

The Blechingley Tunnel and the men who built it, 1840–1842

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The greatest tribute to the energies of the railway labourers are the monumental works they have left behind them. Interest in this remarkable body of men, 50,000 of whom were estimated to be at work in 1841, has been kindled by the work of T. Coleman and more recently by Patmore, Treble, Brooke and others¹. Coleman established the broad picture of the life and work of the railway labourer which is progressively being filled in by detailed local studies. Whilst most recent work has been concerned with the north of England, this paper focuses upon south-east England at an early stage of railway construction. The 1841 *Census* constitutes the prime source while valuable additional material is provided in F.W. Simms work on tunnelling, in which he draws upon his experience as resident engineer for a section of the South-Eastern Railway².

The Blechingley tunnel (fig 1) was a major constructional feature which necessitated the gathering together of a considerable body of men, in fact this was the largest concentration of railway workers in south-east England in 1841.



Fig 1 Blechingley tunnel. *Reproduced from F.W. Simms: Practical tunnelling, 1844*

RAILWAY CONSTRUCTION WORKERS IN SOUTH-EAST ENGLAND 1841

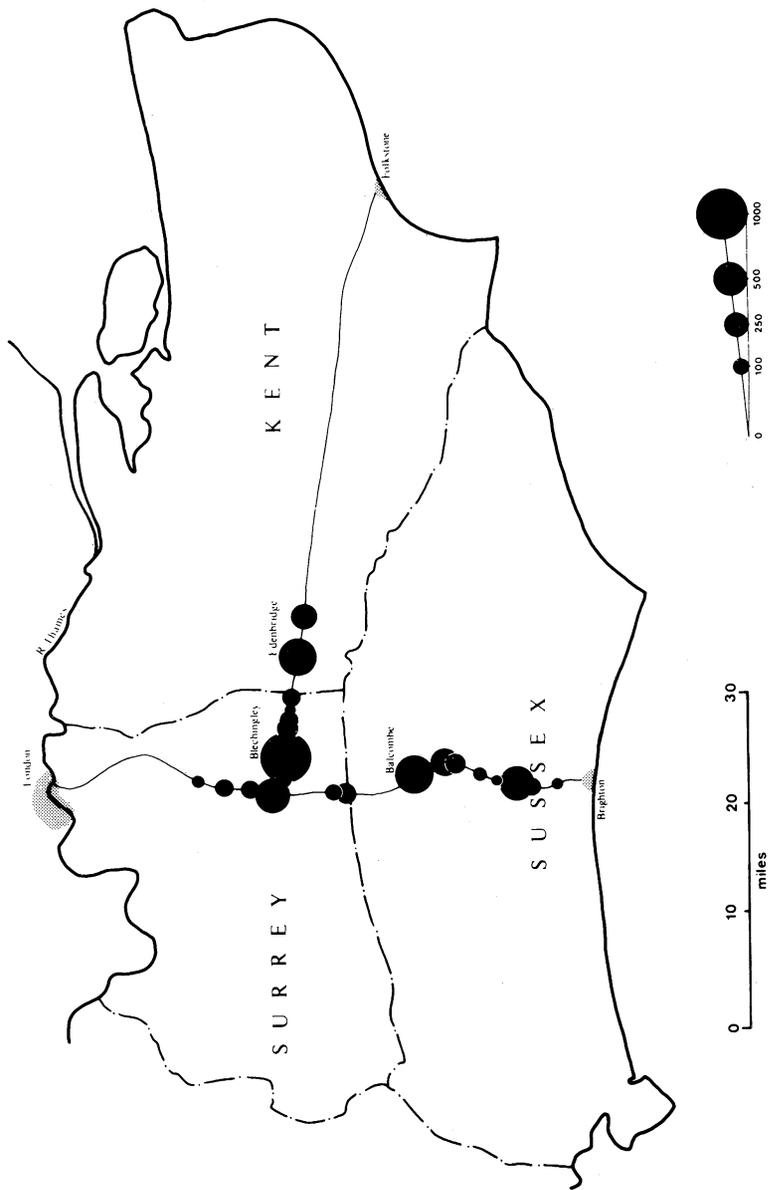


Fig 2 Railway construction workers in south-east England. Based on the 1841 Census, Enumeration abstract, Part 1

This paper seeks first to explain the need for the tunnel, the reason for so many men to be employed in its construction and attempts to portray the life and social characteristics of those who built it.

