

Logistics and the BEF: The Development of Waterborne Transport on the Western Front, 1914-1916

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ABSTRACT

The historiography of logistics on the Western Front has been dominated by discussion of railways. Indeed, General Joffre himself was credited as having dubbed the First World War a 'railway war'. However, the canals and rivers of France and Flanders were also pressed into action during the conflict. This article discusses the manner in which the British Expeditionary Force (BEF) actively engaged with and supported the work of Gerald Holland, a retired naval officer and Marine Superintendent, to establish an effective, 'civilianized' department of inland water transport on the Western Front. It illustrates that, even before the 1916 transportation mission led by Sir Eric Geddes, the British Army was not the insular institution its detractors – most notably Lloyd George – asserted.

Introduction

The grave of Brigadier-General Gerald Holland lies in the Catholic Cemetery in Holyhead, where he had lived and worked before the First World War. Responsible for bringing the Directorate of Inland Water Transport into being on the Western Front, Holland's contribution to the expanding commitment of the British Empire to the conflict has until now been largely ignored. Ian M. Brown, whilst acknowledging the role of inland water transport [IWT] in reducing the demands made upon the French railway network, both misdates the initiation of the service and makes no comment upon the manner of its creation.¹ Charles Messenger, in his survey of the British Army's evolution during the war, refers to IWT only in an appendix dedicated to cataloguing military acronyms and abbreviations.² The number of troops mobilized

¹ I.M. Brown, *British Logistics on the Western Front, 1914-1919* (London: Praeger, 1998), p. 127.

² C. Messenger, *Call-to-Arms: The British Army, 1914-18* (London: Weidenfeld & Nicolson, 2005), p. 515.

by the forces engaged on the Western Front ensured that 'living off the land' was unsustainable for an extended period of time. The transport networks in the Franco-Belgian borderlands were therefore responsible for the provision of almost everything that the armies required in order to fight and survive during the war; ensuring their efficient operation was a fundamental concern for the BEF's senior commanders. However, whilst the development of rail transport between 1914 and 1918 has generated a considerable collection of material, outside brief passages in the *Official History* volume on transportation the contribution of IWT to the conduct of operations on the Western Front has been reduced to that of a mere footnote.³ This article seeks to amend that deficiency.

The absence of a European companion to Lieutenant-Colonel Hall's volume on waterborne transport developments in Mesopotamia⁴ although understandable in terms of the relative importance of IWT on the Western Front and in the Middle East, has led to the eclipse of canal traffic and the diminution of the roles of those involved in providing it in Europe for the majority of the conflict. The result is an incomplete understanding of the intricate mixture of supply methods cultivated by the BEF on the Western Front. Furthermore, the history of IWT in France flatly contradicts Lloyd George's post-war assertions regarding an 'ingrained distrust' from within the BEF towards those whose past experiences were not primarily with the army.⁵ Using the diaries and memoranda created by the directorate itself, this article demonstrates that, from its inception in December 1914, the provision of IWT in France was supervised by a 'civilianized' organization supported and encouraged by the British Army. The experience of IWT demonstrates that civil-military partnerships could be, and were, developed prior to the arrival of Sir Eric Geddes in the late summer of 1916.⁶ However, due to a combination of factors: alliance politics; wider organizational deficiencies within the BEF; and an incomplete conception of the role of transportation within the British 'war machine', prior to the Battle of the

³ A.M. Henniker, *History of the Great War: Transportation on the Western Front, 1914-1918* (London: His Majesty's Stationery Office, 1937).

⁴ L.J. Hall, *The Inland Water Transport in Mesopotamia* (London: Constable & Co., 1921).

⁵ D. Lloyd George, *War Memoirs of David Lloyd George*, vol. 1 (London: Odham's Press, 1938), p. 83.

⁶ On Geddes, see K. Grieves, 'The Transportation Mission to GHQ in 1916', in B. Bond et al (eds) "*Look to Your Front!*": *Studies in the First World War by the British Commission for Military History* (Staplehurst: Spellmount, 1999), pp. 63–78; K. Grieves, *Sir Eric Geddes: Business and Government in War and Peace* (Manchester: Manchester University Press, 1989), pp. 27–39; Brown, *British Logistics*, pp. 139–51; Henniker, *Transportation*, pp. 183–92, 200–11.

Somme IWT would not become a fully integrated component of the BEF's logistics system.

Commander Gerald Holland and the birth of Inland Water Transport

The corner of northern Europe that became the Western Front was not only served by a communications network based on road and rail. The canal and river systems of France and Belgium were 'undoubtedly among the finest in the world', consisting of almost ten thousand miles of navigable waterways across the two nations.⁷ Unlike in Britain, where the spread of railways had all but eliminated the canals as a carrier of goods prior to the First World War, the Belgian waterways were responsible for approximately half of the goods and merchandise traffic within Belgium. In 1905, the total quantity of goods carried by water in Belgium amounted to 53,345,000 tons.⁸ The war brought this traffic almost to a standstill. The 'permanent way' of the canal network, however, remained in many places both intact and, in northern France following the initial phase of mobile operations, within the hands of the Allies. Yet despite the acknowledged existence of this network of waterways, the thorough reconnaissance of which had taken place over the previous years as the British Army prepared for a European deployment, such studies had not been buttressed by the creation of a procedure for the operation of IWT in the event of war.⁹ The only reference made in the instructions issued to the Inspector-General of Communications [IGC] on mobilization were that 'unless otherwise ordered... the Director of Transport will act as Director of IWT' in addition to their other duties.¹⁰

