Wednesday 3 May 2006. **210HIS356**

Discuss the importance of the railway in the American Civil War.

A glance at a map of the United States in 1860[1] gives an idea of the geography and the scale of the region where the war was going to be fought: an area roughly a thousand miles in width, and about as much in length. In the East, near the coast, the two capitals, Washington and Richmond, some 75 miles only apart[2], but at the very border of their respective hinterlands, in a land striated by rivers almost parallel to the frontline, such as the Potomac, the Rappahannock or the James. In the West, the North-South axis of the Mississippi, the 'Father of the Waters', and its network of affluent rivers, such as the Ohio and the Cumberland, with the associated swamps, flood plains, and limited number of proper roads. In such a theatre, a technology that could connect distant locations and facilitate the transportation of food, forage, ammunitions and troops was bound to have a major impact. The railroads had been in existence since the 1830s, and had already been used in conflicts in the 1840s and 1850s in Europe and especially during the Crimean War and in Northern Italy, along with the telegraph[3]. However, to determine their importance in the Civil War, several different factors have to be considered: the level of development in the North and in the South at the beginning of the war, the way in which the United States and the Confederacy used their respective networks, and the associated strategies and tactics on both sides.

[1] See for instance *The American Civil War*, p.29.
[2] Ibid. p.37 Map showing the Eastern Theater of Operation, May 1861-June 1863.
[3] See *The Oxford History of Modern War*, p.215-216.

The Northern network was quite developed at the beginning of the war in 1861, with about 22,000 miles (mostly single track) employing 29,000 men[4]. Several private companies owned and operated the railroads, such as the Baltimore & Ohio, the Illinois Central or the Pennsylvania Railroad[5]. These companies, however, had begun to consolidate and integrate their networks, making interconnections easier, although this was by no means straightforward, considering that about eleven different gauges were in use, from 4'4.5" up to 6' (although the standard width would have been 4'8.5")[6], which meant that on a long trip it was common to transfer from one train to another. Because of the pre-war competition, there was an overcapacity of the network in term of roads and rolling stock, which would make it easier to adapt to the war's demands[7]. By 1860, railroads were beginning to overtake canals for the freight traffic, especially between Chicago and the West and the Atlantic Coast, although there were a lack of interoperability and warehouse capacity at many of the interconnection points[8]. The business was attracting talented engineers and managers, such as West Point graduates Herman Haupt (superintendent of the Pennsylvania Railroad) and George McClellan (a New York railroad president), or Daniel Craig McCallum (president of his own bridge company and railroad consultant)[9], and a lot of railway men were prominent in politics.

The South, with a 9000-mile network (mostly single track) employing 7500 men[10], started the war with quite a few disadvantages in terms of its railroads. Unlike the

[4] Fish, p.781.
[5] See Weber, ch.1 'At the Outbreak of the Civil War', pp.3-14.
[6] Fish, p.785.
[7] Murphey, p.327.
[8] Weber, ch.1
[9] Campbell, pp.72-73.
[10] Fish, p.781.

North, it had to import a large majority of the iron for the rails and its rolling stock. Factories, banks, foundries were lacking, and so therefore were the associated industrial managers[11]. The railroads were often of inferior quality, with wooden rails covered with a layer of iron, and not as well maintained as their northern counterparts. Like in the North, several private companies owned and operated the railroads, whose gauges varied, although most of them used a 5' width. Towns and states often financed railway development, but in a piecemeal and inconsistent way, and often cities were opposed to interconnections, to preserve the income of their restaurants and hotels[12],[13]! Globally, the operation of the railroads in the South was far less efficient than in the North.

The ways in which the United State and the Confederacy used the railroads were also starkly different. The North quickly realised how vital they were; Washington's only link to the rest of the Union was by rail through Baltimore in slave-owning Maryland, and in April 1861 the troubles caused by troops crossing this city underlined the necessity of central supervision, under Thomas A. Scott, the Pennsylvania Railroad president, and Andrew Carnegie, his chief assistant[14]. Almost all railroad presidents, however, agreed to cooperate with the government, which negotiated with them a common rate for the transport of supplies and troops, and only took over temporarily when required, such as during the battle of Gettysburg in July 1863[15]. In January 1862, an act was passed giving the president the authority to take military possession of all railroads, but it seldom had to

