/7, TNA.

45. Story, “The Dogs of War,” 566.

46. John Garle, “Training War Dogs,” *Field*, 19 October 1946, 434; “War Dogs,” *Graphic*, issue 1017 (25 May 1889): 574.

reward them with meat or some other canine delicacy—a sure road to their favour. Thus the distinction is speedily learnt.<sup>47</sup>

Doubtless such exercises were stressful for the canine recruit, as indeed must have been other elements of their training, such as being accustomed to rifle fire and explosions. Yet it is striking that the handling of dogs was generally marked by a rejection of unnecessary cruelty or harshness in their treatment and a strong emphasis on fostering emotional bonds between dog and man. The British dog trainer E. H. Richardson is typical in this regard, commenting that “complete confidence and affection must exist between dogs and keeper, and the man whose only idea of control is by coercion and fear is quite useless.” A wartime German memorandum revealed that they operated on the same principle: “Those men only are to be accepted who have a genuine love of dogs. On this essentially the animals’ performance depends.”<sup>48</sup> This attitude, too, was a manifestation of the essential modernity of the revival in the military use of dogs; such views were characteristic of a late nineteenth-/early twentieth-century rejection of René Descartes’s assertion that animals were simply flesh and bone automatons that “have no reason at all.”<sup>49</sup>

Although far from universal in wider society, a willingness to recognise the capacity of dogs to think and feel and even exhibit a degree of understanding of the tasks they were being asked to perform, was an important part of the success that the best military dog handlers of this period enjoyed. Again, Richardson put it well: “I have found that many men, who are supposedly dog experts, are not sufficiently sympathetic, and are apt to regard the dog too much as a machine. They do not study the psychology of their charges sufficiently.”<sup>50</sup> The best scientific opinion of the day concurred. For Charles Darwin, the variations in the cognitive capacities between species were distinctions of degree not kind: “there is no fundamental difference between man and the higher mammals in their mental faculties.” And it was clear to him that animals led rich emotional lives: “but man himself cannot express love and humility by external signs so plainly as does a dog, when with drooping ears, hanging lips, flexuous body, and wagging tail he greets his beloved master.”<sup>51</sup> Recognising this wise and scientifically informed understanding of animals’ capacity to feel and to reason is important in explaining not only the success of the military dog training

47. “The Use of Dogs in War,” *Graphic*, issue 1254 (9 December 1893): 724.

48. Richardson, *British War Dogs*, 65; “The Employment of Messenger Dogs,” translation in Richardson, *British War Dogs*, 254–56. On this point, see also Robert G. W. Kirk, “In Dogs We Trust? Intersubjectivity, Response-able Relations and the Making of Mine Detector Dogs,” *Journal of the History of the Behavioural Sciences* 50 (2014): 1–36.

49. René Descartes, “Discourse on the Method of Rightly Conducting the Reason and Seeking for Truth in the Sciences,” in *The Philosophical Works of Descartes*, vol. 1, trans. and ed. Elizabeth S. Haldane and G. R. T. Ross (Cambridge: Cambridge University Press, 1967), 117.

50. Richardson, *British War Dogs*, 65.

51. Charles Darwin, *The Descent of Man and Selection in Relation to Sex* (London: John Murray, 1871), 35–40; Darwin, *The Expression of the Emotions in Man and Animals* (London: John Murray, 1904), 12.



*Group of war dogs decorated for bravery by the French War Department for heroic work during World War I [Library of Congress]*

programmes but also the attitudes displayed towards animal soldiers during the First World War. It is, for example, in this context that we might best understand the belief that animals were capable of, and should be rewarded for, performing acts of valour. Thus, during the war, the French initiated the practice (later emulated by the British and Americans) of awarding decorations for gallantry to both dogs (who received “collars of honour”) and pigeons (the “war ring”).<sup>52</sup>

Whatever one’s position on the contentious question of animal consciousness, the performance of dogs once in combat generally vindicated the faith shown in them. German Lieutenant General Wilhelm Balck recorded that messenger dogs

proved very good up to a distance of 2 kilometres . . . Only a very small percentage of the dogs employed were failures. Some dogs carried more than 30 messages per day . . . Carrier pigeons and message dogs frequently were the only means of communication between the fighting troops and the commanders.<sup>53</sup>

These dogs often demonstrated a remarkable capacity to learn from the new and terrifying circumstances in which they found themselves. Balck noted that “frequently under very heavy fire dogs sought cover in shelters and bombproofs and continued their run carelessly as soon as the fire became weaker,” while a British

52. “Souvenirs for French War Dogs,” *Nottinghamshire Evening Post*, 29 October 1919, 1; Story, “The Dogs of War,” 561; “Feathered War Heroes,” *Times*, 4 February 1920, 13.