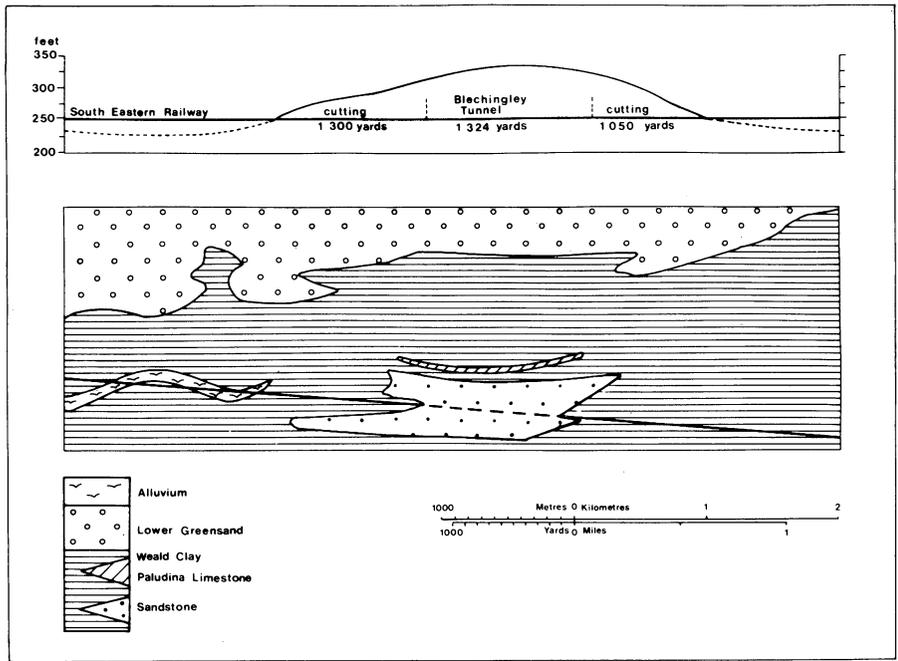
An examination of the published volumes of the *Census* for 1841 reveals that on Census night there were a number of railway construction groups at work in south-east England. These men were building the London, Brighton and South Coast and the South-Eastern Railway, from its junction with the Brighton line at Redhill, to Folkestone. Whilst one may have grave reservations about placing too much reliance upon the footnotes in the published volumes of the *Census*, in the absence of other quantifiable data they give some indication of the relative size and distribution of the groups of railway workers at one point in time. It must be said that there were variations in the numbers employed from time to time, as the Rev J.H. Broome pointed out in a letter to the *Railway Times* in 1840:

‘The number of labourers employed on the London and Brighton Railroad between Worth and Haywards Heath (a distance of eleven miles) varies considerably; two months since they amounted to 1,600 though at the present time there are little more than 1,000. But the harvest being now over, and the weather becoming more settled, the number is again rapidly increasing³.’

Spatial variations in the numbers of workers were also considerable. The map (fig 2) draws attention to the fairly even spread of activity on the Brighton line and its concentration in the western section of the South-Eastern route, especially the large numbers employed at Blechingley. To understand why so many were working at Blechingley it is necessary to look back to the process of route selection.

During August 1836, William Cubitt, engineer to the South-Eastern Railway Company, was actively engaged in establishing the levels for the section of the line which was to pass through Tilburstow Hill near the village of Blechingley. In September Cubitt reported to the Directors of the Company that he had modified his plans to maintain the gradient and reduce the amount of tunnelling by using the pass at Godstone, and that this would mean embanking, together with a tunnel of not more than a mile at Oxted⁴. The route which Cubitt surveyed from Redhill to Folkstone did not involve crossing major relief features. However, in order to maintain the planned gradient and a direct route line, the route passed through one of the resistant lenses of sandstone in the Weald Clay at Blechingley, which constitutes Tilburstow Hill (fig 3). The resident engineer, F.W. Simms, was later to describe the hill in these terms: ‘... the Weald Clay at this place is indurated into a shale or bluish bind, and being full of joints and faults, caused much difficulty in the work ... the strata lying as it were in heaps at almost every angle ... besides which a detached mass of sandrock lay across my path, near the top of the tunnel⁵.’ These geological problems, together with the difficulties associated with excavating through, ‘the blue clay of the Weald’, which became swollen when exposed to the air and so exerted considerable pressure on supports, etc, go some way towards accounting for the large amount of labour used in excavating the Blechingley tunnel and the cuttings either side of it.

