

**The anatomy of a navy community: Blaen-y-Cwm,
the Grwyne Fawr reservoir and its builders,
1912-1928**

EMA for
A329: The making of Welsh history

by

Simon Wragg

May 2023

Words: 7418

Table of Contents

List of Figures		3
Introduction		4
Chapter One	Blaen-y-Cwm compared	10
Chapter Two	Blaen-y-Cwm and the 1921 Census	23
Conclusion		40
Appendix 1	Timeline for the construction of Grwyne Fawr reservoir	43
Appendix 2	1921 Census Blaen-y-Cwm raw data	44
Bibliography		53
	Primary sources	53
	Secondary sources	54
	Websites visited	57

List of Figures

Figure 1: South Wales, the Black Mountains, Grwyne Fawr Reservoir and Blaen-y-Cwm	5
Figure 2: Total population by age	25
Figure 3: Population of working age	26
Figure 4: Gender distribution	27
Figure 5: Working age gender distribution.....	27
Figure 6: Male population marital status.....	28
Figure 7: Female population marital status	29
Figure 8: A&DWB employees by occupation type	30
Figure 9: Dwelling occupancy	33
Figure 10: Nationality by birth.....	35
Figure 11: Working age population nationality by birth	35
Figure 12: Distance from place of birth of working-age males.....	38

Introduction

Between 1910 and 1928 the Abertillery and District Water Board (A&DWB) was responsible for the construction of the Grwyne Fawr reservoir in the Black Mountains, on the border between the erstwhile counties of Breconshire and Monmouthshire. A temporary settlement for workers and their families was built at Blaen-y-Cwm, in the Breconshire parish of Llanelieu two miles downstream from the reservoir site. Had the settlement not been built, considering its remote location, it is unlikely that a sufficient labour force to construct the reservoir could have been recruited. Figure 1 shows the location of the reservoir and settlement. The term ‘navvy’ derives from the ‘navigators’ who built canals and describes the labourers who worked on large civil engineering infrastructure projects from the late eighteenth to the early twentieth centuries¹. Common across Britain, several temporary navy settlements were also built in Wales, including at Portskewett, Monmouthshire, housing workers on the Severn Tunnel and in Radnorshire, for the Elan Valley reservoirs.²

¹ Michael Morris Killanin, ‘Towards an archaeology of navy huts and settlements of the industrial revolution’, *Antiquity*, Vol. 68, Issue 260 (1994).

² Robert Gant, ‘Continuity and Change in Portskewett: An interpretation of the 1901 Census Returns’, *Gwent Local History*, (2006) pp. 41-54; Gary D. Holt, ‘Historical British antecedents of innovative construction project organisation and social structures’. *Construction innovation*, Vol.16 (1), (2016), p.46-66.



Figure 1: South Wales, the Black Mountains, Grwyne Fawr Reservoir and Blaen-y-Cwm³

Following an examination of the historiography of navvies, Chapter One of the study will investigate briefly why the Grwyne Fawr reservoir and the Blaen-y-Cwm settlement were built, which was fundamentally to meet the demand for a water supply for the increasingly industrialised and urbanised Western valleys of Monmouthshire. It will also consider the difficulties faced in establishing the Board. The main body of Chapter One examines earlier navy settlements and compares them with Blaen-y-Cwm. For example, early navy settlements were entirely unregulated, whereas the Act to establish the A&DWB included stipulations for the Board to reimburse Breconshire County Council for the provision of medical care, education for workers' children and for a police presence. The consultant engineer also reported on the increased administrative burden for the contractor of the implementation of the National Insurance Act (1911).⁴ In addition to living conditions and legislation, using newspaper

³ Reproduced with the permission of the National Library of Scotland. Available at: <https://maps.nls.uk/geo/explore/#zoom=12.4&lat=51.97896&lon=-3.05056&layers=255&b=11> . Accessed 8 May 2023.

⁴ Baldwin Latham, 'Engineers Reports for Abertillery & District Water Board (1909-1914), 23 July 1912'.

reports from across the period, this chapter will also look at how workers were perceived by contemporary society.

A significant motivation for the study is the recent public availability of the 1921 Census of England and Wales.⁵ Using original census returns, Chapter Two will analyse key aspects of the Blaen-y-Cwm community, including age, gender, employment profiles and household types.⁶ In addition, an assessment will be made of whether Blaen-y-Cwm developed a Welsh identity. Finally, using area of origin and children's birthplace, basic migration patterns will be assessed to consider the extent to which its residents could be considered itinerant, a recurring trope of the navy community.

Looking at the available historiography, Killanin suggests a four-stage overlapping timeline of navy settlement morphology that broadly coincides with major infrastructure projects in Britain.⁷ First there was the canal building stage (1760s to 1830), next building the railway network (1830s to c1880) and third, major municipal public health projects, notably reservoirs (1880s to 1930s). By the time of Killanin's fourth stage, road building (1930s to present), improved transportation and mechanisation had reduced the need for large temporary settlements and this period is therefore out of scope for this study. Little has been written on navvies during the canal-building stage, probably due to a paucity of primary sources, and much of the historiography focuses on those employed in building railways. Railway navvies were key to the transformation of Britain from an island of slow, agricultural villages into a

⁵ The 1921 Census of England & Wales was released on 6 January 2022 and is available at: <https://search.findmypast.co.uk/search-world-records/1921-census-of-england-and-wales> (NB subscription required for full access).

⁶ Household type refers to housing for nuclear families or dormitory-style accommodation.

⁷ Killanin, 'Towards an archaeology of navy huts'.

fast, urban, industrialised nation.⁸ Later public health legislation recognised the requirement for the provision of sewerage systems and a clean water supply for an increasingly urbanised population.⁹ Without navvies, none of these infrastructure projects could have been completed yet, as a distinct sub-culture, they were often feared, stigmatised or, at best, misunderstood.

Key monographs include Terry Coleman's *The Railway Navvies* and Dick Sullivan's *Navvyman*.¹⁰ Ayres suggests Coleman perpetuates a negative perception of navvies, concentrating on their reputation for drunkenness and violent behaviour, whereas David Brooke's *The Railway Navy: "That Despicable Race of Men"* treats the history of the railway navvies more sympathetically.¹¹ Brooke also interprets census data, including the different places of children's birth, which is used as a methodology in the census analysis of Blaen-y-Cwm. While none of these works contain significant information about navvies in Wales, they each provide useful evidence against which the experiences of the residents of Blaen-y-Cwm can be compared. For example, early navvies lived in 'sod huts and shants' rather than purpose-built huts and they were often exploited by their employers who operated the 'truck system', where employees were paid not in cash but in tokens that could only be used in company

⁸ Bryan John Ayres, 'Community and Identity: Late Victorian Navvies', *Family & Community History*, Vol. 23/3, (2020), pp. 169-181; James Chanos and James Spellman, 'George Hudson and the 1840s Railway Mania', *Sage Business Cases*. (2017).

⁹ John Elliott, 'The provision of water and sewers', *The Industrial development of the Ebbw Valleys 1780-1914*, (University of Wales Press, 2004).

¹⁰ Terry Coleman, *The Railway Navvies* (London, 1975); Dick Sullivan, *Navvyman*, (1983).

¹¹ David Brooke, *The railway navy: "that despicable race of men"*, (1983); Bryan John Ayres, 'Navvy communities and families in the construction of the great central railway London extension, 1894-1900', PhD thesis. (Warwick, 2015). Available at: <http://go.warwick.ac.uk/wrap/69543>. Accessed 10 April 2023; Henry Weisser, 'Reviewed Work: The Railway Navy by David Brooke', *Albion: A Quarterly Journal Concerned with British Studies*, Vol. 16, No. 3 (1984), pp. 309-311.

stores.¹² Although limited in number, journal articles provide a selection of secondary sources on navvies, including by Ayres, 'Community and Identity: Late Victorian Navvies' and Gant, 'Continuity and Change in Portskewett: An interpretation of the 1901 Census Returns'. Brooke has also written several articles including 'lawless navvies' and 'the railway navy, a reassessment'.¹³

Turning to Wales specifically, peer-reviewed articles such as Gant's previously mentioned paper on Portskewett, together with Gary D Holt's 'Historical British antecedents of innovative construction project organisation and social structures' both shed light on navy settlements in Wales.¹⁴ In addition, several books have been written by local historians on the construction of reservoirs, each of which discuss associated navy settlements. These include David Tipper's *Stone and Steam in the Black Mountains* on Grwyne Fawr reservoir and *The Talybont Saga*, on Talybont reservoir, which are both rich in anecdotes, *The Building of the Elan Valley Dams* by Rita Morton, *The Elan Valley Railway* by C W Judge and *Elan* by E Anne McBride. Furthermore, several of the sources discussed, together with *Love @ Work* by Randall, Jump and Weaver, examine the role of the Navy Mission Society. Referring to conditions in the nineteenth century, Coleman comments that 'railway companies were more inclined to pay for missionaries who would try to keep them [navvies] orderly than for hospitals to treat the exceptionally high rate of injury they endured'.¹⁵

¹² Sullivan, *Navvyman*, Ch.8; Naomi Brennan, 'Working on the Railway: The Risehill Tunnel Navy Camp, Cumbria', *Industrial Archaeology Review*, 37, (2), (2015) pp. 99-10.

¹³ David Brooke, 'The railway Navy – a reassessment', *Construction History*, Vol. 5, (1989) pp. 35-45; David Brooke, 'The 'lawless' navy: a study of the crime associated with railway building', *The Journal of Transport History*, (1989), Vol. 10, Iss. 2, pp. 145-165.

¹⁴ Holt, 'Historical British antecedents'.

¹⁵ Terry Coleman, 'The men who dug England's railways', *New Society*, (1965); pp. 151-154.

Primary source material relating to Grwyne Fawr reservoir and the Blaen-y-Cwm settlement is also available, including the Blaen-y-Cwm school log book, Engineer's Reports to the A&DWB, together with minutes of their meetings.¹⁶ For the comparative assessments in Chapter One, the 'Report of the House of Commons Select Committee on Railway Labourers and Labourers on Public Works' (1846) provides extensive evidence on workers' conditions in the mid-nineteenth century.¹⁷ Across the period, contemporary newspapers also provide a useful resource, although their reports are often sensationalised and critical of navvies. For example, a search of the word 'navvy' on the National Library of Wales 'Welsh Newspapers' database over the period 1840-1919 returned over 14,500 results, the vast majority of which are negative, often reporting arrests for drunkenness, brawling and theft.¹⁸

Navvies were essential facilitators, first in the development of Britain's transport infrastructure, then in the construction of major public health projects, yet their essential contribution has often been overlooked. Existing historiography predominantly considers navvies' experience in England and Scotland and there is little academic research on navvies in Wales. Whilst the focus of this study is on the period toward the twilight of the navy era, it is hoped that it begins to address that shortfall, especially through the analysis of data from the 1921 Census.

¹⁶ Available at Powys and Gwent Archives respectively.

¹⁷ Parliament, House of Commons. Select Committee on Railway Labourers, *Report from the Select Committee on Railway Labourers; Together with the Minutes of Evidence and Index*, Reports from Committees., vol. 9, sess. 22 January-28 August 1846. Available at: <https://www.jstor.org/stable/60241868> . Accessed 15 March 2023.

¹⁸ The National Library of Wales, *Welsh Newspapers*, search results on 'navvies'. Available at: <https://newspapers.library.wales/search?range%5Bmin%5D=1804&range%5Bmax%5D=1919&query=navvy&min=1804&max=1919>. Accessed 27 April 2023.

Chapter One Blaen-y-Cwm compared

Before comparing the lives of residents at Blaen-y-Cwm with earlier navy settlements, the study first considers why the Grwyne Fawr reservoir was needed. Britain's rapid industrialisation and associated urbanisation came at a price. Housing, sanitation and access to a clean water supply was often poor, and diseases including cholera and typhoid were rife.¹⁹ Pritchard quotes Hassan and Taylor saying, 'the improvement of water supplies was a central component of the response to the public health problem of this period'.²⁰ Increasing government involvement began with the Public Health Act (1848), but the Act was permissive and many urban areas did not adopt its powers, not least because of the associated financial burden of its implementation. 'There was also a widespread desire to limit the role of central government, and especially to avoid any interference with market forces'.²¹ Nevertheless, efforts to improve sanitation and provide clean water burgeoned over subsequent decades and led to Killanin's third period of navy settlement morphology, 'Municipal Projects (1880s-1930s)', which eventually included Grwyne Fawr reservoir and Blaen-y-Cwm.²² Central government later put in place a stronger legal framework for public health with the Local Government Act (1872) and the Public Health Act (1875) and municipal authorities undertook more than 300 reservoir schemes during the late nineteenth and early

¹⁹ Simon Gunn, 'Urbanization', *A Companion to Nineteenth Century Britain*, ed Chris Williams (2006), p. 241.

²⁰ John Wyn Pritchard, 'Water Supply in Welsh Towns, 1840–1900: Control, Conflict and Development', *The Welsh History Review*, Volume 21, Number 1, (2002), p. 27.

²¹ Deborah Brunton, 'Cities disease and health', *Confidence and crisis, 1840-1880*, ed. Donna Lofthouse, (Open University, 2017). Block 2, Ch 13, p. 305.