53. Wilhelm Balck, *Development of Tactics—World War*, trans. Harry Bell (Fort Leavenworth, Kans.: General Service School Press, 1922), 135.



dog “keeper” noted, “I could see that Major was actually dodging the shells. He took a wide sweep from where the first shell fell, and kept working out further.”<sup>54</sup>

The problem most armies experienced was securing enough animals to meet the insatiable demand for “muscle” made by this machine age warfare. The German army was the most systematic in its use of dogs (with an official establishment of 12 dogs per regiment) and fielded the highest number in 1914, around 6,000 accompanying its armies in the opening campaigns. They were also the most organised in terms of reserves as well, with dogs registered by the Society of Red Cross Dogs and with other breeders’ associations, such as that for the German Shepherd, all being assessed and made available for military service. Even so, and in common with the other major combatants, the Germans were, by 1917, forced to appeal for new recruits via the press: “the army again needs dogs between the ages of one and four years old . . . They must be offered free. The breeds required are sheepdogs, fox terriers, Airedale terriers and mongrels of those breeds.” Over the course of the conflict the Germans employed some 30,000 dogs.<sup>55</sup>

These animals shared the hardships, dangers, and suffering of front-line soldiers; at the end of the war, the French demobilised 15,000 military dogs but recorded 5,000 dead or “missing.” For some of the dogs, as for human soldiers, the stress proved too much. “Poor Maggie was shell-shocked,” lamented the keeper of one British messenger dog who had died near Hill 60 in the Ypres Salient in early 1918. While she had lived, though, he noted, she had beaten the runner every time and never made a mistake.<sup>56</sup>

The British army had, in fact, been very slow to recognise the potential of dogs such as Maggie. Indeed, the British army provides a particularly interesting case study of the relationship between the muscular and the mechanical in modern warfare. Notwithstanding a historiographical reputation for technophobia and hippophilia, the Victorian and Edwardian army exhibited a consistent preference for mechanical solutions, wherever feasible, to emerging problems. The “mechanisation” of the army thus began in the mid-nineteenth century. Trials with steam traction engines for draught work were held as early as 1858 and one accompanied the army on campaign in the Ashanti War of 1873–1874. Other than the widespread use of railways, the British were “the first nation to employ mechanical power in any numbers in warfare, when using traction engines and several steam lorries [55 vehicles of various makes in total] . . . during the 1899–1902 [Second South African] War.”<sup>57</sup> By 1914, a significant proportion

54. Balck, *Development of Tactics*, 135, quoted in Richardson, *British War Dogs*, 123.

55. Baker, *Animal War Heroes*, 38; A. Croxton Smith, “Dogs at the Front,” *Field*, 2 December 1939, 1075; “German War Dogs,” *Field*, 3 July 1915, 32; “Army Dogs for Specialist Jobs,” *Sport and Country* 204 (2 October 1957): 301.

56. Quoted in Richardson, *British War Dogs*, 122.

57. Philip Ventham and David Fletcher, *Moving the Guns: The Mechanisation of the Royal Artillery 1854–1939* (London: HMSO, 1990), 6–8; Graham Winton, *Theirs Not to Reason Why: Horsing the British Army 1875–1925* (Solihull, West Midlands, U.K.: Helion, 2013), 192–93.



*German Red Cross dogs during World War I [Library of Congress]*

of the army's transport (including in the cavalry) was motorised. In 1915, a fully mechanised combat unit, a battery of 9.2 inch howitzers drawn by American Holt caterpillar tractors, was deployed at Neuve Chappelle (10–12 March). The following year, the British deployed the first tanks in combat.<sup>58</sup>

The corollary of this willingness to embrace the potential of various new-fangled mechanical contraptions was a reluctance to consider innovative ways of exploiting animal muscle. It was, given the limitations of the nascent technologies, unfeasible to dispense wholly with horses and mules (and camels and elephants in other climes) but the use of both dogs and carrier pigeons was, although considered, firmly rejected before the war. The challenges posed by industrial warfare on the Western Front, however, forced the British to re-think and they found themselves scrabbling to catch up the German and French lead in their use of animals.

The military employment of both animals on the continent had been noted and debated in Britain. They had their dedicated advocates, notably Captain H. W. T. Allatt for the pigeon and Major Edwin H. Richardson for the dog.<sup>59</sup> Allatt, for a while at least, enjoyed the most success. The army experimented with pigeons throughout the 1880s and he was eventually asked to establish a carrier pigeon section. This, however, saw only limited service. During the Second South African War, the besieged garrison of Ladysmith had maintained contact with Durban via carrier pigeon but this system had been extemporised; the Durban Homing

58. Winton, *Theirs Not to Reason Why*, 317.

59. See, for examples, H. T. W. Allatt, "Pigeons as Messengers in War," *Pall Mall Gazette*, 30 January 1886, 6; "Forester," "Military Matters," *Derby Daily Telegraph*, 8 July 1901, 4.