The excavation works began with the sinking of twelve shafts, which com-

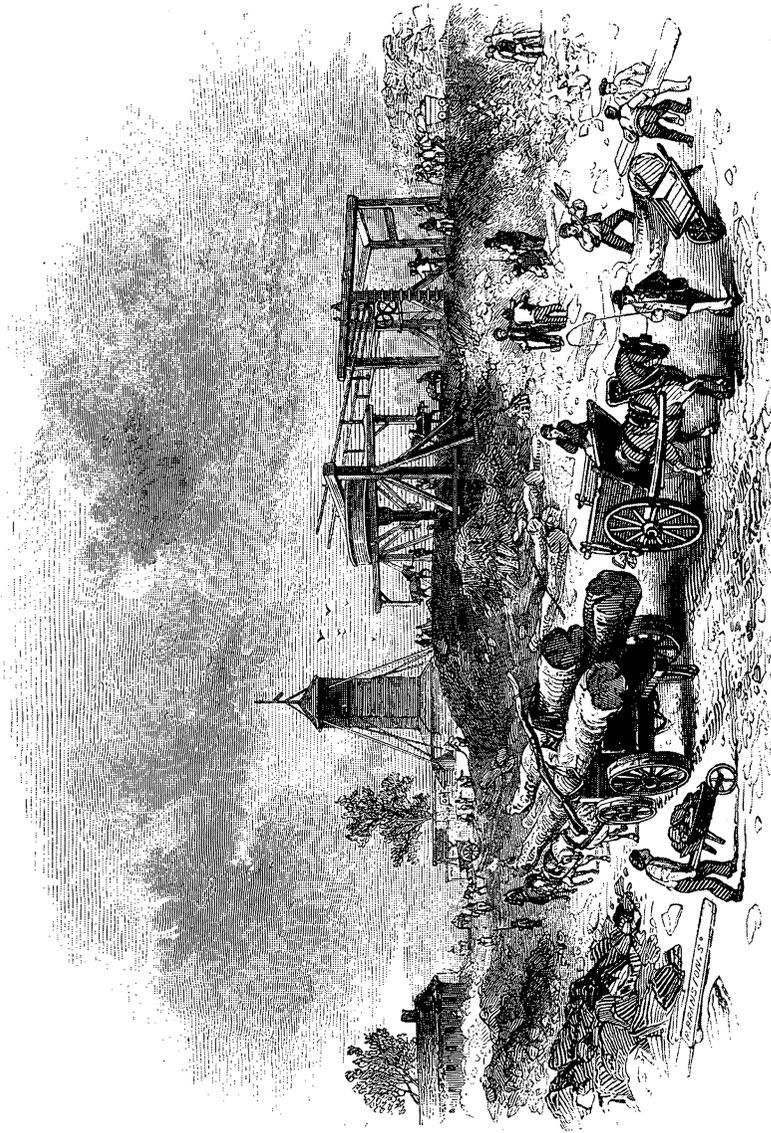


Cuttings and tunnel at Blechingley on the South Eastern Railway

Fig 3 Cuttings and tunnel at Blechingley. *Based on information in Geological Survey one-inch map sheet 285 (Reigate), by permission of the Director, Institute of Geological Sciences, London SW7*

menced in August 1840 and continued until February 1841. By this time other preparations for starting the tunnel itself had been made, including the erection of horse gins above each shaft (fig 4). The railway was opened to the public on 26 May 1842. The summer of 1841, when the Census was taken, was a period of considerable activity at Blechingley. In June 1841, 185 yards were completed; in July, 264 yards; in August, 228 yards⁶. In February, as tunnelling commenced, the labour force was augmented by order of the Board of Directors who 'requested Mr Cubitt to take such steps as under all circumstances he may think advisable to put additional workmen and materials on the Godstone division, contract no 2.'⁷

The organisation of work at the tunnel was similar to that described for other railway excavation works⁸. The resident engineer put out sections of the tunnel to contractors who in turn paid sub-contractors or gangers who were responsible for, 'all manual and horse-labour, candles, gunpowder, working tools etc'⁹. Despite the relatively high wages paid to the workers, the profits of the contractors were said to be of the order of 8½%.¹⁰ In comparing the rates paid to miners and labourers at the Blechingley and the later Saltwood tunnels, 6/- and 3/6d and 5/- and 3/3d per day respectively, Sims explained, 'because so



THE WORKS AT BLECHINGLEY TUNNEL.