²² Killanin, 'Towards an archaeology of navy huts'.

twentieth centuries, providing valuable employment for the navy community.²³ Pritchard asserts the ‘transformation in public health reform was revolutionary and the availability of a pure and continuous water supply was the *sine qua non* of the urban habitat’.²⁴ However, implementation was a local commitment, to be funded by local rates and the complexity and magnitude of the civil engineering required was often far in excess of the capabilities of local government, both financial and managerial. In Monmouthshire’s industrial valleys the divided organisation of local government stymied progress towards a solution and, by the early 1900s, the area was amongst the most disease-ridden in Britain.²⁵ Communities at the head of the valleys were reluctant to help pay for sewerage provision downstream and those in rural eastern Monmouthshire did not wish to subsidise infrastructure for the industrial mining valleys to their west. In addition, unlike the flourishing industrial cities of England, such as Birmingham, the industrial valleys of Wales lacked a strong middle class and had an upper class that had abdicated its responsibility.²⁶

When Monmouthshire County Council (MCC) outlined plans for a Bill to Parliament for a reservoir at Grwyne Fawr a contemporary trade journal commented, ‘this is rather an ambitious project and it will be interesting to see how it is regarded by the parties who will be affected by it’.²⁷ The MCC presented the Bill in 1909 but local opposition

²³ Elliott, ‘The provision of water and sewers’ p. 154; Sullivan, *Navvyman*, p. 60-61.

²⁴ Pritchard, ‘Water Supply in Welsh Towns’. p. 24.

²⁵ Elliott, ‘The provision of water and sewers’ p. 158.

²⁶ Elliott, ‘The provision of water and sewers’ p. 158.

²⁷ Anon., ‘Projected water legislation for 1908’, *Journal of Gas Lighting, Water Supply, &c*, 3 December 1907. p. 699. Available at: https://archive.org/details/sim_gas-journal_1907-12-03_100_2325/page/698/mode/2up?q=%22Grwyne+Fawr%22&view=theater. Accessed 28 February 2023.

was strong, including from the Marquis of Abergavenny, Breconshire County Council, Tredegar Urban District Council and Nantyglo and Blaina Urban District Council. Perhaps not surprisingly, the Bill failed. However, the following year, a joint bill by Abertillery, Abercarn, Risca and Mynyddislwyn to establish the A&DWB and build the Grwyne Fawr reservoir was successful, receiving royal assent on 3 August 1910.²⁸ Elliott describes the venture as 'both the most extraordinary civil engineering feat in the history of the Ebbw valleys and a major planning disaster, costing four times its original estimate and taking over twenty years to build'.²⁹ Appendix 1 provides a timeline for the construction of the reservoir. In January 1912 the Board appointed William Underwood & Brother, of Dukinfield, Lancashire, as contractor, but throughout their tenure they struggled to recruit workers, not least because adequate accommodation had not yet been built at Blaen-y-Cwm. Recruitment suffered further with the outbreak of war in 1914 and all work was suspended between December 1915 to May 1919. The contract with Underwood was formally terminated on 1 December 1916, with the Board thereafter planning to employ direct labour to complete the works.³⁰ The Board was forced to return to Parliament on four occasions and the works were eventually completed in 1928, providing employment opportunities for a variety of workers for a period of 18 years.

In stark contrast to observations on early nineteenth century navy settlements, in 1928 the *Western Mail* described Blaen-y-Cwm as a 'Navvies Paradise' and the

²⁸ Tipper, *Stone and Steam*, p. 16.

²⁹ Elliot, *Industrial Development*, p. 161.

³⁰ Tipper, *Stone and Steam*, p. 29, 39.

'romantic site of Abertillery's £1,000,000 reservoir'.³¹ There is significant evidence in the historiography of navvies to illustrate this contrast. Coleman estimated that in 1846, at the peak of 'railway-mania', 200,000 Navvies were working on around 3000 miles of new railway line.³² Killanin identifies navvies of this period as a recognisable sub-culture within the working class who tended to live outside mainstream society, moving from contract to contract and living in discrete temporary communities.³³ Brooke offers a more nuanced interpretation, observing that where available, local labour was recruited, and, if there was existing rentable accommodation, workers often preferred this to purpose-built temporary settlements.³⁴ Whichever view one favours, as will be discussed, there is no doubt that the rapid influx of large numbers of unaccompanied men could disrupt the equilibrium of hitherto quiet bucolic communities. The House of Commons Select Committee Report commented, 'Its suddenness and its temporary concentration at particular localities, often spots before but thinly inhabited, have created or developed evils, touching both the welfare of the labourers employed and the interests of society'.³⁵

It was in remote areas, without sufficient existing local accommodation, that temporary settlements were provided by contractors to retain their workforce, especially on lengthy projects such as tunnel excavations and viaducts.³⁶ These buildings were

³¹ Anon. 'Navvies' Paradise at Blaenycwm', *Western Mail*, 21 March 1928, p. 9. Available at: <https://search.findmypast.co.uk/bna/viewarticle?id=BL/0000104/19280321/227&stringtohighlight=navvies%20paradise> . Accessed 15 April 2023.

³² Coleman, 'The men who dug England's railways', *New Society*, (1965). p. 10.

³³ Killanin, 'Towards an archaeology of navy huts'. p. 1.

³⁴ Brooke, *The railway navy*. p. 168.

³⁵ House of Commons, *Report from the Select Committee on Railway Labourers*.

³⁶ Brooke, 'Railway navvies on the Pennines, 1841-71', p. 42.

often 'shants', sub-standard accommodation overseen by a 'ganger' or foreman and sublet to lodgers; it was here that navy sub-culture developed and flourished with little external constraint.³⁷ On later municipal projects accommodation became more standardised, for example at Blaen-y-Cwm, but also at Portskewett, Monmouthshire in the 1870s and the Elan Valley, Radnorshire, in the 1890s where there was a mix of accommodation types. These settlements included small bungalow huts for the nuclear family of those in management or supervisory roles and the successors to 'shants', designed to accommodate a nuclear family but also with a dormitory for unattached lodgers. A typical configuration of these dwellings would be a bedroom for the householder, his wife and family, a central communal kitchen/dining room and a third multiple-occupancy bedroom for boarders and lodgers.³⁸

Despite the aversion to central government interference, the high accident rate and poor working and living conditions faced by navvies, especially in places like the Woodhead tunnel in the Pennines (1839-45), prompted the establishment in 1846 of the House of Commons Select Committee inquiry into the conditions of railway labourers.³⁹ At this time, particularly on remote sites, navvies were often subject to the 'truck system', where payment was in the form of credit or tokens, exchangeable only in a company-owned store, where prices were often artificially high and the quality of goods poor.⁴⁰ Although such practices had been forbidden under the Truck Act

³⁷ Killanin, 'Towards an archaeology of navy huts'. p. 2.

³⁸ Gant, 'Continuity and change in Portskewett', p.43; Holt, 'Historical British antecedents', p. 53.

³⁹ Coleman, *The railway navvies*, p. 22.

⁴⁰ Ayres, 'Community and Identity: Late Victorian Navvies'; Naomi Brennan, 'Working on the railway: the Risehill tunnel navy camp, Cumbria, *Industrial Archaeology Review*, (2015) 37:2, p. 99-110. Available at: <https://www.tandfonline-com.libezproxy.open.ac.uk/doi/full/10.1179/0309072815Z.00000000049>. Accessed 24 February 2023.

(1831), railway labourers were not specifically in the scope of the Act and it was not until the passage of Truck Amendment Act (1887) that regular weekly cash payments became the norm for all manual workers, including navvies.⁴¹ This was the case at Blaen-y-Cwm, where the resident cashier made weekly trips by train to Newport, accompanied by the police constable armed with a revolver, to collect the workmen's wages.⁴²

The Select Committee's report recommended wholesale reforms including compensation for injuries and government control of all new railway lines but, as Coleman states, 'it cried out for action but nothing was done, it was not even debated [in Parliament]'.⁴³ However, the report did perhaps cast the die on the future reputation of navvies portraying them as thoughtless, thriftless and improvident and drunken, lawless, rootless ruffians.⁴⁴ As stated previously, over subsequent decades this poor reputation was exacerbated by contemporary newspaper reports, for example, from 1847, 'two men belonging to the navvy species were charged with poaching', from 1866 'John Hughes, a *navvy*, was charged with being drunk and riotous in the public streets at Dolgelly [sic.] and pleaded guilty' and from 1899, 'Row at Newport waterworks, navvy seriously stabbed'.⁴⁵ Brooke questions whether navvies were any more badly behaved than the majority of the working classes and Weisser concludes

⁴¹ Ayres, 'Community and Identity: Late Victorian Navvies'; Brennan, 'Working on the railway'.

⁴² Tipper, *Stone and steam*. p. 50.

⁴³ Coleman, 'The men who dug England's railways', p. 11.

⁴⁴ Coleman, *The Railway Navvies*. p. 22.

⁴⁵ Anon., 'Police Intelligence' *Monmouthshire Merlin*, 27 November 1847, p. 6. Available at <https://newspapers.library.wales/view/3394312/3394315/48/navvy>; Anon., 'Drunkness' *The North Wales Chronicle and Advertiser for the Principality*, 29 September 1866, p.2; Anon., 'Row at Newport waterworks', *Western Mail*, 18 August 1899, p. 6. Available at: <https://newspapers.library.wales/view/4448731/4448733/11/navvy>; <https://newspapers.library.wales/view/4339087/4339093/104/>. All accessed 15 May 2023.

that the Victorian stereotype of the violent, drunken misbehaving navy was blown out of proportion by the sensationalism of the era.⁴⁶ Elliott even comments that Abergavenny opposed the 1910 bill to establish the A&DWB ‘on the tenuous grounds that it was fearful of navvies prowling their streets’.⁴⁷ In contrast, in 1912 the consultant engineer for the Grwyne Fawr reservoir reported to the Board,

*‘Mr Baker Gabb, a landowner resident in the valley, wrote to congratulate us on the excellent conduct of the men employed on the work, as the influx of so large body of men was at first viewed with some concern, but this soon gave place to a chorus of praise’.*⁴⁸

It would appear that actual contact with these workers could change negative perceptions.

A persistent criticism of navvies and their lifestyle was their immorality and lack of observance of religion, in particular their desecration of the sabbath through weekend working.⁴⁹ A clergyman giving evidence to the 1846 Select Committee said, “they are the most neglected and spiritually destitute people I have ever met, yes, most vile and immoral characters who are ignorant of Bible religion”.⁵⁰ There were many *ad hoc* attempts by local clergy to address navvies’ irreligiosity, but these often met with limited success, ‘many railway labourers were hard and prejudiced against all religion

⁴⁶ Brooke, ‘The railway Navy – a reassessment’; Weisser, ‘Reviewed Work: The Railway Navy by David Brooke’.

⁴⁷ Elliott John Elliott, ‘The provision of water and sewers’.

⁴⁸ Latham, ‘Engineer’s Report 22 October 1912’.

⁴⁹ Brooke, *The railway navy*. p. 132.

⁵⁰ Coleman, ‘The men who dug England’s railways’, p. 10.

and regarded a clergyman as the natural foe'.⁵¹ The Navy Mission Society was formed in 1877 having identified the need for a coordinated approach to address the spiritual, moral, and material welfare of the men and their dependents as, 'those who took the trouble to get to know this community found that there was much more to them than the common perception'.⁵² Elizabeth Garnett, widow of a clergyman and daughter of a vicar, became a central figure of the Mission, living for several years in a navy community. The Bishop of Ripon was its first president and supporters included the Archbishops of Canterbury and York. The Mission was the Anglican church's lead organisation in its endeavour to achieve a measure of spiritual and moral reformation throughout the wider navy community and sought to appoint lay preachers, preferably ex-navvies, to provide mission rooms, and to establish night schools, often without the support of contractors or municipal corporations.⁵³ Central to the Mission's success was the *Quarterly Letter to Men on Public Works*, edited by Garnett and distributed free to all navvies and supporters of the Mission. The increasing number of municipal projects in the later nineteenth century coincided with an increase in the number of missions at navy settlements. In 1891 there were 39 missions across Britain where the missionary was typically a preacher and pastor who also ran clubs and savings schemes, libraries and organised events such as concerts.⁵⁴

⁵¹ Brooke, *The railway navy*. p. 134.

⁵² Ian Randall, Phil Jump and John Weaver, *Love @ Work, 100 years of the Industrial Christian Fellowship*, (London, 2020), p. 16.

⁵³ Randall et al, *Love @ work*. p. 19; Ayres, *Navy communities and families*. p. 237.

⁵⁴ Randall et al, *Love @ work*. p. 21.

Concerning Blaen-y-Cwm, in correspondence with the Board in July 1912, consultant engineer Latham combined discussion about the missioner and mission hall with the requirement for a canteen, which he considered essential to retain workers but also to avoid 'shebeening', a view supported by the Chief Constable of Breconshire Constabulary.⁵⁵ There was general agreement on the requirement for both a canteen and mission hall, but disagreement on how they should be financed. A survey was therefore conducted of eight different waterworks around Britain with settlements similar to Blaen-y-Cwm, operated by Birkenhead, Birmingham, Bradford, Burnley and Cardiff Corporations, and Fylde, Derwent Valley and Tees Valley Water Boards. On canteens, Latham put forward three procurement methods, the sole responsibility of the contractor, or of the Board, or let to an outside caterer. Of the respondents to the survey, one did not have a canteen as there were already several public houses nearby. Of the seven remaining, three were run by the Boards, three by contractors and one by a caterer. At Blaen-y-Cwm, the Board decided to operate the canteen itself and sought a licence for the Works Supervisor to act as the licensee and to employ a canteen manager. With regard to the mission hall, six respondents contributed directly to the Navy Mission Society for the missioner and hall, one appointed their own missioner and, for the other, the contractor who ran the canteen funded the mission. At Blaen-y-Cwm, the Board agreed to pay one third of the cost of building the mission hall and one third of the missioner's salary, the balance being shared between the contractor and Navy Mission Society.⁵⁶ Fund raising meetings were held locally for

⁵⁵ The canteen was the on-site licenced bar; A shebeen was 'a shop or house where excisable liquors are sold without a licence'. Oxford English Dictionary, (2023). Available at <https://www-oed-com.libezproxy.open.ac.uk/view/Entry/177737?redirectedFrom=shebeen#eid> . Accessed 17 May 2023.