Society had volunteered their birds when war broke out.<sup>60</sup> There remained serious doubts about the viability of a carrier pigeon service in modern warfare. One British commentator noted, “their postal service will obviously only work one way [and] as a means of sending messages to a moving force they are utterly unavailable.” Nor would it be practical to supply every likely location for a military headquarters with a loft in advance of hostilities. There, too, was the question of their reliability; it was feared that they could not be depended upon, being apt to “get discouraged or lost” in difficult conditions. In contrast, the “Telegraph Division” that had served in South Africa had proved an unqualified success. The War Office thus abolished the pigeon section in 1907.<sup>61</sup>

For his part, Richardson had much success in training dogs for both police and military work and in supplying them to foreign powers. Several of his ambulance dogs served with the Russian army in Manchuria during the war with Japan, 1904–1905, and with the Spanish in Morocco in 1909. However, his offer to supply similar dogs to the British army during the Second South African War had been turned down. Inevitably, British troops in South Africa had adopted local dogs, and these had sometimes served as sentinels for the laagers of flying columns and the garrisons of blockhouses. As Richardson commented, “how infinitely superior would it have been had each regiment been provided with a corps of properly tested and trained dogs, these dogs handled by men already taught how to put them to the fullest advantage.”<sup>62</sup> His was not a lone voice; similar views were aired in the press:

Dogs are trained by the Germans to carry ammunition to the firing line during a battle. At the Modder River [28 November 1899] the fire of the enemy swept the plain with such vehemence that it was impossible for the “carriers” with the reserve ammunition to cross the ground and take supplies to the fighting force. In this case dogs could have done, probably in perfect safety, what men could not do.<sup>63</sup>

The experience of modern warfare on the veldt does seem to have caused the army to re-consider the case for dogs, at least for a while. Richardson was asked to attend manoeuvres in Scotland with his ambulance dogs. General Sir Charles Tucker put them “through severe tests” and “recommended their adoption.” Shortly thereafter, two of Richardson’s sentry dogs accompanied an expedition by Ghurkhas of the Indian army against the Abor people, a mountain tribe of the Indian-Chinese

60. “The War Authorities and Carrier Pigeons,” *Citizen*, 18 March 1887, 3; “Racing Pigeons for Use in War,” *Nottinghamshire Guardian*, 24 December 1898, 6; “Pigeons as Carriers of War Messages,” *Huddersfield Daily Chronicle*, 29 November 1900, 4.

61. R. E. Priestley, *The Work of the R.E. in the European War, 1914–19: The Signal Service* (1921; repr., Uckfield, East Sussex, U.K.: Naval & Military Press, 2006), 3–4; “Pigeons as Messengers in War,” *Yorkshire Herald*, 25 November 1899, 14; “War Pigeons Abolished,” *Nottingham Evening Post*, 12 August 1907, 7.

62. Richardson, *War, Police and Watch Dogs*, 80–84, 105–6.

63. “Dogs in War,” *Yorkshire Telegraph and Star*, 7 December 1899, 3.

border, in 1911–1912. According to press reports, these “proved their efficiency.” Yet these experiments failed to sway the War Office in favour of their use.<sup>64</sup>

Richardson’s endeavours to persuade the army to employ dogs foundered on both institutional and cultural obstacles. The War Office’s objections seem rooted in a belief that, under the conditions of modern war, dogs would, like pigeons, simply prove temperamentally unreliable: “the suggestion of ‘cowardice’ is spoken . . . It is felt that long training in good behaviour in front of a row of Maxim’s [machine-guns] would be essential before any material advantage could be achieved.”<sup>65</sup> Besides, outside of agriculture and sport, there were fewer working dogs in Edwardian Britain compared to continental Europe. This was largely the result of animal welfare legislation passed in the Victorian era. The dog-cart bill of 1854 had protected canines from the cruelty of this form of exploitation, from the damage done by hard roads to soft paws and the pain and injury of poorly designed collars and harnesses combined with heavy loads. The admirable sentiments that drove such legislation were also a factor in the debate over the use of dogs by the army. Renewed calls in 1914 that dogs be employed for draught work were successfully opposed by the National Canine Defence League.<sup>66</sup>