Fig 4 The works at Blechingley tunnel. Reproduced from F.W. Simms: *Practical tunnelling*, 1844

many similar works were proceeding at the time the former tunnel was made, whereas two years later no such demand for workmen existed'.¹¹ This tends to confirm the supply and demand pattern advanced by Treble, who suggested that daily wage rates were falling during the late 1840's after an early rise between 1830 and 1846.¹² The considerable differences in wage rates between labourers and miners, bricklayers and carpenters indicates that there were very real material differences between the skilled and unskilled workers, although all lived in close proximity in the huts along the line of rail. The ratio of skilled to unskilled men varied. There were as many labourers as miners, but for every bricklayer there were two bricklayers' labourers. These wage rates might also be compared with the pay of agricultural workers in the southern counties which a correspondent of the *Railway Times* in January 1840 put at 1/6 to 2/3d per day.¹³ Clearly, despite the living and working conditions of the railway labourer, there were considerable financial inducements to encourage men to leave the land in favour of railway construction work.

The Enumerators' Schedules for 1841 provide very little information concerning the origin of the railway workers due to limitations in the scope of the enquiry. However, nearly all gave their place of birth as the County of Surrey, supporting Clapham's view that navy gangs tended to recruit locally, which is also endorsed by Brooke's study of navvies on the Pennines.¹⁴ Whereas Irish navvies were employed in considerable numbers in the north of England, there were very few employed at Blechingley, although they formed their own small community living in adjacent huts.¹⁵

Most of the navvies at Blechingley lived, 'on the side of the railroad . . . in the tunnel, the open cutting and the brickyards of the South-Eastern line'.¹⁶ Those that lived near the construction works are easily identified, but some were also accommodated in the settlement of Blechingley itself. Thus, for example, the Plough Inn contained the landlord and his family together with three miners, ten brickmakers and six labourers.¹⁷ Excavators, labourers and bricklayers were scattered throughout the town, although, as Patmore suggested for a similar situation in Knaresborough, it is impossible to say with certainty that they were employed by the railway, it is highly likely that they were.¹⁸ However, in this case the vast majority of railway workers and their dependants lived on the line of rail. The minutes of the Directors of the Company are almost silent concerning the navvies they indirectly employed; it cannot be established whether or not the Company paid for the construction of their huts as was the case on other lines.¹⁹ In his evidence to the 1846 Select Committee Peto described a system in which the Company put up barrack rooms which were let to a man and his wife who took in about twenty-five men allocated by the agent; the wife cooked for them and was paid 1/- per week by her lodgers.²⁰ The Enumerators' Schedules suggest that a similar pattern was found at Blechingley tunnel. Approximately 66% of households consisted of a man and his wife, usually in their late twenties, with one or two children under the age of five together with 10–20 railway workers. About 27% of households were purely family groups and the remaining 6% consisted of male railway labourers. Differentiation in pay between the skilled and unskilled was reflected in segregation in residence. The huts were inhabited by groups of labourers, bricklayers or excavators; occasionally a mixed household occurs but these only rarely include labourers among their number.

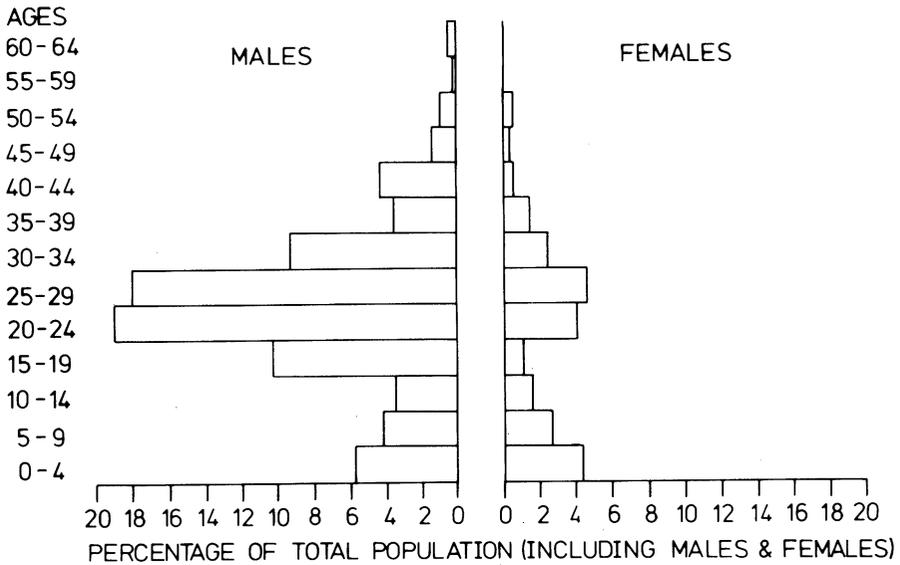


Fig 5 Age-sex pyramid for railway construction workers and their dependants working on the South-Eastern Railway at Blechingley, 1841. *Based on the Enumerators' schedules, 1841 Census*