[11] Ramsdell, p.794.
[12] Ibid, pp.795-797.
[13] See Heath.
[14] Weber, Ch.III, 'Emergency Problems in 1861'.
[15] Ibid. Ch.IX 'Government Achievements in Regulation'

be used[16]. To operate captured enemy lines, the United States Military Railroads were created in 1862, under the supervision of McCallum and Haupt[17], whose Construction Corps soon became experts at repairing bridges and tracks, but also at destroying them! By contrast, the Confederate government never managed to impose its supervision on the southern railroad companies. The blockade and the interruption of imports from the North meant that maintaining the already underdeveloped tracks and rolling stocks was hugely difficult, and in addition earnings from trade were severely impacted[18]. The competing authorities of the states and the government in Richmond also contributed to the chaos, as for example happened when, in March 1863, governor Brown of Georgia vehemently opposed General Braxton Bragg's proposed seizure of the Western and Atlantic[19].

Many generals in the North understood the vital importance of the railroads, and worked in close collaboration with their civilian operators. Halleck supported Haupt, even against high-ranking military commanders who wanted to interfere with the railroads, and McClellan, a railroad man, was quite aware of the potential of the technology[20]. Building on his experience in the Virginia theatre, where railroads and bridges were regularly destroyed by retreating armies or by cavalry raids, Haupt improved the techniques of the Construction Corps, enabling feats of engineering such as the bridge over Potomac Creek (made of 'beanpoles and cornstalks' according to

[16] Murphey, p.328.
[17] See Campbell.
[18] See Ramsdell.
[19] Black, pp.523-524.
[20] Campbell, p.70. McClellan declared in 1861 that the construction of railroads 'introduced a new and very important element into the war, by the great

Lincoln) in 1862[21]. He also enunciated operation principles that ensured that the Union armies were well supplied during the war. In 1863, these were applied with tremendous success to the lines leading to Gettysburg. Sherman acknowledged that his Atlanta campaign, in 1864, would have been impossible without the railroads[22]. They had also been vital in the West, when Hooker's 20,000 troops were moved almost a thousand miles eastward after the defeat of Rosecrans at Chickamauga in September 1863[23]. The South never achieved a similar mastery of the railways; its greatest single achievement was also in 1863, when Longstreet's entire corps was transferred from the Army of North Virginia to reinforce Bragg[24].

Disruption and destruction of the bridges and tracks were tactics used by both sides, but initially mostly by the Confederates. Cavalry raids, under the leadership of men like Nathan Bedford Forrest in the West or J.E.B. Stuart in the East, would target depots or the railroads itself, whose rails would be twisted on a pile of burning ties. Saboteurs or irregulars would pull rails from under a passing train, causing it to derail, or obstacles would be put on the way. Retreating armies would tear up the roadbeds and take away the rolling stock[25]. Haupt convinced the military command to take drastic action to counter the destructive activities of the guerrillas, but also came up with even more destructive innovations to incapacitate railroad lines efficiently, such as the bridge torpedo or a rail-twisting device, which could be carried by cavalry units during raids[26]. Moreover, the

[21] Campbell, p.73.
[22] Campbell, pp.79-80.
[23] Weber, p.181.
[24] Black, pp.525-526.
[25] Campbell, pp.75-78.
[26] Ibid.

North soon became able to repair any destruction almost as fast as it occurred, as was the case around Atlanta in 1864, or to carry out massive devastation of the Confederate railroads, especially during Sherman's March to the Sea, causing a collapse in the supply system which would prove fatal. Lee's army starved in the East, although abundant supplies were available, because those could not be shipped.

The railroads were vital during the Civil War, as is also demonstrated by the fact that most of the major battles occurred at key railroad junctions: Manassas Gap, Vicksburg, Atlanta, and Petersburg for instance. Once the railroad supply routes were cut, retreat or surrender was inevitable. But if the railroads were critically important in the war, the war equally stimulated the railroads; in the North their business actually increased[27]! The improvement in operation, the drive towards consolidation and interoperation launched the railroads in their post-war expansion phase. New techniques of construction – and destruction – of tracks and bridges were developed, as well as innovations such as the hospital trains or the armoured cars. Steel rails and coal-burning locomotives, which had been tested during the war, became more widespread afterwards. All these lessons were certainly not lost on the European powers, and many would be put in application in 1914.

[27] See Weber, Ch.XIV, 'The War and the Railroads'

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