The reasons for this omission were threefold. In the first instance, the British had not utilized IWT during the war in South Africa and, coupled with the minimal use of canals in peacetime British industry, the army had consequently become 'blinded' to the advantages that an efficiently operated network of canals and rivers could offer in Europe.¹¹ Secondly, when placed in direct comparison with the railway network on

⁷ The UK National Archives [TNA]: Public Record Office [PRO] WO 95/56 Director Inland Water Transport, Memorandum number 1, 19 September 1915, p. 1; TNA: PRO WO 158/851 History of Inland Water Transport, p. 2.

⁸ TNA: WO 95/56 Memorandum number 1, p. 2.

⁹ Liddell Hart Centre for Military Archives, Papers of Field-Marshal Sir William Robertson, 1/3/2 Text of a lecture on the military geography of Western Europe, 1908, p. 14; TNA: PRO WO 33/615 Report on Roads, Rivers and Billeting in Belgium, volume II, 1913. This booklet contains almost eighty pages of detailed notes on the rivers Sambre and Meuse, and the Ath-Blaton canal: Henniker, *Transportation*, 174.

¹⁰ TNA: PRO WO 33/686 Instructions, Part V, sub-section 5.

¹¹ TNA: WO 158/851 History of IWT, p. 126.

the Western Front, the limitations of IWT were stark. Waterborne traffic routes were fixed, and the process of altering the flow of rivers or canals would take far longer than the equivalent task on the railways. Repairs to waterways damaged during operations also required far greater commitments of manpower and resources than similar lengths of railway, whilst the rate of progress of river craft also made them unsuitable for supply tasks in what was widely predicted would be a war of manoeuvre. Restricted to travel only during daylight hours, the negotiation of lock gates and problems related to adverse winds and currents further widened the already significant 'speed gap' between barge and locomotive.¹² Canal traffic was limited to a top speed of six kilometres per hour for single vessels (and just four-and-a-half kilometres per hour for convoys) to ensure that the wash emanating from the craft did not damage the banks.¹³ Thirdly and finally, although much of the northern French network remained in Allied hands after the onset of static warfare in the winter of 1914, a considerable stretch of the Belgian system and key connections on the French (such as the St. Quentin canal) either lay in the possession of the Germans or were unsafe for craft.¹⁴

Despite these impediments, Commander Gerald Holland approached the War Office in the early weeks of the war convinced that the 'splendid' waterways of France and Belgium could provide a useful supplement to the existing rail facilities.¹⁵ As the rank suggested, Holland's background was with the navy rather than the army. Having joined the Royal Indian Marine in 1880, Holland had seen service in Burma before an appointment on the Naval Transport Staff in Durban during the South African War. Holland's naval career ended in India in 1905 with him occupying the post of principal port officer at Rangoon, following which he returned to Britain and entered the employment of Britain's largest railway company, the London and North-Western Railway [LNWR]. After a brief spell as Marine Superintendent at Fleetwood, in 1907 Holland transferred to fulfil the same role at Holyhead, the position he occupied when war broke out in August 1914.

Holland's initial approach to Whitehall was, however, unsuccessful, 'as it was at that time considered that rail transport, supplemented by adequate road transport, would fully meet the requirements' of the BEF in terms of logistical support.¹⁶ Yet rather than evidence of inter-service rivalry or the innate insularity of Whitehall, the War Office's decision was reflective of the military situation at the time. In the fluid

¹² Henniker, *Transportation*, p. 174.

¹³ TNA: WO 158/851 History of IWT, p. 34.

¹⁴ TNA: WO 158/851 History of IWT, p. 4.

¹⁵ TNA: PRO CAB 45/205 Private diary of Lieutenant-Colonel G.E. Holland, R.E., information dictated by Major Bradbury.

¹⁶ TNA: CAB 45/205 Holland diary, information dictated.

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opening encounters of the conflict there was both comparatively little strain on the French railways to provide for the 'contemptibly' small BEF contingent from across the Channel, and a dearth of high-quality IWT facilities in the zone initially occupied by the BEF. Following the move north of the British forces in October 1914 and the onset of trench warfare as the position of the front line stabilized, however, both of these factors began to change. Firstly, the decision to raise and deploy a large British army on the Western Front brought with it the requirement to create and maintain a correspondingly large supply network to sustain and equip that force. Secondly, the BEF's deployment in Flanders placed it within the scope of the northern waterway network linking the Channel ports of Calais and Dunkirk with the inland towns of St. Omer and Ypres. This northward relocation of the British force therefore made the use of IWT far more practicable than had been the case when Holland first raised the subject with the War Office. As a result of these developments, on 10 December 1914 the loading of supply barges began at Berguette,¹⁷ on 14 December Holland's name was raised as a 'suitable officer' to 'connect' the canal and railway networks,¹⁸ and on 28 December Commander Holland (whose name had been retained by the War Office for just such an eventuality) was offered a temporary commission in the Royal Engineers. Two days later, Lieutenant-Colonel Holland crossed the Channel in order to 'report as to the steps which should be taken to enable the waterways to be utilized for transport work for the British Army'.¹⁹