⁵⁶ Latham, 'Engineers Report (12 July 1912)'; Anon., 'Abertillery & District Water Board Minute Books (1914-1929)', *Gwent Archives*, A812/1M/1-8, Accessed 1 March 2023; Anon., 'New Breconshire waterworks licensed to prevent shabeening. Mission hall to be erected', *The Brecon County Times*, 13

the Navy Mission Society, for example at Abergavenny Town Hall on 18 May 1914.⁵⁷

By the time of the 1921 Census, the Navy Mission Society had amalgamated with the Christian Social Union to form the Industrial Christian Fellowship and it was this latter organisation who employed the missionary at Blaen-y-Cwm.

Looking at education, the perceived lack of opportunities for navy children was one of the themes developed by the Select Committee on Railway Labourers of 1846. By the 1870s, children living at remote sites distant from permanent schools remained particularly poorly served and schooling in these conditions became a key aim of the Navy Mission Society. Compulsory school attendance was regularised by the 1880 Education Act and, for those attending existing schools, Ayres comments on their often poor treatment and lack of educational achievement.⁵⁸ At Blaen-y-Cwm, as required by the 1910 Act to establish the A&DWB, the Board built a school and paid for its staff. Scrutiny of the school log book shows that, while conditions could be harsh with ink freezing in ink wells during winter, the school was relatively successful, with positive inspector's reports and several pupils being successful in their entrance examinations to attend secondary schools, for example, being granted scholarships to attend Abergavenny County School.⁵⁹

February 1913, p. 2. Available at: https://newspapers.library.wales/view/3856569/3856571/19/mission%20AND%20navvy%20AND%20Aber* . Accessed 17 May 2023.

⁵⁷ Anon., 'Navy Mission'. *Abergavenny Chronicle*, 15 May 1914, p. 8. Available at: https://newspapers.library.wales/view/4120804/4120812/106/mission%20AND%20navvy%20AND%20Aber* . Accessed 17 May 2023.

⁵⁸ Bryan John Ayres "'Navy' import alions [sic]: the schooling of navy children in the Midlands in the 1890s'. *History of Education*, (2017), Vol. 46, No. 4, pp. 419–435. Available at: <https://doi.org/10.1080/0046760X.2016.1219771> . Accessed 27 April 2023.

⁵⁹ *Log Book 1914-1928*, Blaen-y-Cwm (Abertillery Water) Board/County Primary School, Llanelieu.

Across Britain later in the nineteenth century municipal projects began to replace railway construction as navvies' main employers and conditions and facilities at navy settlements began to improve. Several factors appear to have influenced these changes, not least that the concentration of men in a comparatively small area on typical municipal projects made it far easier to provide facilities than when scattered along many miles of track. In addition, these projects were predominantly undertaken by local authorities whose paternalistic attitude resulted in highly structured accommodation and settlements, often imposing Victorian middle class values on communities while recognising the need for education and welfare.⁶⁰ The Elan Valley reservoirs, built by the Birmingham City Council Water Corporation (BCCWC) between 1893 and 1904, included a 'Model Village' for workers operated under a strict regime.⁶¹ In addition to accommodation of a high standard, the BCCWC provided a school, mission room, public hall, hospital, licenced canteen, bathhouse and post office with telegraph and savings bank. Sole access to the village was by a bridge over the river Elan, permanently policed to ensure no unauthorised entry. The BCCWC administered the village such that workers had no control over its raft of exacting rules and regulations which were strictly enforced. For example, printed rules were displayed for each type of workmen's hut, for the Bridge-Keeper, the 'doss house', public hall and bath house.⁶² The canteen allowed no women, singing, juggling, reciting, gambling, dicing, card playing, dominoes, marbles, shove penny, or draughts, nor did it sell food.⁶³ Coleman opines that by the 1890s the navy age was ending

⁶⁰ Killanin, 'Towards an archaeology of navy huts'.

⁶¹ Holt, 'Historical British antecedents'.

⁶² C. W. Judge, *The Elan Valley Railway*, (Monmouthshire, 2004).

⁶³ Sullivan, *Navvyman*. p. 79.

and, 'in an increasingly organised society navvies in their shanty towns would never again be a law unto themselves and a terror to the countryside'.⁶⁴

Facilities similar to those at the Elan Valley were built at Blaen-y-Cwm and these included: a mission hall; an elementary school which first opened on 18 May 1914; a grocery store; a licenced canteen with 2 men-only bars, a billiard table, foremen's lounge and upstairs a Board dining room; hospital with resident nurse/midwife; and a police constable of the Breconshire Constabulary, whose accommodation included 2 cells. While the workers' accommodation on some projects including at Portskewett and Elan Valley remained after the works were completed, the entire settlement at Blaen-y-Cwm was dismantled under an agreement between the A&DWB and Lord Glanusk when the reservoir was completed. The agreement read, '[the Board will], within a reasonable time after completion of the waterworks reinstate the land to the condition in which the same were, immediately prior to such land being let to them'.⁶⁵ In the nineteenth century, central government involvement in navy life had been minimal. An example from the Grwyne Fawr project of Coleman's 'increasingly organised society' was the introduction of the National Insurance Act (1911). This resulted in the contractor complaining to the Board about the extra work involved in its administration, especially because 'a large number of men not having got their cards, and of men who have cards having given one name to the Board of trade and Post Office authorities and a different one to us'.⁶⁶ The health, education and policing

⁶⁴ Coleman, 'The men who dug England's railways'. p. 13.

⁶⁵ Anon., 'Agreement between the Rt Hon Joseph Henry Russell Baron Glanusk and the Abertillery Abercarn Risca and Mynyddislwyn Urban District Councils, Dated 15 June 1910.

⁶⁶ William Underwood & Brother, *Abertillery & District Water Board Contract – National Insurance Act*, letter to Baldwin Latham M. I. C. E., Consultant Engineer, dated 22 July 1912.

stipulations placed on the A&DWB to protect Breconshire County Council were at Clause 76 of the 1910 Act and also included a requirement to pay compensation in the event of the reservoir bursting.⁶⁷ Little evidence has been found to suggest worker's lives at Blaen-y-Cwm were as closely regulated as they had been at the Elan Valley and, in addition to the facilities described above, the settlement boasted allotments, a football team, choir, concert parties, regular dances and also held annual sports days.⁶⁸ However, the agreement between the Board and Lord Glanusk did have a requirement that 'the contractor dismiss any person in his employ who shall bring any dog onto the said lands'.⁶⁹ Chapter Two now analyses the composition of the Blaen-y-Cwm settlement by interrogating data from the 1921 Census of England and Wales.

⁶⁷ Parliament (1910), 'For protection of Breconshire County Council', *the Abertillery and District Water Board Act*, Clause 76, p. 45.

⁶⁸ The football team played their home matches 11 miles from Blaen-y-Cwm on a rented pitch near Llanfiangel Crucorney station.

⁶⁹ Anon., 'Agreement between Baron Glanusk and Urban District Councils, Dated 15 June 1910.

Chapter Two Blaen-y-Cwm and the 1921 Census

The 1921 Census of England and Wales was originally planned to be taken on 24 April but was delayed when David Lloyd George, the Prime Minister, declared a state of emergency following the threat, later averted, of a national strike. The Census Office did not wish to delay the enumeration beyond June as the holiday season would distort the population distribution and a revised date of 19 June was set.⁷⁰

Blaen-y-Cwm was in the Breconshire parish of Llanelieu. A search of the Find My Past database of the 1921 Census targeted on the parish was conducted using the Employment (industry) code '518', which refers to 'local authority Waterworks'.⁷¹ The search identified 31 households with addresses given as 'Blaen-y-Cwm' or 'Grwyne Fawr'. A further search of adjacent parishes identified additional A&DWB employees whose place of work was Grwyne Fawr reservoir. A&DWB employees who lived and worked in other locations are not included in this study. Each transcribed census return was entered into a Microsoft Excel database, a copy of which is at Appendix 2, from which a range of searches were undertaken. In addition, every original return was analysed to confirm the veracity of the transcribed data. Each return details every member of each household, giving their age, gender, marital status, birthplace, occupation and employer.⁷² It also indicates whether individuals spoke Welsh, English

⁷⁰ Revised Census date:

<http://www.histpop.org/ohpr/servlet/AssociatedView?path=Browse&active=yes&mno=2033&associtle=Census>. Accessed 26 April 2023.

⁷¹ 1921 Census employment codes. Available at: <https://www.findmypast.co.uk/articles/1921-census--employment-industry-codes> . Accessed 10 April 2023.

⁷² Representatives of the Board of Trade, Home Office, Ministry of Labour, and General Register Office (GRO) had drawn up new industrial and occupational classifications for the 1921 census, coded by the Census Office in green ink on each return.

or both languages. When studying censuses, Gant cautions against incompleteness and mis-recording of personal detail but, like his assessment of Portskewett, the returns for Blaen-y-Cwm provide an acceptable basis to establish key aspects of community structure.⁷³ A wide range of misspellings of Blaen-y-Cwm, Grwyne Fawr and Abertillery were identified, which Find My Past clarified was due to the transcription process they employed.⁷⁴ The total population of Blaen-y-Cwm identified for analysis was 218, with a further 25 employees of the A&DWB who lived in adjacent parishes and worked at Grwyne Fawr reservoir. The working age population, that is, those aged 14 or above, was 166.⁷⁵ The analysis that follows seeks to build a picture of the structure and social circumstances of the Blaen-y-Cwm community, looking at age, gender, marital status and employment profiles, together with household types. Using 'area of origin', children's birthplace and nationality, basic migration patterns are developed to consider the extent to which Blaen-y-Cwm residents could be considered itinerant.⁷⁶ These latter findings are compared with earlier work undertaken by Brooke and Gant.

Considering the Blaen-y-Cwm population as a whole, the majority were employees of the A&DWB, their spouses and dependents. Other residents comprised the nurse, police constable, head teacher and assistant, missionary, sub-postmistress and grocer.

<http://www.histpop.org/ohpr/servlet/AssociatedView?path=Browse&active=yes&mno=2033&assotitle=Census>

⁷³ Robert Gant, 'Continuity and Change in Portskewett', p. 42.

⁷⁴ A description of how the census was transcribed can be found here: <https://www.findmypast.co.uk/help/articles/4415870561041-how-was-the-1921-census-transcribed->

⁷⁵ The Education Act (1918) raised the UK school leaving age to 14. The Education Act (1918). Available at: <https://www.parliament.uk/about/living-heritage/transformingsociety/livinglearning/school/overview/1914-39/>. Accessed 1 May 2023.

⁷⁶ Itinerant, Definition: 'travelling from place to place'. Oxford Dictionaries (2023). Available at: <https://premium.oxforddictionaries.com/definition/english/itinerant>. Accessed 1 May 2023.

On the night of the census, three visitors were also recorded. Looking first at age distribution, Figure 2 provides a detailed breakdown of the population of Blaen-y-Cwm, while Figure 3 shows the same population identifying those of working age. Given its remote location, the number of births justified the employment of a midwife and with 35 children of school age, the requirement for the school was also fully justified. The high proportion (76%) of individuals of working age can be attributed to the large number of single and married-unaccompanied men residing at the settlement.

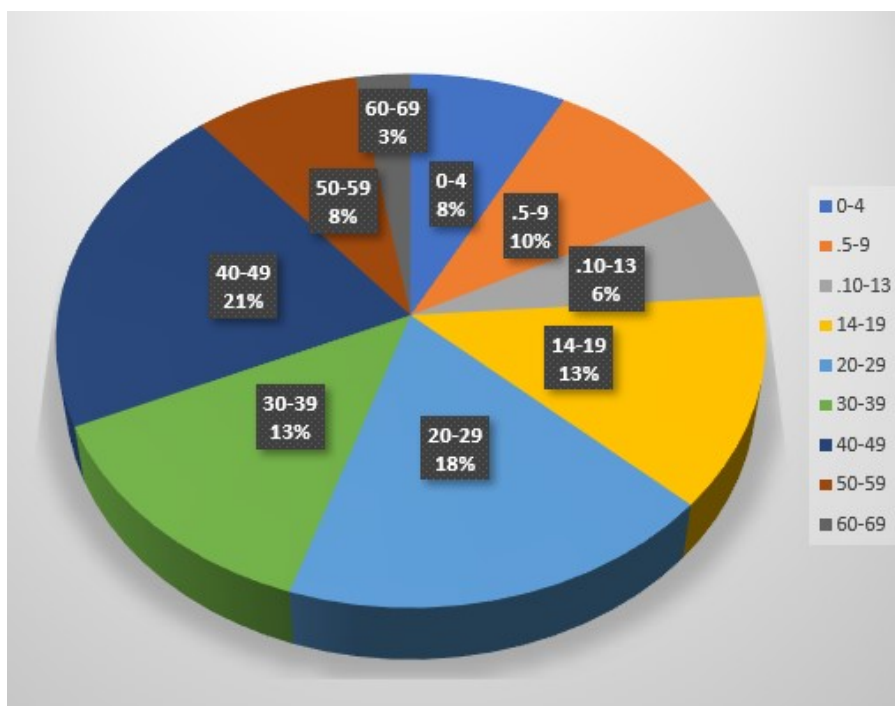


Figure 2: Total population by age

In considering navvies specifically, the General Report on the 1921 Census (1927) concluded that 'Navvies are indeed considerably the oldest group of unskilled elderly labourers, who presumably tend rather to drift into these occupations as others fail

than to choose them deliberately in early life.⁷⁷ However, data from Blaen-y-Cwm does not support this conclusion as the mean age of its navvies was 35.8 years, only marginally higher than the mean age 34.7 years of the total workforce.