The age-sex structure of the workers at Blechingley and their families is shown in fig 5. Although in many cases the 1841 Census Enumerators rounded the ages to the nearest five, here there is no evidence in the data for this. This community of railway workers was very clearly predominantly male and chiefly young, males aged 15–34 accounting for 55% of the total population. Females aged 20–34 were also a significant group with their young families in the 0–14 categories, in fact 17% of the population were aged 9 years or under. Whether or not all the women were wives is not altogether clear from the Enumerators' Schedules. Wilson's evidence to the 1846 Select Committee concerning the Swaffen and Dereham line throws some doubt upon this: 'not many have their families with them ... they have frequently what they call their wives with them'.²¹ There were very few older workers at Blechingley, only 0.7% were aged 60 years or over, which contrasts markedly with Brooke's evidence from the Pennines where the values for this age-group varied between 1.8 and 6.1%. In fact the workers at Blechingley were generally younger than those considered in Brooke's study.²²

The pattern of life of the railway worker is more difficult to establish. There are occasional hints at its more violent side. In March 1841, five additional constables were appointed to the Godstone section of the line and in July of that year the Company decided to, 'prosecute against those committed for the manslaughter of John Thoughton'.²³ Examination of the Quarter Session's Records for the period during which the tunnel was being excavated revealed

no cases which could clearly be ascribed to the Blechingley navvies. Work was organised in shifts which included Sunday working, a practice which was brought to the attention of the Directors who wrote to the engineer requesting him not to allow Sunday work except under exceptional circumstances. Mr Simms replied that the work would be delayed and that real dangers might result if newly excavated parts of the tunnel were left without supports, going on to say: 'I apprehend that morality would not be improved by a change just now in the tunnel . . . besides the chances of the men who were thrown 'out of shift' getting to the public house and not coming to hand regularly when wanted'.²⁴ The limited concern of the Company for its workers took a more practical turn when they voted £50 to the Blechingley Sick Fund.²⁵ The Sick Fund is indicative of another side of navy life, the concept of self-help. F.W. Simms commented:

'Where a large body of men are collected together as upon the works of a tunnel, there will be sure to arise considerable sickness among them, as well as occasional accidents to provide for, and defray the expenses of the necessary medical attention etc: it is the usual practice to raise a fund by means of a small contribution from the weekly earnings of everyone employed upon the tunnel.'²⁶

Each man employed upon the tunnel paid sixpence a week to the Fund and received benefit if taken ill; if he died his contributions were passed on to his next of kin.

Records relating to the men who constructed the tunnel are few but from these limited sources one can see that this group had an identifiable age structure, a common mode of living and despite its transitory existence, some of the elements of an ordered society. The two principal questions posed by Treble, how many navvies were there and what was the nature of their work are partially answered here. Coleman also suggested that the navy community was distinctive. Something of that identity has been caught but much is left unsaid, because of the paucity of evidence. The pattern that emerges suggests that in most respects the workers at Blechingley were similar to those described in other local studies. Too often the available evidence concerning the life of the railway labourer does not lend itself to quantification and one is left with colourful descriptions of navy life which may or may not be correct. A contemporary observer, the Rev J.H. Broome, who was working amongst the labourers on the London and Brighton line, made a plea for objectivity in 1840:

'With respect to the general character of these men, though depraved as it is, it has appeared to me that many come to wrong conclusions respecting it. Their noisy, profane, and intemperate mirth obtrudes itself constantly on the attention . . . we cannot wonder that when loosed from toil, they should seek for relaxation and enjoyment in any mode that presents itself. The wrong conclusions which many form as to the bad character of the men arises only from report, without observing whether such report is true or false'.²⁷

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- 21 *Select Committee on Railway Labourers*, op cit Evidence of Mr. Wilson, Q678
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