So, alone among the major combatants, the British army (officially) went to war in 1914 with neither dogs nor pigeons. Yet they would soon have recourse to the latter and, following on from this, they would eventually turn also to the dog. The key issue was the problem of maintaining battlefield communications, for recent technical innovations proved unequal to the challenge of the war. It is important to understand the scale of the problem. At the strategic and operational levels, the telegraph was the British army’s preferred communication technology. During the manoeuvre battles of 1914, signallers were, inevitably, heavily reliant on the existing civilian networks. Once the war settled into a static “war of positions,” the telephone was recognised as “the most practical and swiftest means of liaison.”<sup>67</sup> Yet, like the telegraph, it was dependent upon its wires, which, if laid on the ground, were frequently cut by shell fire or by careless traffic. The only really secure lines were buried underground, yet these required a great deal of labour to install and could only be established in semi-permanent positions. Even then there was a significant problem. As Major R. P. Pakenham-Walsh, Royal Engineers, noted, “the telephone and the telegraph, except the Fullerphone [developed in 1915 and only available in quantity by 1916] are liable to be over heard by the enemy, depending on the extent to which the circuit is ‘earthed.’ It is therefore very dangerous to use them for important messages within 1,000 yards or so of the enemy.”<sup>68</sup>

64. “Ambulance Dogs,” *British Medical Journal* 2, no. 2293 (1904): 1589–90; “Abor Expedition,” *Aberdeen Daily Journal*, 25 November 1911, 6.

65. “Britain and War Dogs,” *Evening Telegraph*, 26 June 1901, 3.

66. Hilda Kean, *Animal Rights: Political and Social Change in Britain since 1800* (London: Reaktion, 1998), 84, 168.

67. Paul Azan, *The War of Positions* (Cambridge, Mass.: Harvard University Press, 1917), 58.

68. R. P. Pakenham-Walsh, *Elementary Tactics or The Art of War, British School* (London: Sifton Praed, 1926), 68.

Wireless telegraphy (W/T) was also problematic. The most powerful sets were so cumbersome they had to be transported by wagon. Beyond poor mobility, Pakenham-Walsh again noted their insecurity: "at present there is no method of preventing any other station within range and in tune reading any message sent by wireless." Messages could be encrypted but "the time taken in enciphering and deciphering the message may mean valuable time is lost." In practise, therefore, "W/T is slower than line telegraphy as far as actual transmission of messages is concerned." Furthermore "by means of directional wireless the situation of active wireless stations may be located [by the enemy]." Wireless could also be "jammed" and indeed the number of wireless sets in any one area was "limited by the necessity of avoiding 'interference' between them."<sup>69</sup> Only by the summer of 1918 were sufficient quantities of portable and (relatively) robust continuous wave (CW) sets available to establish wireless as a viable means of communication. Even then, as R. E. Priestley, who worked with the early CW sets, noted, they were "extremely delicate" and "there were literally dozens of ways in which they could go wrong."<sup>70</sup>

The difficulties were most apparent below divisional level and especially where units had either advanced beyond their wire networks or had become isolated on the battlefield. Visual signalling, with flags, lanterns, or electric flash lights, was, at best a supplement to be used when lines were unavailable. As French Colonel Paul Azan advised his new American comrades in 1917, their use "is a delicate task for [signalers] must manage, by choosing their position well, to be seen by those with whom they wish to communicate, without being exposed to the enemy: such conditions are frequently impossible to realise."<sup>71</sup> There was no shortage of ingenuity or innovation in attempting to solve this problem. Rockets, flares, and Verey lights were widely used for making pre-arranged signals such as calling for a barrage, but were clearly limited in how much information they could convey and were visible to the enemy. Ground telegraphy, such as the British "power buzzer," had no wires to be cut and was effective up to 3,000 yards, but the equipment was heavy and insecure. In these circumstances, generals could meticulously plan battles, but once they were underway, effective command and control was next door to impossible. Maintaining communications required front-line troops to have a variety of methods available to them, from which the most appropriate could be selected depending on the contingent conditions. In many instances, the only option was the human runner. These, of course, proved all too vulnerable, especially with the development of barrage fire, which could create

69. Pakenham-Walsh, *Elementary Tactics*, 69.

70. Priestley, *Signal Service*, 226. The best scholarly work is by Brian N. Hall, "The 'Life-Blood' of Command? The British Army, Communications and the Telephone, 1877-1914," *War & Society* 27 (2008): 43-65; "The British Army and Wireless Communication, 1896-1918," *War in History* 19 (2012): 290-321; and "Technological Adaptation in a Global Conflict: The British Army and Communications beyond the Western Front, 1914-1918," *Journal of Military History* 78 (2014): 37-72.

71. Azan, *War of Positions*, 59.

near impenetrable barriers to (human) movement. It was in this context that, belatedly, the British army turned to animal messengers.