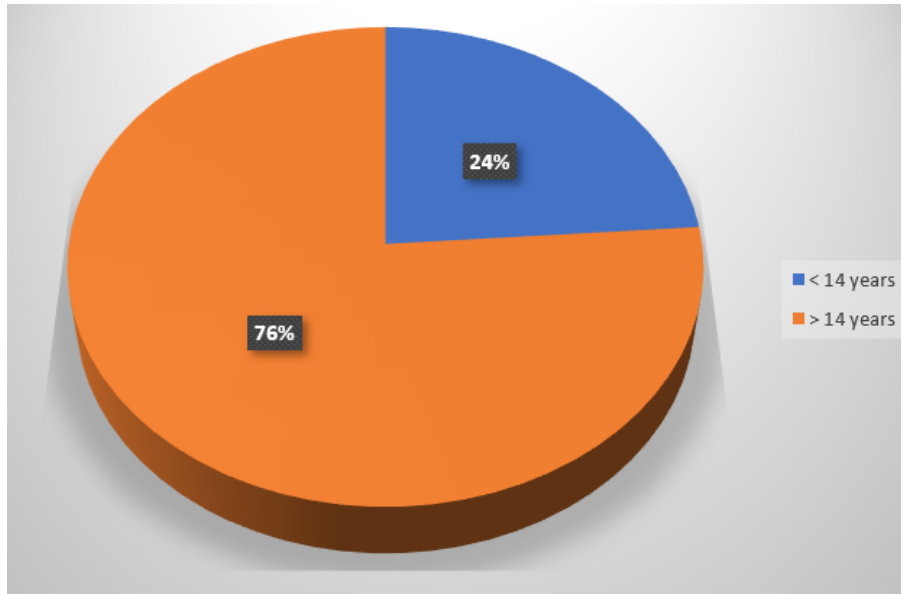


Figure 3: Population of working age

Turning to gender, with the exception of the resident nurse, the A&DWB did not directly employ any women at Blaen-y-Cwm or Grwyne Fawr. The gender distribution of the total population is shown at Figure 4, which is 65% male and 35% female but, as Figure 5 shows, this is more pronounced when looking at only those of working age, with 73% male and 27% female.

⁷⁷ 1921 Census General Report with Appendices, Part VII. Occupations and Industries, 4. Occupations of Males. (1927). Available at: <https://www.visionofbritain.org.uk/census/EW1921GEN/8>. Accessed 7 May 2023.

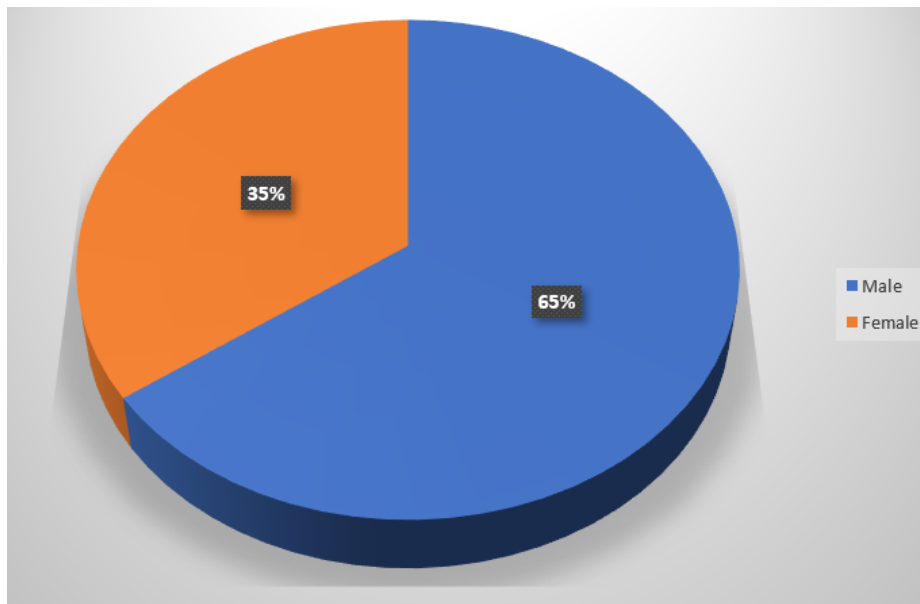


Figure 4: Gender distribution

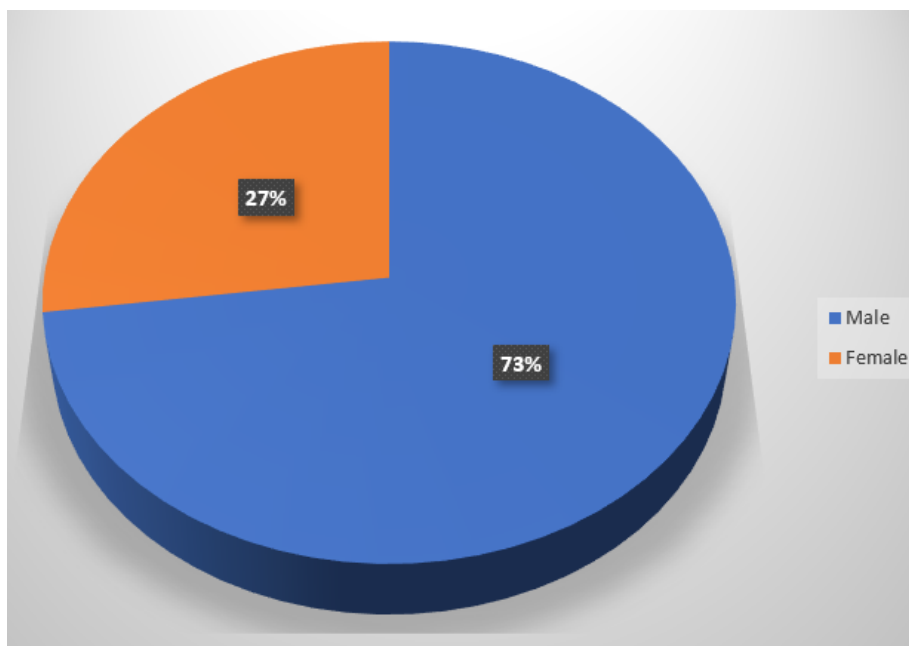


Figure 5: Working age gender distribution

Having looked at gender, marital status is the next topic for consideration, once more analysing the Blaen-y-Cwm population of working age.⁷⁸ Of the 166 persons in the

⁷⁸ Until the Age of Marriage Act (1929) raised the age of marriage to 16 for both sexes, girls of 12 years of age and boys of 14 could legally be married. Available at: <https://parlipapers-proquest->

sample, no one below the age of 20 was married. As illustrated in Figure 6, of the 121 men in the sample, 75 (62%) were single, including 8 widowers, 28 (23%) were married (accompanied) and 18 (15%) married (unaccompanied). Of the 45 women who comprised the female population, as shown in Figure 7, 17 (38%) were single including one divorcee, and 28 (62%) were married (accompanied). No married (unaccompanied) women lived at the settlement.

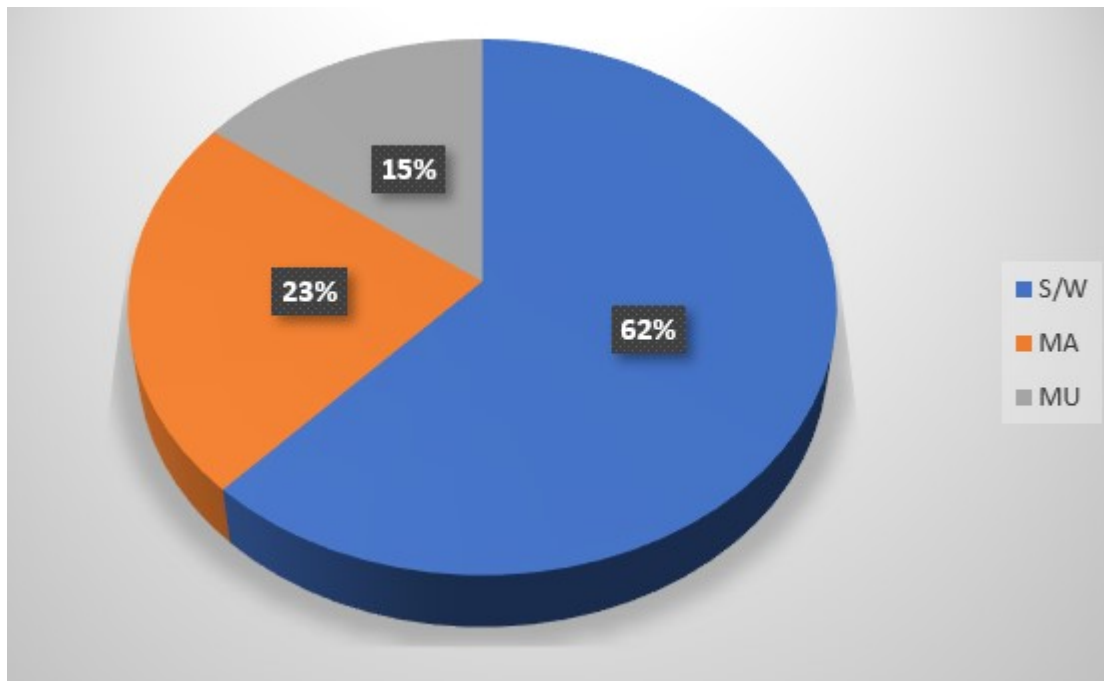


Figure 6: Male population marital status

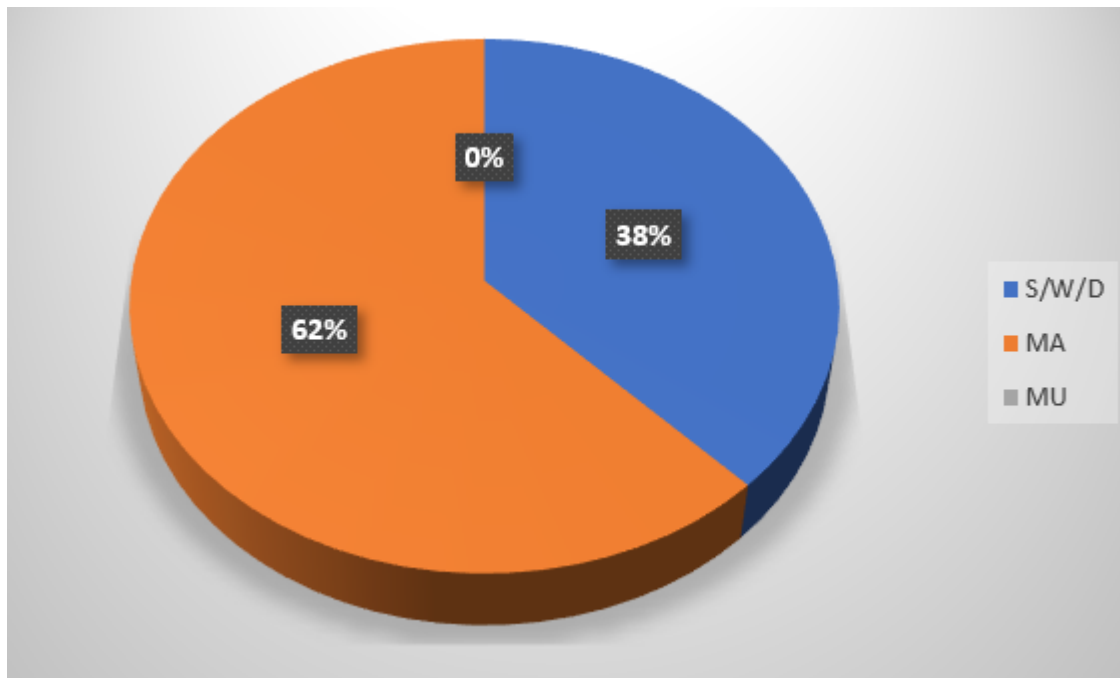


Figure 7: Female population marital status

Analysis of this data shows that Blean y Cwm was a male-dominated environment and, of those men, a significant majority were single or unaccompanied. All of the additional 25 workers who travelled daily to work at Grwyne Fawr were also men which, when one considers their occupations, probably reflects gender norms of society at the time.

On the day of enumeration, the A&DWB employed 140 men at Grwyne Fawr and, as shown in Figure 8, these have been grouped based on their type of occupation.