Holland's private diary from this period survives, and illustrates both the complexity of the task ahead of him and the assistance provided by the army despite his status as an 'outsider'. On 30 December 1914, Holland reported for duty at GHQ and, in contravention of the instructions issued to the IGC upon mobilization, was placed under the authority of the Director of Railway Transport rather than the Director of Transport.²⁰ The reason given for this decision was that as the French regarded canals and railways as 'one question', the British organization ought to mirror that of the senior partner in the coalition.²¹ The idea of following the French hierarchical structure would survive until October 1915; the possibility of using French crews to pilot the craft (in the same way that French engine crews operated the locomotives supplying the BEF) was abandoned far sooner. On the day after his arrival in France, Holland interviewed a local tug captain and ascertained that the French custom was for a barge to be operated and lived on by an entire family, and – even more

¹⁷ TNA: PRO WO 95/3951 French to Kitchener, 9 December 1914; WO 95/27 diary entry, 15 December 1914.

¹⁸ Robertson Papers, 2/2/43 Cowans to Robertson, 14 December 1914.

¹⁹ TNA: WO 158/851 History of IWT, p. 5.

²⁰ TNA: CAB 45/205 diary entry, 30 December 1914.

²¹ Robertson Papers, 2/2/44 Robertson to Cowans, 16 December 1914; Henniker, *Transportation*, p. 85.

inconveniently – that the locals would not ‘go where ordered – [they] want to choose the ports they will ply on’.²² A meeting with the French Army’s canal expert revealed that this obstinacy was not based on any kind of national intransigence, the crews happened to be just as truculent in the face of French military authority.²³ At the beginning of 1915, therefore, the IWT department consisted of ‘two officers, no men, one hired tug and thirty-four barges’.²⁴

The only alternative open to Holland was to enlist personnel from Britain to man the barges and to provide the technical and administrative support necessary to maintain an efficient fleet of craft. Holland’s diary records both the names and the experiences of those chosen to populate the new department, emphasizing the breadth of skills required to manage a modern army. The majority, unsurprisingly, were chosen as a result of having prior experience of the shipping industry, including Horace Pitman who had ten years’ experience as a yachtsman. Corporal William McKinlay, who had originally enlisted in 1914, was transferred into the department by virtue of having trained as a surveyor with Lloyd’s Register of Shipping before the war. George Tagg, despite his being fifty-two years of age, was appointed for his knowledge of the French and Belgian canal systems and his family connections to the boat building industry.²⁵

Others were chosen for less obvious, but no less important abilities, such as E.G. Weston, Assistant Secretary in the Colonial Civil Service, who was appointed to offer clerical assistance in the War Office for the newly established department.²⁶ In contrast to their attitude towards the Geddes ‘mission’ in 1916, the War Office itself also actively supported the new department.²⁷ The Director of Movements, Brigadier-General Richard Montagu-Stuart-Wortley, agreed to the release of Lieutenant Baugh and the attachment of Colonel Collard to the fledgling outfit.²⁸

²² TNA: CAB 45/205 diary entry, 31 December 1914.

²³ TNA: CAB 45/205 diary entry, 1 January 1915. On 2 January Holland interviewed the Belgian canal representative, meaning that within four days of his arrival on the Western Front he had established what appear to have been friendly and mutually beneficial relations with his counterparts in the Belgian and French forces. Such harmony among technical units offers a significant divergence from the ‘discordant strategies’ adopted by the senior commands of the various Allied forces in this period. See W. Philpott, *Anglo-French Relations and Strategy on the Western Front, 1914-18* (Basingstoke: Macmillan, 1996), pp. 51–67.

²⁴ TNA: WO 95/56 Memorandum number 1, pp. 3-4.

²⁵ TNA: CAB 45/205 diary entries, 20 and 23 January 1915.

²⁶ TNA: CAB 45/205 diary entry, 22 January 1915.

²⁷ K. Grieves, ‘The Transportation Mission to GHQ in 1916’, p. 71.

²⁸ TNA: CAB 45/205 diary entries 9 and 10 January 1915.

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However, the majority of recruits, and the nucleus around which IWT on the Western Front was constructed, entered the department as a direct result of its founder's pre-war career. Holland's three senior subordinates were all retired officers from the Royal Indian Marine, whilst the LNWR contributed a number of administrative and marine staff that volunteered to serve under their pre-war manager.²⁹ On 13 January, a list of men from the Marine Department at Holyhead who were willing to enlist was compiled, 'fifty all told', each being medically examined and sent to the Royal Engineers' training camp at Longmoor.³⁰ An 'active campaign of enlistment' at various ports in Britain accounted for the lightermen, watermen, seamen, engineers and other assorted trades required to ensure the department's ability to fulfil its duties.³¹