The key individual was Alec Waley, who accompanied the British Expeditionary Force (BEF) to France in 1914 as a second lieutenant in the Intelligence Corps. During the battles of 1914, as signallers struggled to establish and maintain fixed communication lines, Waley borrowed some pigeons from the French army. As the fighting began to settle into the trenches, “under his enthusiastic impulse [the pigeon service] proved its value, for when . . . the Germans were closing in on Ypres, and the roads through the town became shell traps, Alec Waley was a well-known figure taking to the front line the pigeons that saved the life of many a dispatch rider.”<sup>72</sup> On 28 July 1915 the nascent Carrier Pigeon Service was taken over by the Director of Army Signals, with Waley as “officer commanding.” He proved a tireless and capable officer. By the end of the war, he, and his 380 “pigeoneers,” would be responsible for lofts (fixed and mobile) operating 20,000 birds and for having trained some 90,000 soldiers (British Empire, Portuguese, and American) to care for and fly pigeons in the front line.<sup>73</sup>

The birds proved swift and reliable. During November 1915, it was recorded from a loft at Poperinghe that 39 percent of pigeon-borne messages were received within fifteen minutes of the bird being tossed and 81 percent within twenty-five minutes. Only 2 percent of the birds had gone missing. This was far faster than runners could manage. In some circumstances, pigeons even out-paced wire. In May 1916, Waley recorded: “officer i/c Divisional Signals . . . mentioned that when messages were over 30 words the pigeon nearly always beat the wire, as a certain amount of time was always lost in re-transmitting the wire from Brigade to Divisional Headquarters.”<sup>74</sup> When units advanced beyond their wire networks, pigeons were frequently the primary means of communication rearward. When Waley visited the BEF’s II Corps on 31 July 1917, the opening day of Third Ypres, he was informed that “75% of the news which had come in from the firing line had been received by pigeon.”<sup>75</sup>

That the British army had erred in rejecting the carrier pigeon as a means of communication before 1914 had become rapidly apparent under the actual conditions of machine age warfare. Nor should their use be seen merely as a reflection of the limitations of the new communications technologies; as with equids and dogs, technological innovation created new demands for pigeon “muscle.” In January 1916, for example, cavalry signallers, then serving dismounted, sought to maximise the potential of their wireless sets by using them in conjunction with their pigeons. Deploying their bulky wagon-carried equipment, they established a wireless station behind the trenches, alongside their loft. From this they could contact a lighter receiving-only set in the trenches and thus respond to the messages carried back

72. “Major Alec Waley,” *Times*, 2 October 1934, 19.

73. War Diary, O.C., C.P.S., 28 July 1915, WO/95/123/4, TNA; Priestley, *Signal Service*, 53.

74. 6 and 8 December 1915, WO/95/123/4, TNA; 29 May 1916, WO/95/123/5, TNA.

75. 31 July 1917, WO/95/123/6, TNA.

by pigeon: “by this means, two-way working was established in a novel fashion.”<sup>76</sup> Indeed, the most technologically advanced branches of the British army, for example, the Royal Flying Corps and the Tank Corps (originally “Heavy Section Machine Gun Corps”), were among the most avid users of pigeons. On 13 September 1916, Waley had “spent the morning at ‘Tanks’ arranging for birds and giving Officers details re use and handling of carrier pigeons.” Two days later the tanks would be committed to battle for the first time, complete with their complement of pigeons. Again, they swiftly proved their worth, the crews tossing their birds to report the capture of enemy positions, send “SOS” messages, and request artillery barrages when no other means of communication was available to them.<sup>77</sup>

The success of the carrier pigeon service demonstrated that the pre-war fears that animals would be temperamentally unequal to the stress of modern warfare were mistaken, and thus paved the way for the British to introduce messenger dogs, too. Waley, again, would be an instrumental figure. Useful as carrier pigeons had proved, he had faced operational challenges that dogs might help meet. Since the BEF had been playing catch-up in its use of pigeons, there were never enough to meet demand from the front line. British pigeon fanciers had, in the remarkable spirit of volunteerism that characterised the age, made thousands of trained, well-bred, and valuable birds freely available, and Waley worked effectively with Lieutenant-Colonel A. H. Osman, who was organising the carrier pigeon services within the United Kingdom. Yet the war’s appetite for pigeons was insatiable. Osman had to provide birds not just to France but also to a home defence network, to maritime forces (especially the volunteer trawler crews, who played an important role in mine-sweeping but whose vessels were not generally equipped with wireless), and, in 1918, to a specialist carrier pigeon service for the newly created Royal Air Force; Osman noted that “there were lofts at all important aerodromes at the conclusion of the war.”<sup>78</sup> Waley, characteristically adopting best practice from the French, had established his own breeding lofts. Yet he could never supply quite enough birds, and often pigeons that were too young, inexperienced, and poorly trained were dispatched prematurely to the front line and tossed into strong wind, or driving snow and rain, and were, inevitably, lost.<sup>79</sup>

Indeed, while pigeons proved far more resilient than had been expected (coping well with the mud and rain of Passchendaele and, although not immune to poison gas, generally proving able to deliver messages despite its use), environmental conditions often did take a heavy toll of birds’ lives, especially during the peculiarly severe winter of 1916–1917 and the heavy storms of late 1917.<sup>80</sup> Nor would they

76. Priestley, *Signal Service*, 142.

77. 12, 13, 15, 17 September; 23 October; 14 November 1916, WO/95/123/5, TNA.