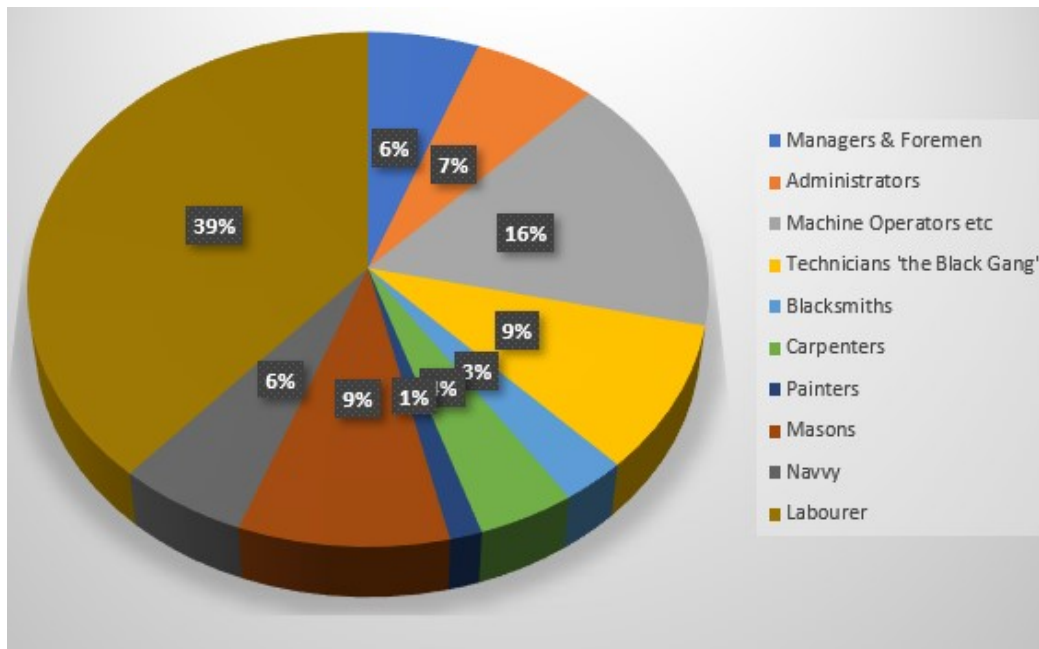


Figure 8: A&DWB employees by occupation type

Eight were employed in supervisory roles, including the overall construction supervisor, the resident civil engineer, chief electrician, 'gangerman' and 4 foremen. Nine were employed in administrative roles, including cashier, timekeeper, canteen manager, storeman and errand boys. Reflecting the increasing mechanisation and use of electrical power in civil engineering and construction, and the fact that an 11 mile narrow-gauge railway operated by A&DWB connected the site with the nearest mainline railway, 23 men were employed as machine operators including crane and locomotive drivers and associated roles. There were 13 technicians, 6 in electrical roles and 7 fitters who maintained equipment, known on site as 'The Black Gang'.⁷⁹ An additional 5 worked as blacksmiths, 6 as carpenters and 2 as house painters. There were also 13 stone masons. Perhaps most surprisingly considering the Blaen-y-Cwm settlement was consistently referred to by the A&DWB as 'Navy Village', the

⁷⁹ Tipper *Stone and Steam*, p. 69.

census lists only 8 men who gave their occupation as navy. The largest number of employees, 54, were listed as either labourer or general labourer. This resonates with Brooke's study of railway navvies of the Pennines, where he concludes the term navy was not popular amongst the men.⁸⁰ Coleman goes further and suggests the term was regarded as slang or even a term of condemnation.⁸¹

Turning next to the employment of women at Blaen-y-Cwm, of the 42 female permanent residents,⁸² with the exception of the nurse, sub-postmistress, teaching assistant and the civil engineer's domestic servant, all listed their occupation as 'home duties' or 'assisting in home duties'. The census instructions stated, 'for a member of a private household (such as householder's wife) who is mainly occupied in unpaid domestic duties at home, write 'Home Duties' in Column (k)'.⁸³ In contrast to Catherine Preston's assertion that 'women's lives were transformed during the war years', this does not appear to have been the case for women at Blaen-y-Cwm.⁸⁴ The women who listed their personal occupation as 'home duties' and 'assisting home duties' would presumably have taken part in washing, cleaning, bedmaking and preparing meals, including for lodgers and boarders. However, none of the female residents

⁸⁰ David Brooke, 'Railway navvies on the Pennines, 1841-71'. p. 42.

⁸¹ Coleman, *The railway navvies*, p. 27.

⁸² There were also 3 female visitors at Blaen-y-Cwm on the night of enumeration.

⁸³ 1921 Census of England and Wales: General, selection 14, Appendix B: Householder's Schedule. Available at: <https://www.visionofbritain.org.uk/census/EW1921GEN/14> . Accessed 7 May 2023.

⁸⁴ Catherine Preston, 'Week 14, Wales and the World Wars, 4, Women and the World Wars'. A329 *The making of Welsh history*. (Open University, 2023). Available at: <https://learn2.open.ac.uk/mod/oucontent/view.php?id=1977464§ion=5> . Accessed 8 May 2023.

gave their occupation as lodging or boarding house keepers, despite this being listed as an option on the census occupation codes.⁸⁵

The census also offers an insight into the accommodation types at Blaen-y-Cwm as well as the number of residents in each property. Each household schedule had a 'room count' of living rooms, including bedrooms, dining rooms, kitchens, parlours and sitting rooms, but excluding small functional spaces such as toilets, laundry rooms and sculleries.⁸⁶ As described earlier, at Blaen-y-Cwm workers homes were designed either to accommodate a nuclear family, or a nuclear family plus single or married (unaccompanied) boarders and lodgers in dormitory-style rooms.⁸⁷ At Blaen-y-Cwm, 78 men gave their relationship to the head of the household as either boarder (71), or lodger (7). Unfortunately, no evidence has been found to explain why the majority of respondents identified as boarders, 'a person who receives regular meals when staying somewhere, in return for payment or services' and relatively few as lodgers, 'a person who rents accommodation in another person's house'.⁸⁸

Dwellings and their occupants at Blaen-y-Cwm can be divided into the following broad categories. Firstly, those whose head of household worked in supervisory roles tended to live only as nuclear families, and the same was the case for the police

⁸⁵ Anon. 'Order XXVII. Persons Engaged in Personal Service (including Institutions, Clubs, Hotels, etc.), 912. Lodging and Boarding House Keepers'. *A Dictionary of Occupational Terms Based on the Classification of Occupations used in the Census of Population, 1921*, Available at: <http://doot.spub.co.uk/code.php?value=912> . Accessed 29 April 2023.

⁸⁶ Anon., 'What is included in a transcription?'. Find My Past. Available at: <https://search.findmypast.co.uk/search-world-records/1921-census-of-england-and-wales> . Accessed 29 April 2023.

⁸⁷ Gant, 'Continuity and change in Portskewett', p.43; Holt, 'Historical British antecedents', p. 53.

⁸⁸ Boarder: <https://premium.oxforddictionaries.com/definition/english/boarder> ; Lodger: <https://premium.oxforddictionaries.com/definition/english/lodger>

constable, schoolteacher, grocer and missionary. These households were mainly bungalows having only 3 or 4 rooms, which Tipper describes as being at the ‘posh’ end of the settlement.⁸⁹ Some similar sized dwellings were occupied by ‘ordinary’ employees of A&DWB, such as locomotive drivers, who had no boarders. Next, larger 5 room dwellings, housed nuclear families with more children, whereas the largest households comprised a nuclear family and boarders. As illustrated in Figure 9, the number of boarders in each of these households ranged from one or 2, up to a maximum of 12 and 14 in multi-occupancy bedrooms. At Blean-y-Cwm there was an even split between dwellings housing only nuclear families and those also housing boarders.

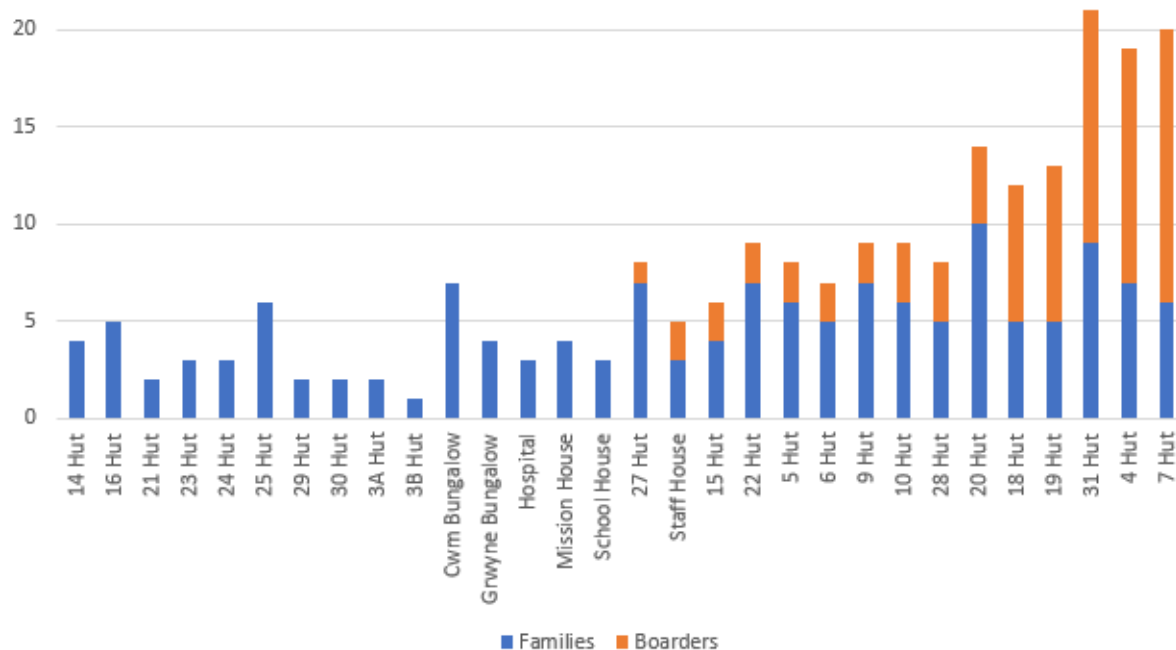


Figure 9: Dwelling occupancy

⁸⁹ Tipper, *Stone and Steam* p. 57.

Worthy of note is the small number of A&DWB employees at Grwyne Fawr who lived several miles from the site and walked daily to work. For example, there are census returns for 10 employees who lived in Talgarth who would have walked more than 9km (6 miles) to work each day, climbing around 570m in the process. Tipper comments that they would have left their homes at 0400hrs each day, to start a 10hr shift at 0830hrs, walking home again at the end of their shift.⁹⁰

A further question upon which an analysis of the census may shed light is whether the Blaen-y-Cwm settlement had a Welsh identity. Looking at place of birth, as depicted on Figures 10 and 11, 81 (37%) of the 218 residents were born in Wales, of whom 40 were under 14 years of age; 9 (4%) were born in Scotland; 4 (2%) were of Irish birth, one was born in Gibraltar and 3 in India (2% other), whereas 120 (55%) were English by birth.

⁹⁰ Tipper, *Stone and Steam* p. 69.