Not only would Holland be in charge of the provision of adequate personnel and equipment to maintain a dependable delivery service, he would also be responsible for the repair of vessels and waterways, for the efficient operation of inland quays and docks, for regulating traffic on the canals, and for providing a telephone link across the entire IWT network in order to secure communications.³² With the Directorate of Railway Transport coming under increasing pressure to provide additional railway personnel and facilities as the pre-war agreement with the French began to unravel (not to mention the profound differences between the two modes of transport),³³ it became impossible for Holland to rely upon his nominal superior for guidance and support. The Director of Railway Transport, Colonel Twiss, was a 'pure' railwayman, lacking the technical knowledge of IWT upon which to found policy judgments within the directorate.³⁴ As a result, on 2 February, Holland was given twenty-five expert telephone linesmen to undertake all the necessary communications work required to make IWT a self-sufficient unit.³⁵

Concurrent with the organizational arrangements physical work also began. On 5 January barges began to load road stone direct from a ship berthed at Calais, and inland discharge utilizing civilian labour contracted from a local firm was arranged the

²⁹ TNA: WO 158/851 History of IWT, pp. 8-9.

³⁰ TNA: CAB 45/205 diary entry, 13 January 1915.

³¹ TNA: WO 158/851 History of IWT, p. 19.

³² TNA: WO 95/56 Memorandum number 1, p. 4.

³³ The pre-war agreement between British and French staffs saw the host nation agree to undertake all of 'the work of construction, repair, maintenance, traffic management and protection' required by the BEF 'not only in French territory but beyond the frontier'. See Henniker, *Transportation*, p. 13.

³⁴ TNA: WO 158/851 History of IWT, p. 17.

³⁵ TNA: CAB 45/205 diary entry, 2 February 1915.

following day.³⁶ As the units recruited in Britain passed through Longmoor and crossed to France, the civilian labour withdrew and the department began to resemble more closely a recognizable provider of military logistics. Despite the isolation of IWT from railway transport in terms of its command relationship, the organization of the department's operations bore similarities to those employed by the railways in both peace and war. In much the same way that the Railway Transport Establishments were formed to oversee the BEF's use of railways, and to act as a conduit to the French authorities for British requirements, authority over IWT operations was divided into districts under the charge of a district officer.³⁷ Not only were the district officers responsible for the loading and discharging of vessels within their zone of supervision and for maintaining contact with the British and French military authorities in the area, they were also responsible for ensuring the safe passage of vessels through the district and the 'passing on' of information to neighbouring districts.

In effect IWT operated a system of divisional responsibility which decentralized the detail of everyday work and encouraged initiative among district officers (the 'men on the spot'), freeing Holland and his senior subordinates to concentrate on establishing the principles and procedures required to obtain the highest degree of efficiency from the fleet. It was an organizational solution borrowed from the railways, expounded by the Midland Railway immediately prior to the war in a pamphlet issued to showcase their pioneering Train Control System.³⁸ With the construction of new waterways impracticable, it was imperative that the existing network was used effectively. To do so required the coordination of the BEF's military traffic (which was by far the most prevalent of all canal use during the war), that supplying the Belgian and French armies, and the small proportion of civilian traffic which continued to operate on the water. The telephone system was used to 'pass on' vessels from district to district and to update officers of their impending traffic commitments. Such detailed information gave district officers advanced warning of upcoming busy periods, affording them the opportunity to arrange for extra labour to be put in place to reduce congestion around sequences of lock gates.³⁹ The

³⁶ TNA: CAB 45/205 diary entries, 5 and 6 January 1915.

³⁷ Henniker, *Transportation*, 17; TNA: PRO WO 95/3976B Director of Railways, Memorandum. Inland Water Transport, 4 January 1915. By September 1915 there were fourteen separate districts operating on the Western Front.

³⁸ TNA: PRO ZLIB 6/88 Midland Railway Train Control, 1914, p. 62. This system, first introduced in 1907, would also provide the standard operating procedure for the BEF's light railway network in 1917. See W.J.K. Davies, *Light Railways of the First World War: A History of Tactical Rail Communications on the British Fronts, 1914-18* (Newton Abbot: David & Charles, 1967).

³⁹ TNA: WO 158/851 History of IWT, pp. 45-6.

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whereabouts of each vessel was also relayed back to GHQ every night and recorded on a diagram board – a central component of the Midland Railway’s control system – giving Holland’s staff a daily, graphical illustration of the whereabouts of the fleet; such innovations aided decision-making in relation to the redistribution of craft and personnel as circumstances dictated.⁴⁰

By the end of June 1915, almost three months before Brown dates the initiation of a canal service on the Western Front, Holland’s department had provided transport for: 15,926 tons of supplies; 27,241 tons of road metal; 3,216 tons of miscellaneous supplies (including bridging materials and coal); and 628 officers and men had been evacuated from the battle zone by ambulance barge.⁴¹ By September, Holland could record with justifiable pride that requisitions for over 156,000 tons to be transported by IWT before the end of the year had been received, and that 1,200 tons were being carried daily over the northern waterways.⁴² In nine months the department had expanded from ‘one tug and thirty-four hired barges’ to control a fleet of over 270 vessels (with more on order) with a total capacity in excess of 38,000 tons. Holland, however, was not satisfied with these achievements. Following the separation of IWT from Twiss’ authority in October 1915,⁴³ and in direct contradiction of the reactive, ‘ad hoc’, pragmatic image of the BEF’s administration during the first half of the war as propagated by Lloyd George, Holland and his team would spend the next twelve months preparing IWT for the future expansion of both the directorate and of the demands which would be placed upon it. Far from being gripped by what Brown has referred to in another context as ‘anti-civilian phobia’ at this point in the war,⁴⁴ the continued growth of IWT – in terms of personnel (sanction for a sixth section of workers to join the five already in France was also obtained in October 1915)⁴⁵ and in the scope of its authority – demonstrates that the BEF’s senior administrators were far more open to the

⁴⁰ TNA: WO 158/851 History of IWT, p. 22; ZLIB 6/88 Midland Railway, pp. 17-20.