78. Osman, ed., *Pigeons in Two World Wars*, 17–21, 28–29.

79. 22 January; 21 November; 13, 14 December 1917, WO/95/123/6, TNA.

80. For two heartfelt tributes from veterans to the pigeons of Passchendaele, see Colonel A. F. Thompson, “War Pigeons,” *Times*, 10 July 1929, 17; and A. L. Binfield, “War Pigeons,” *Times*, 12 July 1929, 10.



*Pigeons in baskets being loaded onto a train, Dunkerque, France, during World War I [Library of Congress]*

fly in darkness (although both the French and British were experimentally training birds for night flying by 1918).<sup>81</sup> By 1917, Waley appreciated that messenger dogs would be a more-than-viable supplementary means of communication. Suitably trained, they adapted more quickly to new surroundings (pigeons in mobile lofts needed, ideally, between a week and a fortnight to settle in a new location); they ran well at night too and could be relied upon in all weather conditions. In November 1917, Waley visited 4th, 6th, and 3rd French Armies “to study organisation of the Messenger Dog Service” and the French war office’s kennels in Paris. The following month, he attended trials with the British 4th Army and observed “actual use made of dogs from the trenches” by the French 16th Division, with a view to establishing a dog messenger service for the BEF.<sup>82</sup> This was, undeniably, late in the day, reflecting the greater reluctance to consider dogs than pigeons for military service that had been evident pre-war. Yet, whatever the official War Office attitude, some privately sourced dogs had been serving with individual British units since 1914. Unlike in South Africa, some of these were highly trained animals, often supplied by Edwin Richardson. He himself had travelled to Belgium with the British Red Cross on the outbreak of war with some ambulance dogs but had been forced to abort his mission by the rapidity of the German advance. An Airedale terrier (a favourite breed of Richardson’s) that he had trained for sentry work accompanied the 2nd Norfolks to France at the same time, only to be killed by shellfire on the Aisne. As the war settled into the trenches, Richardson asserted that both he and the War Office began to receive more and more letters from officers in the front line requesting dogs, initially

81. Priestley, *Signal Service*, 138.

82. 28, 29 November; 1, 4, 11 December 1917, WO/95/123/6, TNA.





*Edwin H. Richardson with British Red Cross dogs during World War I* [Library of Congress]

mostly for sentry and patrol work. Richardson, wherever possible, seems to have done his best to oblige, supplying a number of dogs for a variety of purposes. For example, in 1915 he gifted an Irish terrier puppy called Norah to a Canadian friend, Thomas Radford, then serving as a private in the Canadian Veterinary Corps. Norah, originally intended to be a pet, subsequently established a fearsome reputation as a ratter in the trenches, and was praised by senior medical officers for disposing of so many disease-bearing rodents (100,000 in under three years according to one press report!).<sup>83</sup> However, in terms of promoting the official use of war dogs, by far the most significant animals Richardson supplied were the trained messenger dogs he provided, beginning with two Airedales called Wolf and Prince for Colonel Ormonde Winter, Royal Field Artillery, serving with the BEF's 11th Division in the winter of 1916–1917.<sup>84</sup>

There are some grounds for treating Richardson's account of the adoption of messenger dogs by the BEF with a degree of caution. His 1920 book *British War Dogs* should be understood as part of his continued advocacy of the permanent establishment of dog sections by the military. He naturally places his own efforts front and centre and seems rather to marginalise the substantial contribution ultimately made by Waley. He is somewhat vague on both chronology (the messenger dog service was not properly organised until 1918) and the relatively small number of animals he trained and supplied. Yet, in reproducing reports from the "keepers" handling dogs at the front, he provided remarkable evidence of the utility of war

83. "The Champion Rat-Killer," *Answers*, 18 May 1918, 344.