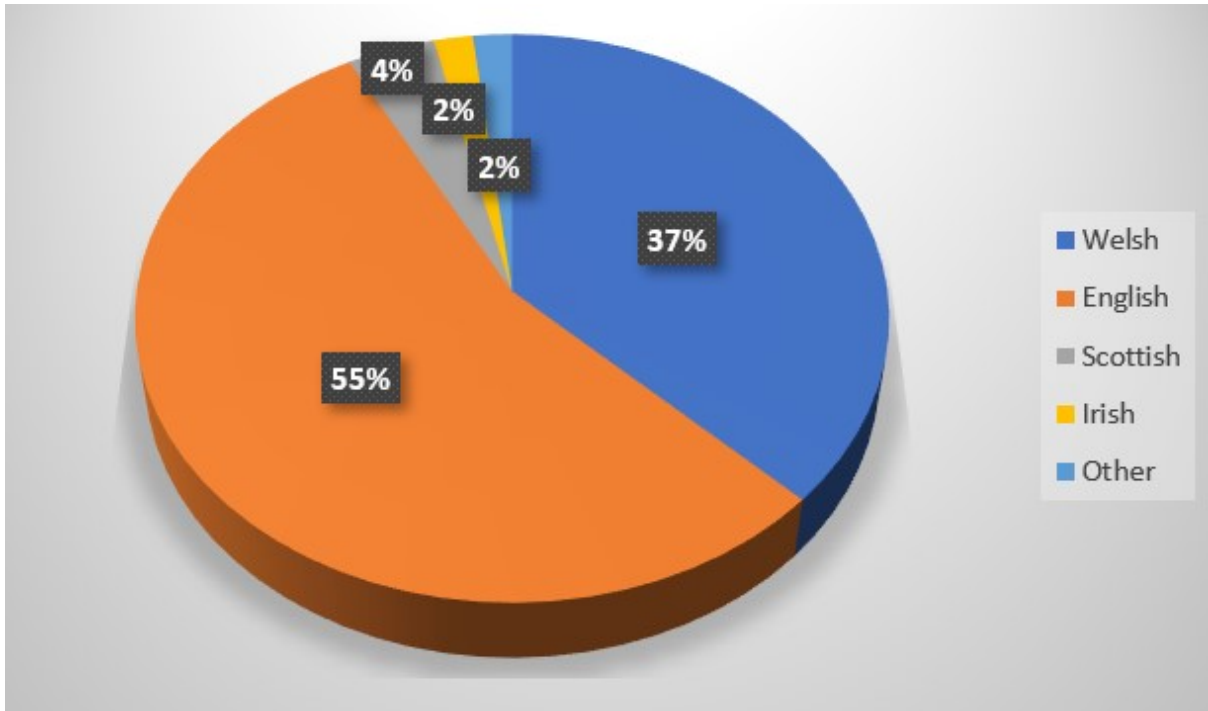


Figure 10: Nationality by birth

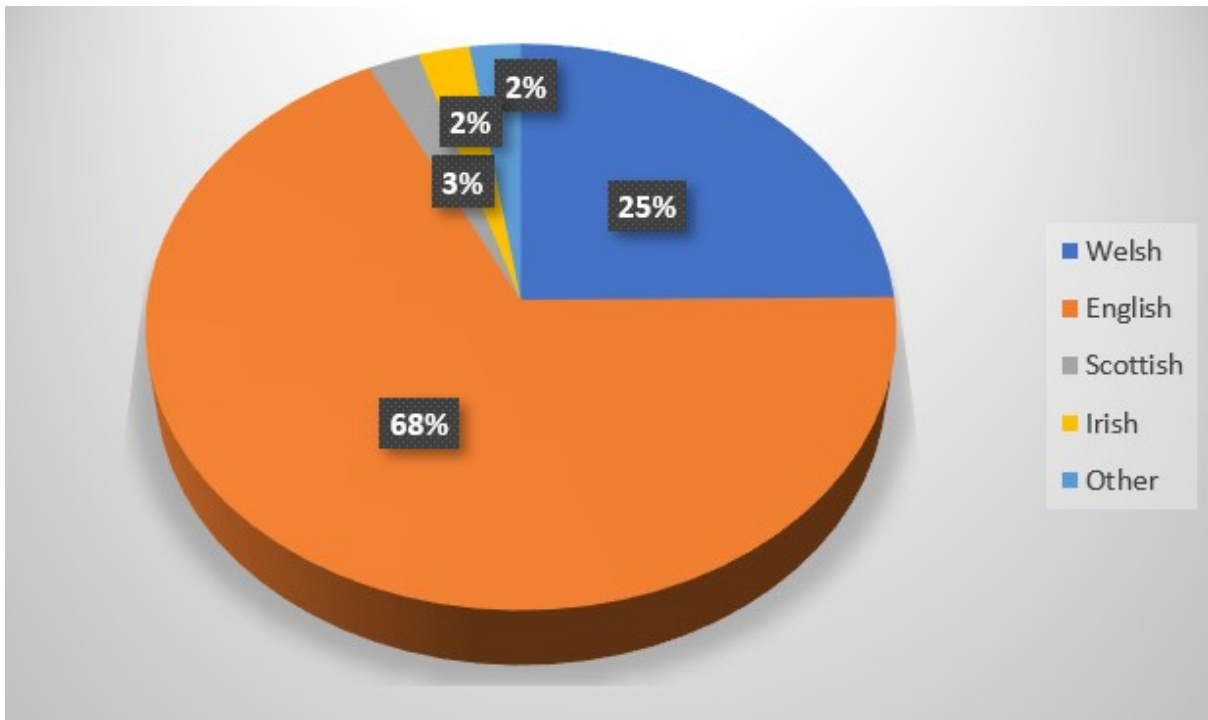


Figure 11: Working age population nationality by birth

Census forms for Wales and Monmouthshire included an additional question on the Welsh language. The General Census Report (1927) states that less than 7% of Monmouthshire residents were able to speak Welsh and, at Blaen-y-Cwm, only 4 residents answered in the affirmative.⁹¹ This small number, and the fact that only 25% of residents of working age were born in Wales, suggests Blaen-y-Cwm may not have had a distinct Welsh identity and the only evidence found to support such an identity at the settlement was the school's annual observance of St David's Day, when it closed in the afternoon.⁹²

One employee of A&DWB was an inmate of Swansea Prison, having been arrested by the resident police constable, convicted at Talgarth Police Court of theft from a co-worker, and sentenced to a 2 month prison sentence with hard labour.⁹³ In addition to his own census return, the constable also submitted a return for three labourers of 'no fixed abode'. No further information on these individuals has been found; perhaps they were living rough in the hope of employment at Grwyne Fawr or perhaps their employment had been terminated and they had yet to move on. Elsewhere, a return from the Police Station at Rogerstone, Newport, listed a General Labourer whose employment status was 'Abertillery Waterworks, out of work' and who was one of 40 on that return 'of no fixed abode'. Perhaps these examples fulfil the reputation of

⁹¹ 1921 Census of England and Wales, General Report with Appendices, (1927). Available at: <https://www.visionofbritain.org.uk/census/EW1921GEN/11>. Accessed 7 May 2023. Also, there were no monoglot Welsh speakers on the Blaen-y-Cwm returns.

⁹² *Log Book 1914-1928*, Blaen-y-Cwm (Abertillery Water) Board/County Primary School, Llanelieu.

⁹³ Anon., 'Mean theft at waterworks', *Brecon County Times*, 26 May 1921, p. 4. Available at: <https://search.findmypast.co.uk/bna/viewarticle?id=BL/0002867/19210526/032&stringtohighlight=talgarth%20brecon%20county%20times>. Accessed 10 April 2023.

navvies as being itinerant, which leads to the final part of analysis of the census, migration patterns.

As discussed previously, considering its remote location, had the A&DWB not built the settlement at Blaen-y-Cwm, it is unlikely that sufficient labour could have been recruited to build the Grwyne Fawr reservoir. In fact, during the early years of the project, before sufficient huts to house all workers had been built, the contractor's poor recruitment and slow progress was criticised by the consultant engineer.⁹⁴ Despite the A&DWB's consistent reference in all of its documentation to Blaen-y-Cwm as the 'Navy Village', as so few men gave their occupation as navy, the term may be neither accurate nor appropriate. Therefore, in analysis that follows, the number of general labourers and navvies has been combined together and listed separately to other occupations.⁹⁵ Using a methodology employed by Gant, Figure 12 shows the distance from place of birth in kilometres of the 140 A&DWB employees working at Grwyne Fawr when the census was enumerated.⁹⁶ A significant proportion of workers, more pronounced for navvies and labourers, were born within 40km of Blaen-y-Cwm and, compared with other workers, proportionally fewer labourers and navvies were born further afield. Gant describes this relationship as 'distance-decay'. As has been shown earlier, large infrastructure projects had always attracted workers of both local birth and from further afield but, as the nature of work had become more mechanised

⁹⁴ Latham, 'Engineers Report, (21 April 1914)'.

⁹⁵ 'Others' refer to all the remaining groups employed by A&DWB, including managers, skilled and semi-skilled workers.

⁹⁶ Gant, 'Continuity and change in Portskewett'. p. 48.

requiring different skill sets, those skilled roles tended to be recruited from throughout Britain.

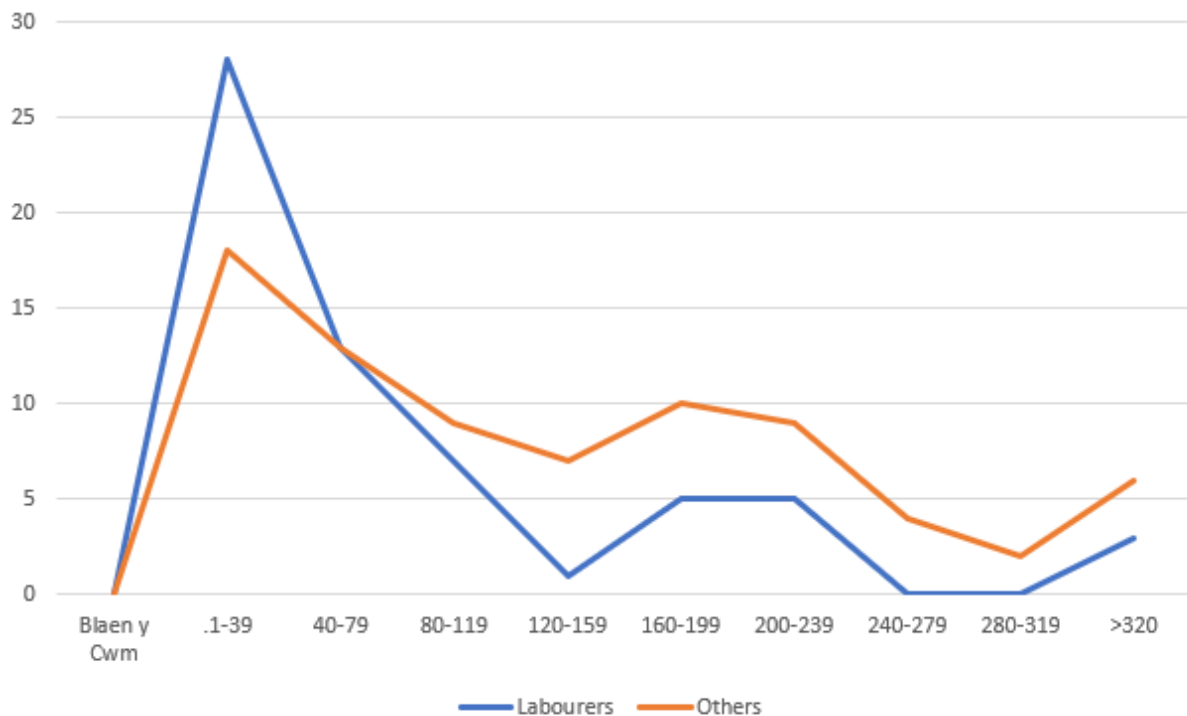


Figure 12: Distance from place of birth of working-age males

Analysing children’s birthplace gives an indication of where employees lived, and from where they migrated, in the years immediately prior to the 1921 Census. At 43, the population sample of children under working age living at Blaen-y-Cwm is relatively small, made even smaller as 12 of these children were under 2 years of age and had been born at Blaen-y-Cwm itself. While caution should be exercised in drawing definitive conclusions from so small a sample, the data shows several clusters of birthplace which suggests these children’s fathers had lived and worked in the same locality, perhaps on the same public works construction projects, before moving to Blaen-y-Cwm. These include for example, Fishguard, Pembrokeshire, whose harbour was commissioned as the western terminus of the Great Western Railway and opened

in 1906; King's Dock, Swansea, Glamorganshire and the Royal Naval dockyard Invergordon, Ross-Shire, Scotland, which was completed in 1913.⁹⁷ Also worthy of note, the Works Supervisor's daughter and twin sons were born at the Elan Valley in 1902 and 1905 respectively, whilst the Birmingham Corporation's reservoirs were being built. This evidence concurs with Brooke's conclusion that notice of new projects was often passed by word of mouth to workers with previous experience.⁹⁸

Analysis of the 1921 census data has shown that the population at Blaen-y-Cwm was unsurprisingly dominated by men, often single or married unaccompanied, and that most women were employed on 'home duties'. The number of births and children of school age fully justified the requirement for the midwife and school. Dwellings consisted of both small bungalow huts for nuclear families and larger dwellings for families and lodgers. Few workers identified as navvies but, when added together with labourers, they comprised the largest proportion of employees. Workers were recruited from across Britain, although a significant proportion were born within 40km of the site. Only 25% were Welsh by birth and only 4 spoke the Welsh language, so it is unlikely that there would have been a distinct Welsh identity at the site.

⁹⁷ Fishguard Harbour, *Coflein*, <https://coflein.gov.uk/en/site/34308/>; King's Dock, Swansea, *Coflein* <https://coflein.gov.uk/en/site/419502/>; Naval Dockyard - Invergordon <https://her.highland.gov.uk/Monument/MHG21258>. All accessed 9 May 2023.

⁹⁸ Brooke, *The Railway Navy*, p. 33.

Conclusion

During the nineteenth and early twentieth centuries, especially before the mechanisation of civil engineering, navvies were responsible for building much of Britain's infrastructure, making an essential yet often overlooked contribution to the success of the industrial revolution. There has been relatively little academic study devoted to navvies, even less in Wales, and the majority that has been written is from a small number of contributors. This study has focused on the remote temporary settlement at Blaen-y-Cwm in the Black Mountains, home of the workers and their families, who built the Grwyne Fawr reservoir for the A&DWB. It has asked two fundamental questions, what were the conditions like for residents at Blaen-y-Cwm when compared with navvies at earlier settlements, and what was the composition of the residents of Blaen-y-Cwm at the time of the 1921 Census of England and Wales?

Navvies were identified as a sub-culture within the working class and, in the heyday of railway construction in the mid nineteenth century, numbered around 200,000 men. Where available they would lodge in existing accommodation, providing additional revenue for those communities but, in remote locations or where sufficient accommodation was not available, temporary settlements would be built. Arriving in large numbers at previously quiet, tranquil locations, navvies quickly developed a reputation for petty criminality, violence, irreligiosity and heavy alcohol consumption. This reputation was exacerbated in the Report of the House of Commons Select Committee on Railway Labourers and Labourers on Public Works' (1846) and perpetuated in many of the press reports on navvies in subsequent decades. Despite their poor reputation, most historiography also highlights the exploitation of navvies at the hands of unscrupulous contractors and there was little state legislation that offered

any protection for them. Living and working conditions at the time were of a very poor standard, with disease and accidents common, but they did improve over time. In the late nineteenth and early twentieth centuries in Wales, large navy settlements were built at Portskewett, Monmouthshire for the Severn railway tunnel and in Radnorshire by the Birmingham City Council Water Corporation for the Elan Valley reservoirs, the latter being very strictly administered. By the time the A&DWB was established by Act of Parliament in 1910, conditions had improved considerably. Although many workers still lived in multi-occupancy huts, there was legal provision at Blaen-y-Cwm for a school, medical care and a resident police constable. In addition, there was a licenced canteen, mission hall, shop and sub-post office. While still perhaps austere by modern standards, the conditions of those who lived at Blaen-y-Cwm were far superior to that of their antecedents.

At the time of the 1921 Census the vast majority of the 218 residents of Blaen-y-Cwm were employees of A&DWB or their dependents. Exceptions were the schoolteacher, police constable, missionary and grocer. Twenty-five men from adjacent parishes also walked several miles each day to work at the reservoir. Seventy-six per cent of the residents were of working age, that is 14 years and above, and 77% of these were single or married-unaccompanied men. The gender distribution of those of working age was 73% male, 27% female. No one younger than 20 years was married and there were no married unaccompanied women at the settlement. Despite the A&DWB consistently referring to Blaen-y-Cwm as 'Navy Village', on census returns only 8 men gave their occupation as navy, yet 54 responded as labourers. This suggests the term 'navvy' was not popular amongst the men and may even have been considered derogatory. Households were a mix of solely nuclear families, or nuclear families with boarders and most women gave their occupation as 'home duties'. Only

25% of those of working age were born in Wales and only 4 spoke Welsh, so it is unlikely the settlement had a distinct Welsh identity. A significant proportion of workers, more pronounced for navvies and labourers, were born within 40km of Blaen-y-Cwm, with the remainder born across Britain. Analysis of the birth place of children below working age indicates some clusters around previous workplaces, suggesting workers learned of the reservoir's construction by word of mouth or moved jobs with co-workers.