⁴¹ TNA: CAB 45/205 Inland Water Transport Corps, British Army France 1915. Summary of Organization and Development, pp. 6-7.

⁴² TNA: WO 95/56 Memorandum number 1, p. 9.

⁴³ TNA: WO 95/56 Memorandum number 2, 5 May 1916, p. 2.

⁴⁴ Brown, *British Logistics*, p. 89. Brown’s reference in this instance is to the termination of an experiment at the port of Boulogne, in which employees of the South-Eastern and Chatham Railway were responsible for the work of discharging ships, stacking supplies and loading trains within the port. Brown’s conclusion is based heavily upon the brief account of the experiment offered by Henniker, *Transportation*, pp. 91-2, both of which are called into question in C. Phillips, ‘Early Experiments in Civil-Military Cooperation: the South-Eastern and Chatham Railway and the port of Boulogne, 1914-15’, *War & Society*, vol. 34, no. 2 (2015), 90-104.

⁴⁵ TNA: WO 95/56 Memorandum number 2, p. 1.

possibility of applying outside expertise to the challenges of battlefield supply during 1915 than has previously been asserted. However, the process of converting this recognition into an integrated component of the Allied transportation system would expose the limits both of the BEF's freedom of action on foreign soil and of the perceived utility of a slow means of transport operating outside the 'traditional' supply hierarchy.

Expansion and restriction in the development of inland water transport, 1915-1916

Although the French and Belgian waterways comprised a vast network of navigable canals and rivers, the IWT began work in 1915 on just a small section connecting the ports of Dunkirk and Calais with the towns of Armentières and Béthune. Despite this limited zone of operations, the policy followed by Holland throughout his tenure as head of the service was one of 'looking well ahead and forecasting the probable requirements of the future'.⁴⁶ Such an outlook was by no means unique within the administrative ranks of the BEF. Sir Percy Girouard's report into transport arrangements for the British in October 1914 had as a core component the question of defining responsibility for supplying the BEF in the event of an Allied advance into Belgium.⁴⁷ Regardless of the prevailing school of thought within the directorate, however, for IWT the period between the separation of the command link to the Director of Railway Transport and the Battle of the Somme would not be one of steady and unbroken expansion. The restrictions placed on the service during this time demonstrate clearly the limitations of coalition warfare as the scale of the conflict increased, and also the difficulties inherent in the amalgamation of a new transport method into a pre-existing logistics system.

There were many reasons why Holland could write in September 1915 of a need to plan for the acquisition and employment of 'double, even treble, and possibly a still greater number of vessels' than the 330 at that time accounted for.⁴⁸ In the first instance, inter-Allied discussions under the umbrella of the Railways and Canal Commission had decreed three months earlier that, in the event of any advance in the zone containing the BEF, the responsibility for repair, maintenance, and use of the waterways in the area would be devolved upon the British.⁴⁹ Although Henniker's

⁴⁶ TNA: WO 158/851 History of IWT, p. 15.

⁴⁷ TNA: PRO WO 32/5144 Report on rail transport arrangements for the British Army on the continent by General Sir É. Girouard, p. 13.

⁴⁸ TNA: WO 95/56 Memorandum number 1, p. 9.

⁴⁹ TNA: WO 158/851 History of IWT, p. 64; Henniker, *Transportation*, pp. 94–101. Henniker acted as the British representative on the Commission, but unfortunately his account in the *Official History* only includes details of the agreements reached with

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official account does not record the outcome of the deliberations relating to the canal network, it is clear from Holland's diary that he had stressed to Henniker the importance of securing British control over the Belgian canals should the advance take place.⁵⁰ The pre-war agreement between the French and British had already begun to unravel, and Holland was quick to identify that the responsibilities for maintenance and operation of the waterways could not be divorced from control over the network.

A second reason given by Holland for promoting the expansion of the IWT service was financial. For cargo carried by the French railways on behalf of the BEF the British incurred a charge, whereas freight handled in British vessels would incur no cost to the Treasury.⁵¹ Furthermore, Holland predicted, the engagement of French workshops on war-related work, and the ongoing military recruitment of huge numbers from the French labour force, meant that the French stock of vessels was likely to be badly degraded during the conflict. Consequently, Holland observed:

It follows [that] if this is a correct forecast that at the end of the war, any vessels we may have will be of great value to replace losses, and will assuredly be bought by those, who then turn their attention to the restoration of commercial business, at prices which will, I confidently expect, recoup a large proportion of our outlay.⁵²

The most significant justification for expanding the role of IWT, however, lay in conjunction with the difficulties being experienced throughout 1915 at the docks under BEF control.