84. Richardson, *British War Dogs*, 55–56.

dogs in machine age warfare. Prince and Wolf first saw action in early 1917, attached to gunners acting as liaison with the infantry or as forward observation officers. Led up to the front line in darkness, through winding communication trenches and a barrage, they both carried dispatches their first night in the trenches: “[they] reached brigade headquarters, travelling a distance as the crow flies of 4,000 yards over ground they had never seen before and over exceptionally difficult terrain . . . all visual communication having failed.” When Canadian infantry stormed Vimy Ridge on 8 April, they were employed with an artillery observation post supporting the attack: “all the telephones were broken and visual signalling was impossible. The dogs were the first to bring through news.”<sup>85</sup>

Richardson gives the impression that, in the aftermath of these successes, the use of messenger dogs by British Empire forces in the field increased rapidly. A War Dog School was established at Shoeburyness, Essex, with Richardson in command. He noted demand not just for messengers but for sentries too, to free up manpower guarding installations in the United Kingdom and for duties in France, Flanders, and Salonika. There, the front line often consisted of scattered outposts rather than continuous or deep, entrenched positions, and No Man’s Land was, in places, wide enough to be patrolled by cavalry. The usefulness of properly trained guard dogs in such a theatre was manifest.<sup>86</sup> Even in the appalling environmental conditions of the Ypres salient in 1917, during the infamous Passchendaele offensive, the dogs proved themselves again and again:

on dark and stormy nights they were invaluable. And the time in which they did their work was approximately the same as in daytime. The average speed of the dog was one-half to one-third of the time taken by runners in the daytime and at night less still. Runners have come in cut and bleeding from barbed wire and other obstacles, after having been lost for several hours in the darkness, while the dogs have come through safely and without delay.<sup>87</sup>

In the defensive operations of the following spring, British units with dogs continued to find them invaluable. “Keeper” Reid, one of the men Richardson had trained at Shoeburyness, wrote to him in late May 1918:

On May 2nd . . . I was sent to the 18th Div . . . At 10 p.m. the Hun came over on the [Queen Victoria’s Rifles]—my dog was at their Batt. Hdqtrs. They were cut off from the London Regt.; they released “Tweed” with the message “Send up reinforcements and small round ammunition.” He came through a Boche barrage—three kilos. in 10 mins. The French were sent up and filled the gaps . . . otherwise Amiens would be in the hands of the Germans.<sup>88</sup>

85. Richardson, *British War Dogs*, 56–57.

86. Richardson, *British War Dogs*, 59–60; S. F. Hatton, *The Yarn of a Yeoman* (London: Hutchinson, 1930), 114–15.

87. Richardson, *British War Dogs*, 82–83.

88. Richardson, *British War Dogs*, 97.

Yet, amongst the catalogue of canine achievements under fire that he chronicles, even Richardson quietly acknowledges that British military dog use throughout 1917 was ad hoc and far from universally accepted. Officers who requested dogs got them, but, to Richardson's frustration, the belief that dogs could not cope with the stress of modern battle remained prevalent. The officer who would establish the British Messenger Dog Sections on a systematic basis and integrate them effectively into the BEF's conduct of operations was the pigeoneer-in-chief, Major Alec Waley. Having familiarised himself with the French messenger dog service in late 1917, and observed some of the British dogs already in action, he met Richardson in Shoeburyness on 5 January 1918. Showing the same energy and initiative he had in establishing the pigeon service, Waley had, by 14 January, arranged for wire to be placed around land allotted for his newly established "GHQ Central Kennels, Messenger Dog Service" at the BEF's largest base depot, Étaples. Within a month this installation was operational. From this central kennel, dogs and keepers were posted to sectional kennels supporting front-line units. These sectional kennels had an establishment of one sergeant, sixteen men (the "keepers"), and two to three dogs per man. In action, keepers would accompany the dogs as far forward as brigade headquarters; the dogs would go into the line with a detail of infantry. Upon release they would return, bearing dispatches in a tin cylinder attached to their collars, to their keeper at brigade headquarters.<sup>89</sup>

Waley, as he had with the pigeon service, simultaneously built up the dog service from (close to) scratch, devised its operational procedures, trained dogs and men, and deployed them on active service in ever-increasing numbers throughout 1918. His war diary, in his terse and matter-of-fact style, was soon recording his progress:

[16 April 1918] Visited 1st. Australian Brigade. [They] were attacked heavily in the night so that 6 dogs at Battalion Headquarters had been thoroughly tested. The 6 dogs had been released with messages and 5 had returned in excellent times. One, however, was still missing . . .<sup>90</sup>

What makes his achievement all the more remarkable is that he did this during the months of the crisis of spring 1918, as Allied armies reeled before the hammer blows of the German offensives. Those offensives were a catastrophe for the carrier pigeon service; many fixed and mobile lofts, and the birds they housed, had to be destroyed to prevent them falling into enemy hands. Not only did Waley salvage what he could and re-establish the pigeon service in time for the Allied counter-offensives opening that July, but, working closely with his French comrades, he also established a pigeon-based liaison system between the high command of the two armies, in case the Germans should succeed in driving a wedge between them. Yet, by then, it was his messenger dog sections that looked to have more of a future. The (semi)mobile warfare of 1918 limited the utility of carrier pigeons. In the midst

89. 5 January, 14 January, 16 February, 20 February, 21 March 1918, WO/95/123/7, TNA.