While the settlements at Portskewett and Elan Valley outlived the completion of their respective construction projects, on the basis of an agreement between the constituent councils of the A&DWB and the Blaen-y-Cwm landowner Lord Glanusk, the settlement was completely demolished when the reservoir was completed and now, nearly one hundred years later, no sign of it remains. One can perhaps view the settlement of Blaen-y-Cwm as an allegory for navvies more generally, gone, largely forgotten, but without whom much of Wales' early transport, industrial and municipal infrastructure would not have been built.

Appendix 1 Timeline for the construction of Gwryne Fawr reservoir⁹⁹

1906	First surveys for reservoir carried out in Grwyne Fawr Valley.
1909	Monmouthshire County Council's Water Bill defeated in Parliament.
1910	3 August, Act of Parliament to incorporate the A&DWB and build Grwyne Fawr reservoir received Royal Assent.
1911	13 December, contract for Grwyne Fawr reservoir and pipeline to Abertillery and district secured by William Underwood & Brother, Dukinfield, Cheshire.
1912	16 October, completion of the new access road from Lower Cwmyoy to the catchment area. Cutting of the first sod at the reservoir site.
1913	Commencement of building accommodation at Blaen-y-cwm. September, Railway laid on the Board's new road.
1914	8 July, Second A&DWB Act of Parliament.
1915	1 April, pipeline completed and in service. 31 December, all work suspended for the duration of the war.
1916	1 December, Contractor Underwood is released and Board take over the entire project.
1919	Board restart construction. 20 May, third A&DWB Act of Parliament to authorise 10 year extension of time. 25 June, extension railway opened to Lianfihangel Yard.
1920	Quarry at the northern extremity of site brought into use.
1925	Over 400 people reported living at Blaen-y-cwm, 49 children attending day school.
1926	The final cost of the scheme estimated at £1 million. 8 July, Fourth A&DWB Act of Parliament authorising 10 year extension for repayment of borrowed money.
1927	September: Extension of railway to reservoir top, approximately 1,800 ft amsl.
1928	10 February, Reservoir filling begins. 28 March, Official opening. 25 November, High water level reached for the first time.
1929/30	Demolition of village and removal of railway completed.

⁹⁹ Tipper, *Stone and Steam*, p. 100.

Appendix 2 1921 Census Blaen-y-Cwm raw data

A search on the parish of Llanelieu, Breconshire showing entries for Blaen y Cwm and adjacent parishes with 'Employer' as A&DWB, upon which the analysis found in Chapter Two of this study is based.

Last name	First name(s)	Relationship	S/M	Gender	Birth yr	Age	Address	Birth place	Occupation	Occ Code	Lang
Asprey	David	Boarder	S	Male	1874	47	5 Hut	Birmingham, Warwickshire, England	Navy At Waterworks	581/6	
Bayles	Hetty	Daughter	BA	Female	1910	11	18 Hut	Hirwaun, Aberdare	School		
Bayles	Hannah	Wife	MA	Female	1880	40	18 Hut	Newport	Home Duties		
Bayles	Harry	Son	BA	Male	1907	14	18 Hut	Hirwaun, Aberdare	Electrician Helper	319/6	
Bayles	Harry	Head	MA	Male	1878	42	18 Hut	Birmingham, Warwickshire, England	Crane Driver, At Waterworks	950/6	
Bayles	George	Son	S	Male	1903	18	18 Hut	Newport	Electrician Helper	319/6	
Bayles	William	Boarder	S	Male	1898	23	18 Hut	Hertfordshire, England	Blacksmith	190/6	
Bayley	Stanley James	Boarder	S	Male	1900	20	15 Hut	Ewias Harold, Herefordshire, England	Timekeeper	962/6	
Bayliss	Elizabeth Matilda	Servant	S	Female	1905	16	The Bung	Liverpool, Lancashire, England	General Domestic Servant	900/7	
Beachy	Frank	Boarder	S	Male	1899	21	7 Hut	Hereford, Herefordshire, England	Labourer (Genl)	970/6	
Beaven	William Charles	Lodger	MU	Male	1882	39	6 Hut	London, England	banksman	581/6	
Bebb	George	Boarder	W	Male	1856	64	7 Hut	Radnorshire, Wales	Carpenter	474/6	
Bennett	Thomas	Boarder	S	Male	1862	58	4 Hut	Bristol, Gloucestershire, England	General Labourer	970/6	
Bowden	Elizabeth Ann	Wife	MA	Female	1891	30	21 Hut	Aberdare, Glamorganshire, Wales	Home Duties		
Bowden	Walter John	Head	MA	Male	1884	37	21 Hut	Devon, England	Electrician Switchman	307/6	
Bowen	William	Boarder	S	Male	1858	63	15 Hut	Orleton, Herefordshire, England	Waterman	698/6	
Boyle	James Henry	Boarder	S	Male	1902	18	7 Hut	Southampton, Hampshire, England	Lathe Turner	200/6	
Boyle	Charles	-	S	Male	1887	34	NFA	Donegal, Ireland	Labourer	971/8	
Bridger	Ernest A	Boarder	S	Male	1879	42	4 Hut	Hampshire, England	General Labourer	970/6	
Brunker	Dan	Boarder	S	Male	1879	42	7 Hut	Breconshire, Wales	Stone Mason	572/6	Both
Bullock	Francis	Head	MA	Male	1864	57	Other	Longhope, Gloucestershire, England	Mason	572/6	
Burgess	Frank	Boarder	MU	Male	1886	34	10 Hut	Thornefardian, Worcestershire	Navy At Waterworks	581/6	

Simon Wragg – The anatomy of a navy community

Burroughs	Albert Edwards	Boarder	W	Male	1877	44	31 Hut	Paddington, London, England	Labourer General	970/6	
Buxton	Edith A	Head	S	Female	1869	51	Hosp	India	Nursing At Hospital		
Casey	Patrick	Boarder	W	Male	1871	49	19 Hut	Limerick, Ireland	General Labourer	970/6	
Chandler	William	-	S	Male	1879	42	NFA	Guildford, Surrey, England	Labourer	971/8	
Chapman	James	Son-in-law	MA	Male	1896	25	Other	Manchester, Lancashire, England	Boiler Maker	222/6	
Christopher	David	Lodger	S	Male	1895	25	6 Hut	Mountain Ash, Glamorganshire, Wales	Painter (House)	592/6	
Connor	John	Head	Male	Male	1891	29	Other	Hay, Breconshire, Wales	Loco Driver	701/6	
Conway	John	Boarder	S	Male	1875	46	19 Hut	Motherwell, Lanarkshire	General Labourer	970/6	
Cook	Mildred	Daughter	BA	Female	1912	9	20 Hut	Glamorganshire, Wales	School		
Cook	Edith Maud	Daughter	BA	Female	1914	7	20 Hut	Glamorganshire, Wales	School		
Cook	Grace Eveline	Daughter	BA	Female	1908	12	20 Hut	Swansea, Glamorganshire, Wales	School		
Cook	Irene	Daughter	BA	Female	1915	6	20 Hut	Fishguard, Pembrokeshire, Wales	School		
Cook	David	Son	BA	Female	1917	4	20 Hut	Fishguard, Pembrokeshire, Wales	-		
Cook	Alice	Wife	MA	Female	1880	40	20 Hut	Glamorganshire, Wales	Home Duties		
Cook	Ethel	Daughter	S	Female	1905	15	20 Hut	Swansea, Glamorganshire, Wales	Assisting In, Home Duties		
Cook	Cyril	Son	BA	Male	1918	2	20 Hut	Fishguard, Pembrokeshire, Wales	-		
Cook	James	Head	MA	Male	1875	45	20 Hut	Arnold, Nottinghamshire, England	General Labourer	970/6	
Cook	Frederick James	Son	S	Male	1899	22	20 Hut	Cardiff, Glamorganshire, Wales	General Labourer	970/6	
Copleston	Ada Florence	Wife	MA	Female	1870	51	Mission	Plumstead, Kent, England	Sub Postmistress	800/6	
Copleston	Edmund William	Head	MA	Male	1868	53	Mission	Bengal, India	Missioner	827/6	
Copleston	Ronald	Son	S	Male	1907	14	Mission	Ebbw Vale, Monmouthshire, Wales	Office Boy	758/6	
Crane	Sarah Ann	Niece	S	Female	1899	22	15 Hut	Leicestershire, England	Household Duties		
Crowder	Albert Foulds	Head	MU	Male	1895	26	3 Hut	Crich, Derbyshire	Gas Engine Driver	950/6	
Davies	John Robert	Boarder	MU	Male	1867	54	19 Hut	Kington, Herefordshire	General Labourer	970/6	
Davies	James	Boarder	S	Male	1875	45	4 Hut	Almeley, Herefordshire, England	General Labourer	572/6	
Davies	Rose	Servant	S	Female	1902	19	7 Hut	Herefordshire, England	Domestic Servant	900/7	
Davies	Albert	Son	S	Male	1896	24	Other	Talgarth, Breconshire, Wales	Stone Quarry Man	072/6	
Davies	Ivor	Son	S	Male	1900	21	Other	Talgarth, Breconshire, Wales	Labourer	971/6	

Simon Wragg – The anatomy of a navy community

Davies	Herbert	Son	S	Male	1901	19	Other	Talgarth, Breconshire, Wales	Labourer	971/6	
Davies	Arthur	-	S	Male	1860	61	NFA	Bethnal, London	Labourer	971/8	
Deans	James	Head	MA	Male	1881	40	Other	Scotland	Stone Mason	572/6	
Dempsey	John	Boarder	W	Male	1867	53	20 Hut	Wexford, Ireland	General Labourer	970/6	
Dew	Maria	Wife	MA	Female	1882	38	14 Hut	Burghill, Herefordshire, England	Household Duties		
Dew	Edith Leah Ellen	Daughter	S	Female	1906	15	14 Hut	Llangorse, Breconshire, Wales	Domestic Service		
Dew	Kenneth Morton	Son	BA	Male	1909	11	14 Hut	Hay, Breconshire, Wales	School		
Dew	William John	Head	MA	Male	1871	50	14 Hut	Blakemere, Herefordshire, England	Police Constable	809/6	
Edge	Jennie Ruth	Daughter	BA	Female	1913	7	25 Hut	Birkenhead, Cheshire, England	School		
Edge	Sarah Elizabeth	Wife	MA	Female	1884	37	25 Hut	Lancashire, England	Home Duties		
Edge	Henry Roy	Son	BA	Male	1915	6	25 Hut	Birkenhead, Cheshire, England	School		
Edge	Stanley	Son	BA	Male	1920	1	25 Hut	Blaen y Cwm, Breconshire, Wales	-		
Edge	Joseph Henry	Head	MA	Male	1886	35	25 Hut	Caernarvon, Caernarvonshire, Wales	Chief Electrician (Consulting)	861/6	
Ellis	Maisie Lona	Daughter	BA	Female	1915	5	28 Hut	Brecon, Breconshire, Wales	School		
Ellis	Ethel Mary	Wife	MA	Female	1885	36	28 Hut	Penryn, Cornwall, England	Home Duties		
Ellis	Sidney George	Son	BA	Male	1907	14	28 Hut	Liverpool, Lancashire, England			
Ellis	William	Son	BA	Male	1909	12	28 Hut	Llangynidr, Breconshire, Wales	School		
Ellis	William Edgar	Head	MA	Male	1873	47	28 Hut	Penzance, Cornwall, England	Forman Blacksmith	169/6	
Elvin	George Charles	Boarder	S	Male	1900	21	7 Hut	Merthyr, Wales	Labourer (Genl)	970/6	
England	Tim	Boarder	MU	Male	1885	36	10 Hut	Stapleton	Navy At Waterworks	581/6	
Evans	Gilbert	Boarder	S	Male	1904	16	Staff Hse	Rogerstone, Monmouthshire, Wales	Time Keeper At Waterworks	868/6	
Feather	Olivia Anne	Wife	MA	Female	1886	34	School	Dowlais, Merthyr Tydfil	Home Duties		Both
Feather	Vincent George	Son	BA	Male	1918	3	School	Dowlais, Merthyr Tydfil	-		
Feather	Vincent Joseph	Head	MA	Male	1889	31	School	St Horton, Bradford	Head Teacher Elementary School	850/6	
Geddes	Ernest	Boarder	S	Male	1902	19	4 Hut	Bristol, Gloucestershire, England	General Labourer	970/6	
Gibbons	Thomas George Williams	Grandson, visitor	S	Male	1906	15	Other	Newport, Monmouthshire, Wales	General Labourer	970/6	
Gibson	Lilian Hope	Daughter	BA	Female	1909	12	24 Hut	Swansea, Glamorganshire, Wales	School		
Gibson	Elizabeth Mary	Wife	MA	Female	1883	37	24 Hut	Boreham Wood, Hertfordshire, England	Home Duties		