As demonstrated from the very outset of their use in France, IWT vessels drawn up alongside ships berthed in port could be used to eliminate the need for supplies to be landed on the quayside. Not only did this reduce the demand for space within the confined accommodation immediately surrounding the harbours, but stores transferred to canal barge would not require the use of rolling stock to transport them away from the ports by rail. Goods transported several miles inland by IWT allowed the diminishing number of wagons operating in northern France to be worked over shorter distances, leading to individual wagons returning to the depots

regard to the supply of railway equipment and the repair of railway lines in the event of an advance.

⁵⁰ TNA: CAB 45/205 diary entry, 25 February 1915.

⁵¹ The war diaries of the Quartermaster-General (QMG) contain abundant correspondence related to the financial arrangements between the two nations, a significant proportion of which concern railway-related expenditure.

⁵² TNA: WO 95/56 Memorandum number 1, p. 3.

at a higher frequency, and increasing the quantity of vital resources arriving at railheads. Furthermore, the extra capacity provided by IWT created the option to remove stores with a stable, predictable demand from the railways, freeing up rolling stock to respond to requests for more volatile stocks, most notably food and ammunition.⁵³

Consequently, as the shortage of rolling stock became 'serious' in the winter of 1915-1916, and congestion at the ports of Calais and Dunkirk threatened the despatch of trains and the turnaround of ships, the decision was taken to construct an IWT depot capable of handling goods to be removed from those ports. The goal of the project was to reduce the BEF's reliance upon the Channel ports, and on the railway communications that linked the ports with the wider French transport network. A suitable location for the depot was found at the junction of the Calais canal and the River Aa. Not only was the site within a day's journey of both Calais and Dunkirk, it had the added advantage of offering a separate return route for traffic from the latter, minimizing congestion at the locks and maintaining fluidity in the system.⁵⁴ However, as 1916 progressed and the BEF's expansion continued, Holland's ambitions for the site grew. Rather than simply alleviate congestion at the docks by loading direct from ship to barge, Holland envisaged the depot at Zeneghem as the French hub of a direct cross-Channel barge service which would – for whatever traffic could be despatched by barge – entirely eliminate the need to use the Channel ports at all. Not only would such a service help relieve some of the pressure on the limited dock space at the Channel ports, but would reduce the journey length for the rolling stock required to forward the goods to the front.

In full recognition of the fact that weather conditions in the Channel would restrict the frequency with which vessels could make the crossing, Holland wrote a memorandum on the subject on 29 April 1916. Following discussion in the Army Council, and despite the significant financial and material commitments required to bring the scheme into being, the project was unequivocally approved in London.⁵⁵ By early May, Colonel Collard was engaged in the 'very extensive' work of placing orders in Britain for the construction of craft suitable for operation both in the

⁵³ In March 1916, the QMG noted that 'the IWT are daily delivering [road] stone metal, engineering stores and materials, hay and oats' among other items, totalling approximately 2,000 tons per day. The majority of this was achieved 'without [the cargo] touching a road or railway'. See TNA: PRO WO 107/15 Inspector-General of Communications, General Correspondence, Maxwell to Clayton, 25 March 1916.

⁵⁴ TNA: WO 158/851 History of IWT, pp. 47-8.

⁵⁵ Brown, *British Logistics*, p. 127, TNA: WO 158/851 History of IWT, p. 56.

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Channel and on the northern waterways.⁵⁶ That such enthusiastic backing was given to the cross-Channel service, prior even to the breakdown of the transport network associated with the fighting on the Somme,⁵⁷ emphasises the high regard in which Holland's opinion was held at the War Office and GHQ. Clearly Holland's non-membership of the British Army's upper reaches did not cause his views to be ignored by the high command.

Despite the obvious advantages to the coalition of implementing such a service (not least for the overburdened French railways, from whom GHQ received its first request for rolling stock in February 1916),⁵⁸ permission to proceed with construction at Zeneghem was not automatically granted by the French authorities. Instead, work did not begin on the depot until 25 July 1916, almost a month into the Battle of the Somme.⁵⁹ Although the location of a suitable site and the accumulation of the required building materials were contributory factors, the chief cause of the delay lay in the fractious relationship between Britain and her host. Only after 'several proposals' and multiple meetings with the French was the site near St. Pierre Brouck 'eventually agreed upon' for the depot.⁶⁰ French insistence on retaining overall control of the decision-making process acted as a significant retardant on the growth of the directorate. However, even before discussions began over the quay at Zeneghem, French bureaucracy had served to frustrate Holland's ambitions for the IWT service, the proposal to reduce congestion at the port of Le Havre affording a notable example.

In October 1915 Holland had suggested that, in order to facilitate the discharge of vessels at Le Havre and reduce congestion at the port, barges could be loaded direct from the ships in dock and forwarded to Rouen via the Tancarville canal. The proposal was approved by both Maxwell (the BEF's QMG) and Clayton (IGC), but following 'protracted negotiations' the French authorities 'would not hear of the proposal although it would undoubtedly have done much to relieve the congestion

⁵⁶ University of Warwick Modern Records Centre, Papers of Sir William Guy Granet, MSS.191/3/3/51 Memorandum to Sir Guy Granet, 19 October 1916, p. 3; WO 158/851 History of IWT, pp. 56-8 details the specifications of the cross-Channel barges.