90. 16 April 1918, WO/95/123/7, TNA.

of the defensive battles of the spring, Waley lamented, “during [a] rapid retreat in a few hours pigeons were useless.” Similarly, when BEF units were themselves advancing quickly in September, he noted that, in the hard-driving Canadian Corps, “an average of about 150 birds are being sent up daily to Brigades . . . and about 50 operations messages are coming in by pigeon . . . but owing to the rapid advance the distance for birds to fly back and the distance for the transmission of messages forward makes it extremely difficult for Divisions to receive messages early enough to be of any real use.”<sup>91</sup> The dogs, however, were proving more and more useful and were becoming more widely accepted. On 11 June, as the BEF’s 4th Army prepared for the coming counter-offensives, Waley recorded that in that formation “a fixed establishment of 30 dogs per Division has been arranged.”<sup>92</sup>

Their deployment was not without problems; both Waley and Richardson deplored Tommy’s habit of fussing over the dogs, distracting them while they were running. Waley, however, also notes instances of maltreatment. He and Richardson also had to work together to revise training methods; Richardson had been acclimatising dogs to the noise of gunfire and explosions in groups. Some who then found themselves running alone on the battlefield, without the comforting presence of their canine comrades, did not cope well.<sup>93</sup> Overall, however, the dogs were a success and, throughout the summer and autumn months of 1918, Waley’s war diary records such comments as “reports from VIII Corps re Dogs are very satisfactory” and “Signals [in XIX Corps] are making good use of their dogs and Divisions in the line are asking for more.”<sup>94</sup> Having proved the reliability of dogs in the messenger role, Waley was, by September, training dogs for a wider range of duties including liaison dogs, “carrier dogs” (both on the French model), and police dogs for the redcaps (military police) at Étapes.<sup>95</sup>

The conventional, innovation-centric narratives of “the 100 Days” campaign that ended World War I stress mechanical and technological innovation: pigeons supplanted by wireless, cavalry supplanted by armour, infantry platoon and squad tactics based around automatic weapons, the precision and sophistication of artillery support, the employment of tactical airpower on the battlefield.<sup>96</sup> In contrast, the BEF’s increasing use of dogs has been entirely unheralded. The overall number of messenger dogs actually committed to action by the BEF is, it is true, difficult to estimate. Richardson cast his net widely, recruiting strays from

91. 11 April, 1 June, 9 September 1918, WO/95/123/7, TNA; Priestley, *Signal Service*, 264–65, 277, 329.

92. 11 June 1918, WO/95/123/7, TNA.

93. 13 May, 20 July, 22 July, 19 August, 30 August 1918, WO/95/123/7, TNA.

94. 23 August, 4 September 1918, WO/95/123/7, TNA.

95. 6 September, 24 September 1918, WO/95/123/7, TNA.

96. See, for examples, Paddy Griffith, *Battle Tactics of the Western Front* (London: Yale University Press, 1994); Gary Sheffield and Peter Gray, eds., *Changing War: The British Army, the Hundred Days Campaign and the Birth of the Royal Air Force, 1918* (London: Bloomsbury, 2013); Tim Travers, *How the War was Won: Command and Technology in the British Army on the Western Front 1917–1918* (London: Routledge, 1992).

Battersea Dogs Home and similar institutions in Birmingham, Liverpool, Bristol, and Manchester. Yet he gave no precise numbers and, anyway, he was not the sole source of dogs. In early May 1918, Waley had discovered that one of his sergeants had adopted three local strays and was training them on his own initiative. Waley rather disapproved, but, by the end of the month, there was an official policy to round up similar strays at the base ports and, if they proved suitable, pass them to the kennels at Étapes for training.<sup>97</sup> In total, the British probably never deployed more than a few hundred or so messenger dogs to the front line, far fewer than the French or Germans. Yet their presence would, in all likelihood, have become ubiquitous at battalion level if the war had continued into 1919, as, indeed, was stipulated in the BEF's last instructions for divisional attacks, issued shortly before the armistice. As Richardson commented, "Like the Tank [the messenger dog] may be said to be particularly a product of this war."<sup>98</sup> The experience of warfare on the Western Front had finally convinced the British of what both their allies and enemies had already realised in 1914: there were important roles for dogs on modern battlefields. Warfare in the machine age called upon their muscles, sinew, and brains to an unprecedented degree. They serve our militaries to this day.

97. 13 May, 25 May 1918, WO/95/123/7, TNA.

98. Richardson, *British War Dogs*, 50, 63.

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