⁵⁷ Brown, *British Logistics*, pp. 109-134.

⁵⁸ This request led to 2,500 railway wagons being despatched to France. See Edmonds' introduction in Henniker, *Transportation*, p. xiii.

⁵⁹ Construction on the first quay, measuring 1,575 feet, was not completed until 14 October 1916. See TNA: WO 158/851 Appendix C IA, Particulars of Quays Constructed and Equipped by the Inland Water Transport, p. 1.

⁶⁰ TNA: WO 95/56 Memorandum number 3, 3 December 1916.

on the railways'.⁶¹ The relatively dispassionate language included in the post-war official report (which also claimed that 'the French authorities [had], at all times, given courteous, prompt, and ungrudging aid')⁶² lies in stark contrast to the tone in the documents produced by Holland in the immediate aftermath. In a memorandum written in May 1916 Holland dismissed the numerous reasons given by the French, which are sadly not elaborated upon, as 'unconvincing';⁶³ in his private diary he defaced the page charting the chrysalis of the idea with a note, scrawled in red pencil and depicting palpable frustration: 'Finally French refused permission for any British service'.⁶⁴

Whilst Holland was attempting to be proactive and planning for the expansion of the BEF's logistical capabilities, the French authorities appear to have been asking the BEF to take on a larger share of the burden of sustaining the force, whilst simultaneously acting to limit their ability to do so until absolute necessity intervened. This occurred in August 1916, when a chronic shortage of rolling stock resulting from the colossal demands of Verdun and the Somme led to severe congestion at Le Havre. Finally the French authorities agreed to the installation of a 'limited IWT service' taking material direct from ships at the port and conveying it to depots inland. Yet with the barges required to operate the service only able to transfer from the northern waterways and the River Somme via the Channel – a journey time of thirty-three days – it was not until 22 September that IWT began to receive goods from Le Havre.⁶⁵ As with the delayed start to the cross-Channel service centred on the depot of Zeneghem, it would not be the offensive operations of 1916 that would receive the benefit of Holland's foresight, planning and promotion of IWT over the first half of the war.

Yet to lay the blame for the lethargic exploitation of IWT in 1915-1916 purely at the feet of obstructive French authorities would be unwarranted, and creates a deceptive impression of the extent of logistical 'understanding' within the BEF as a whole prior to the Battle of the Somme. Although, as has been seen, there was a willingness to engage with IWT within the administrative services of the BEF, such openness was by no means universal. In this respect, the decision to sever the relationship between IWT and the 'established' transport divisions actually reduced the influence of Holland's independent directorate in decision-making at corps and army level, with

⁶¹ TNA: CAB 45/205 Summary of Organization and Development, p. 11; TNA: WO 158/851 History of IWT, p. 52.

⁶² TNA: WO 158/851 History of IWT, p. 16.

⁶³ TNA: WO 95/56 Memorandum number 2, p. 2.

⁶⁴ TNA: CAB 45/205 Summary of Organization and Development, p. 11.

⁶⁵ TNA: WO 95/56 Memorandum number 3, p. 2.

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negative implications for the efficacy of the BEF's supply operation as a whole.⁶⁶ IWT became in essence a 'watertight' directorate, capable of providing assistance to those services who actively requested it, such as the Director of Veterinary Services,⁶⁷ but incapable of promoting the wider employment of IWT to commanders accustomed to rail and road transport. District officers and Holland's assistant directors were responsible for 'keeping in close touch' with the commanders in their area, and for ensuring that local requirements were met, but there appears to have been little desire among corps and army officers to reduce dependency upon the faster method of transport until the French railways were incapable of meeting demand.⁶⁸

Individual formations, each desirous of obtaining the resources they believed were necessary to ensure the security and efficiency of their own units, were reluctant to embrace the canals. The relatively slow progress of the barges made IWT comparatively useless for urgent deliveries. In the absence of a centralizing authority to coordinate transport requests, and until the sheer volume of goods entering France made the identification of priorities a fundamental requirement for keeping the logistics system flowing, there was little IWT could do to persuade commanders to take a holistic approach and voluntarily subordinate their own requests for transport for the wider benefit of the BEF as a whole. The result was ludicrous. When the railways in the rear of the BEF were overloaded during the opening weeks of the Battle of the Somme, the supply of food and ammunition took precedence over that of stone for road repairs.⁶⁹ The 'deplorable state of the roads' soon became the 'chief source of anxiety for the Chief Engineer of Fourth Army, a development catalogued by an equally concerned Deputy QMG in a series of reports.⁷⁰

⁶⁶ The decision to separate the various transport directorates should not be used as evidence of a uniquely 'military' method of organization, however. As Taylor notes, 'ports, railways, canals [and] roads' were operated as independent services in the pre-war British economy as well. See M.G. Taylor, 'Land Transportation in the Late War', *Royal United Services Institution. Journal*, vol. 66, no. 4 (1921), 699-722 (p. 701).

⁶⁷ In June 1916 arrangements were made to commence a barge service for the evacuation of wounded horses as a result of an approach made to Holland by the Director of Veterinary Services. See WO 95/56 Memorandum number 3, p. 3.

⁶⁸ TNA: WO 158/851 History of IWT, pp. 23-4, 42.

⁶⁹ R.U.H. Buckland, 'Experiences at Fourth Army Headquarters: Organization and work of the R.E.', *Royal Engineers Journal*, vol. 41, no. 3 (1927), pp. 385-413, p. 389.

⁷⁰ *Ibid.* pp. 391-2; Imperial War Museum, Papers of Brigadier-General C.R. Woodroffe, 3/38/1/2 Notes and Reports (forwarded to QMG), June to November 1916.

Yet despite the shortage of vital engineering material reaching the BEF, during the same period IWT vessels were being utilized for the conveyance of road stone along the River Somme at the request, and for the use of, the French Army.⁷¹ In addition, as Holland would later reveal to Geddes, for all the unprecedented scale of demands generated by the fighting on the Somme, during the opening phase of the offensive Holland was reduced to returning barges requisitioned from the French to their civilian owners due to a lack of military work for them to undertake.⁷² Clearly then, regardless of the increase in tonnage conveyed by IWT during 1916, there remained spare capacity in the system. Of the 73,500 deadweight tons carrying capacity available in October 1916, Geddes recorded that the maximum quantity conveyed in any single month was just 69,000 tons. 'Each deadweight ton of capacity', Geddes observed, 'was not fully occupied once in the month... a great carrying capacity has been provided and no adequate use found for it'.⁷³ The man who, more than anyone else, had been responsible for providing that great carrying capacity was Gerald Holland, Marine Superintendent of the LNWR. The task of making adequate use of it would ultimately fall to Geddes himself the following year.

Conclusion

The colossal scale of demands placed upon the transportation services supplying the BEF during 1916 were such that IWT could only ever play a subsidiary role in their fulfilment. The position of the directorate as a scion of the established supply chain, coupled with the minor role afforded to the development of waterborne traffic in the pages of the *Official History*, have subsequently overshadowed the evolution of this small, under-exploited but well managed civil-military partnership. Men with no previous experience of the army, such as those obtained from the LNWR, were able to apply their skills to recognisably civilian tasks. Holland was incorporated into the command structure of the BEF, his views were sought out and acted upon despite their cost and resource implications, and he was given the freedom to focus all of his attentions on the improvement and expansion of IWT on the Western Front. He was able to source equipment and raise personnel at a rate capable of ensuring that IWT would constantly be in a position to respond effectively to the continued expansion of the BEF.

Despite this, Holland's proactive approach was unable to counteract the limitations caused by a lack of pre-war preparation between British and French officials, and it was hampered by the absence of a formal alliance structure to govern the expansion of the BEF's contribution to the land war. The abilities of Britain's transport experts,

⁷¹ TNA: WO 95/56 Memorandum number 3, p. 3.

⁷² Granet Papers, MSS.191/3/3/4 Geddes to Lloyd George, 15 September 1916, p. 2.

⁷³ Granet Papers, MSS.191/3/3/102 Memorandum by Sir Eric Geddes, 26 November 1916, p. 23.

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although recognized and respected by the majority of officers in France,⁷⁴ were only applied in 'penny packets' to the solution of problems identified in single links of the transport chain. Throughout 1915 and into 1916 there was neither the political will to broaden the scope of civil-military cooperation, nor the military imperative to establish long-term, 'semi-permanent' administrative structures in place of short-term 'tinkering'. Such localized responsibilities left individuals such as Holland incapable of negotiating successfully with an ally and host attempting to balance requests for further assistance with a desire to retain a position of superiority within the coalition. The resulting frustrations, coupled with the continued decentralization of transport control within the BEF⁷⁵ impaired the development of a coordinated, fully integrated, centrally directed logistics system on the Western Front. The 'unmistakable proof of the value, indeed the necessity of centralised control' had yet to surface.⁷⁶ It would do so astride the Somme, when the BEF finally engaged in sustained, material-intensive offensive operations, and would precipitate 'the reorganization of the whole service of transportation' rather than the small-scale, localized adjustments of the conflict's opening years.⁷⁷ Although Geddes would ultimately take the credit for that reorganization, in terms of IWT, Lloyd George's 'blue-eyed boy' was building upon substantial foundations.⁷⁸ It is important that the man who provided part of the blueprint upon which Geddes built the Directorate-General of Transportation, and who died following an illness contracted on active service in the winter of 1916-17, is not forgotten.

⁷⁴ Brown, *British Logistics*, p 87.

⁷⁵ TNA: WO 95/74 diary entry, 20 December 1914; TNA: WO 95/27 French to Kitchener, 18 January 1915; TNA: WO 107/15 Maxwell to Cowans, 18 July 1915.

⁷⁶ TNA: PRO WO 107/296 Report upon the Work of the Quartermaster-General's Branch of the Staff and Directorates Controlled. British Armies in France and Flanders, 1914-1918, p. 12.

⁷⁷ Taylor, 'Land Transportation in the Late War', p. 704.

⁷⁸ A.C. Geddes, *The Forging of a Family. A Family Story Studied in Its Genetical, Cultural and Spiritual Aspects and a Testament of Personal Belief Founded Thereon* (London: Faber & Faber, 1952), p. 230.