Simon Wragg – The anatomy of a navy community

Gibson	Robert Edward	Head	MA	Male	1879	42	24 Hut	Bushey, Hertfordshire, England	Foreman Fitter (Engineers)	166/6	
Goddard	Gwendoline	Wife	MA	Female	1896	25	The Bung	Bude, Cornwall, England	Home Duties		
Goddard	William Cory	Head	MA	Male	1885	36	The Bung	Leyton, Essex, England	Civil Engineer	860/6	
Green	James	Boarder	S	Male	1886	35	31 Hut	Shrewsbury, Shropshire, England	Labourer General	970/6	
Griffiths	Rickard	Boarder	S	Male	1899	22	31 Hut	Ross and Cromarty, Scotland	Labourer General	970/6	
Griffiths	William	Boarder	S	Male	1904	17	31 Hut	Glamorganshire, Wales	Labourer General	970/6	
Griffiths	Richard	Son	S	Male	1899	22	Other	Ross, Herefordshire, England	Navy	581/6	
Griffiths	Willie	Son	S	Male	1905	16	Other	Fleur de Lis, Monmouthshire, Wales	Navy	581/6	
Gurttum	Alfred Maskell	Boarder	MU	Male	1889	31	4 Hut	Hay, Breconshire, Wales	General Labourer	970/6	
Hamlet	George	Boarder	S	Male	1865	56	28 Hut	-	Carpenter	474/5	
Hancock	Arthur	Boarder	S	Male	1897	24	4 Hut	Dorset, England	Mason	572/6	
Hatcher	Alice	Wife	MA	Female	1890	31	23 Hut	Bristol, Gloucestershire, England	Home Duties		
Hatcher	Harry Sweet	Son	BA	Male	1914	6	23 Hut	Bristol, Gloucestershire, England	-		
Hatcher	Frank Mandy	Head	MA	Male	1886	34	23 Hut	Monmouth, Monmouthshire, Wales	Cashier	939/6	
Hawkins	Beatrice May	Wife	MA	Female	1894	27	29 Hut	Builth Road, Radnorshire	Household Duties		
Hawkins	Walter	Head	MA	Male	1881	40	29 Hut	Little Coxwell, Berkshire, England	Electric Light Engine Driver	950/6	
Hice	William	Boarder	MU	Male	1858	63	27 Hut	Haverfordwest, Pembrokeshire, Wales	Store Keeper	941/6	
Higgs	David J A	Head	MA	Male	1887	34	Other	Sennybridge, Breconshire, Wales	Labourer	971/6	
Hodges	George	Boarder	MU	Male	1870	50	20 Hut	Gloucester, Gloucestershire, England	General Labourer	970/6	
Holderness	Robert Warren	Boarder	S	Male	1893	27	28 Hut	Balham, Surrey, England	Navy	581/6	
Holt	Albert	Boarder	S	Male	1900	20	7 Hut	Rhayader, Radnorshire, Wales	Motor Driver	720/6	
Howard	Maud Amelia	Wife	MA	Female	1873	48	15 Hut	Orby, Lincolnshire, England	Household Duties		
Howard	Herbert	Head	MA	Male	1875	45	15 Hut	Kenilworth, Warwickshire, England	Canteen Manager	770/6	
Howard	Leslie Herbert	Son	S	Male	1898	22	15 Hut	Aston, Warwickshire, England	Fitter	210/6	
Hughes	Evan		S	Male	1865	56	Other	Stratford on Avon	Labourer Gen	970/8	
James	Iris Emily	Daughter	BA	Female	1919	2	22 Hut	Hirwaun, Glamorganshire, Wales	BA		
James	Elizabeth Ann	Wife	MA	Female	1891	30	22 Hut	Runcorn, Cheshire, England	Home Duties		
James	Charlie	Son	BA	Male	1911	10	22 Hut	Hirwaun, Glamorganshire, Wales	School		

Simon Wragg – The anatomy of a navy community

James	George	Son	BA	Male	1913	8	22 Hut	Hirwaun, Glamorganshire, Wales	School		
James	Albert	Son	BA	Male	1915	6	22 Hut	Hirwaun, Glamorganshire, Wales	School		
James	George	Head	MA	Male	1886	34	22 Hut	Kington, Herefordshire, England	Labourer General	970/6	
James	Charles Henry	Brother	S	Male	1882	39	22 Hut	Kington, Herefordshire, England	Labourer General	970/6	
James	William	Boarder	S	Male	1864	56	31 Hut	Middleton, Warwickshire, England	General Labourer	970/6	
James	James	Head	MA	Male	1878	42	Other	Llangattock Lingoed	Labourer General	970/6	
Johnson	Mabel	Sister	S	Female	1906	15	6 Hut	Darlington, Durham, England	Servant	900/6	
Jones	Thomas	Boarder	S	Male	1873	48	22 Hut	Moreton, Shropshire, England	Navy	581/6	
Jones	John	Boarder	S	Male	1872	48	4 Hut	Montgomeryshire, Wales	General Labourer	572/6	
Jones	William	Head	MA	Male	1867	54	Other	Builth, Breconshire, Wales	Carpenter	474/6	
Jones	Albert	Boarder	S	Male	1897	24	Staff Hse	Steen's Bridge, Leominster	Electric Motor Attendant	954/6	
Jupp	Angus	Boarder	MU	Male	1862	59	31 Hut	Paisley, Renfrewshire, Scotland	Crane Driver	950/6	
Kenworthy	John Mason	Boarder	S	Male	1873	48	31 Hut	Shrewsbury, Shropshire, England	General Labourer	970/6	
Kinnersley	George	Boarder	S	Male	1881	40	31 Hut	Middlesex, England	Engine Driver (Locomotive)	701/6	
Kirby	Edith	Daughter	BA	Female	1920	1	6 Hut	Breconshire, Wales	Pre-School		
Kirby	Edith	Wife	MA	Female	1897	24	6 Hut	-	Home Duty		
Kirby	Wilfred	Son	BA	Male	1921	-	6 Hut	Breconshire, Wales	Pre-school		
Kirby	William James	Head	MA	Male	1893	28	6 Hut	Ellesmere Port, Cheshire, England	Engine Driver	950/6	
Knockford	Charles	Boarder	S	Male	1900	21	7 Hut	Hampshire, England	Fitters Mate (Engineers)	213/6	
Ladner	Edward	Boarder	MU	Male	1873	48	9 Hut	Penzance, Cornwall, England	Stone Mason	572/6	
Lewis	Arther	Boarder	MU	Male	1890	31	10 Hut	Glyncorwg, Glamorganshire, Wales	Platelayr Railway	577/6	
Leyden	Desiree K	Visitor	BA	Female	1920	-	Hosp	Sunderland, Durham, England	-		
Leyden	Kathleen G	Visitor	S	Female	1884	36	Hosp	India	-		
Light	George	Boarder	MU	Male	1861	59	20 Hut	Norwich, Norfolk, England	Crane Driver	950/6	
Light	William	Son	S	Male	1898	22	Other	Abergavenny, Monmouthshire, Wales	Labourer	971/6	
Lloyd	Sidney	Boarder	S	Male	1885	36	31 Hut	Llanbister, Radnorshire, Wales	Labourer General	970/6	
Lowe	Edward	Lodger	S	Male	1895	26	18 Hut	Hereford, Herefordshire, England	Labourer Gen	970/6	
Macleod	Victor	Boarder	S	Male	1881	40	7 Hut	Orkney, Scotland	Stone Mason	572/6	

Simon Wragg – The anatomy of a navy community

Maggs	Arthur	Boarder	MU	Male	1882	39	7 Hut	Winterbourne, Gloucestershire, England	Masons Labourer	573/6	
Martin	Stephen Henry	-	MU	Male	1893	28	Other	London, Middlesex, England	Electrician	307/8	
Mathewson	Alexander	Boarder	W	Male	1870	50	20 Hut	Sheerness, Kent, England	Loco Engine Cleaner	701/6	
Mitchell	James	Head	MA	Male	1889	31	Other	Hay, Breconshire, Wales	General Labourer	970/6	
Morgan	Bessie	Daughter	BA	Female	1920	-	9 Hut	Blaen y Cwm, Breconshire, Wales	-		
Morgan	Ada	Wife	MA	Female	1900	21	9 Hut	Staines, Middlesex, England	Home Duties		
Morgan	Thomas Henry	Head	MA	Male	1891	29	9 Hut	Crumlin, Monmouthshire, Wales	General Labourer	970/6	
Morgan	George James	Brother	S	Male	1894	27	9 Hut	Bodenham, Herefordshire, England	Drummer Up	699/6	
Morgan	Eddie	Boarder	S	Male	1896	24	Other	Talgarth, Breconshire, Wales	General Labourer	970/6	
Morgan	Levi	Head	W	Male	1852	69		Breconshire, Wales	Joiner	474/6	
Newport	Charles Harry	Boarder	W	Male	1880	41	19 Hut	Stourbridge, Worcestershire, England	Carpenter's Labourer	499/6	
Oram	Marina	Niece	BA	Female	1915	6	10 Hut	Treorchy	-		
Oram	Marina	Sister	D	Female	1881	40	10 Hut	Redcar, Yorkshire, England	Assisting In Home Duties		
Osborn	May Mabel Ruth	Daughter	BA	Female	1908	12	5 Hut	Southampton, Hampshire, England	School		
Osborn	Elsie May	Daughter	BA	Female	1910	10	5 Hut	Inverkeithing, Fife, Scotland	School		
Osborn	May Mabel Ruth	Wife	MA	Female	1875	46	5 Hut	Stanwell Moor, Middlesex, England	Home Duties		
Osborn	William Frederick	Son	BA	Male	1921	-	5 Hut	Hay, Breconshire, Wales	-		
Osborn	Charles Henry	Head	MA	Male	1874	47	5 Hut	Poplar, Middlesex, England	Foreman Platelayer		
Osborn	Charles William	Son	S	Male	1901	20	5 Hut	Fulham, Middlesex, England	Roperunner or Fitters Labourer	213/6	
Parker	Dorothy Alice	Daughter	BA	Female	1916	5	ByC Bung	Llanerchymedd, Anglesey, Wales	School		
Parker	Florence Elizabeth	Wife	MA	Female	1875	45	ByC Bung	Oldbury, Worcs	Home Duties		
Parker	Florence Ivy	Daughter	S	Female	1902	18	ByC Bung	Radnorshire, Wales	School Teacher Assistant	850/6	
Parker	Leonard	Son	BA	Male	1910	11	ByC Bung	Mynyddylwyn Mon	School		
Parker	Robert Turner	Head	MA	Male	1870	50	ByC Bung	Luxulyan, Cornwall, England	Works Supervisor	692/6	
Parker	Thomas	Son	S	Male	1905	16	ByC Bung	Radnorshire, Wales	Electrician Apprentice	307/6	
Parker	William	Son	S	Male	1905	16	ByC Bung	Radnorshire, Wales	Engineers Fitter Apprentice	210/6	

Simon Wragg – The anatomy of a navy community

Parkhouse	Hilda May	Daughter	BA	Female	1906	14	27 Hut	St German's Saltash, Cornwall	Assisting Mother In Home Duties		
Parkhouse	Dora	Daughter	BA	Female	1913	7	27 Hut	Fishguard, Pembrokeshire, Wales	School		
Parkhouse	Selina	Daughter	BA	Female	1915	6	27 Hut	Pembroke Dock, Pembrokeshire, Wales	School		
Parkhouse	Francis Annie	Wife	MA	Female	1881	40	27 Hut	Berkshire, England	Home Duties		
Parkhouse	John	Son	BA	Male	1909	11	27 Hut	Fishguard, Pembrokeshire, Wales	School		
Parkhouse	John	Head	MA	Male	1857	64	27 Hut	Instow, Devon, England	Waterworks Gangerman	692/6	
Parkhouse	Charles Edward	Son	S	Male	1905	16	27 Hut	St German's Saltash, Cornwall	Crane Fireman	951/6	
Pattison	Eva Mary	Daughter	BA	Female	1920	-	10 Hut	Breconshire, Wales	-		
Pattison	Georgina	Wife	MA	Female	1898	23	10 Hut	Sunderland, Durham, England	Home Duties		
Pattison	Kittey	Sister	S	Female	1906	14	10 Hut	Masham, Yorkshire, England	Assisting In Home Duties		
Pattison	Bob	Head	MA	Male	1898	22	10 Hut	Warfield, Berkshire, England	Roadway Engine Driver	950/6	
Perrin	Rose	Daughter	BA	Female	1907	13	31 Hut	Newport	Home Duties		
Perrin	Doris Victoria	Daughter	BA	Female	1917	4	31 Hut	Invergordon, Ross , Scotland	-		
Perrin	Kathleen Ivy Irene	Daughter	BA	Female	1919	1	31 Hut	Llanelieu, Breconshire, Wales	-		
Perrin	Emily	Wife	MA	Female	1880	40	31 Hut	Sheffield, Yorkshire, England	Home Duties		
Perrin	Mabel	Daughter	S	Female	1902	19	31 Hut	Devonport, Devon, England	Home Duties		
Perrin	Hilda	Daughter	S	Female	1905	15	31 Hut	Letterston, Pembrokeshire, Wales	Home Duties		
Perrin	Jack	Son	BA	Male	1915	6	31 Hut	Bristol, Gloucestershire, England	-		
Perrin	William	Head	MA	Male	1877	43	31 Hut	Gisburn, Yorkshire, England	Engine Driver (Locomotive)	701/6	
Perrin	William	Son	S	Male	1904	17	31 Hut	Gibraltar	Water Works Crane Fireman	951/6	
Powell	Albert Stanley	Boarder	MA	Male	1899	22	Other	Stroud, Gloucestershire, England	Labourer, Lawyer	481/6	
Preece	Charles	Boarder	S	Male	1903	18	19 Hut	Westhope, Herefordshire, England	General Labourer	970/6	
Price	Henry Evan	Lodger	MU	Male	1872	49	18 Hut	Llanhamlach, Breconshire, Wales	Fitter Engineer's	210/6	
Price	Rupert	Lodger	S	Male	1907	14	18 Hut	Dowlais, Glamorganshire, Wales	General Errand Boy	758/6	
Price	James Smith	Boarder	W	Male	1867	53	7 Hut	Rhayader, Radnorshire, Wales	Stone Mason	572/6	
Reed	Alice Maud Mary	Visitor	S	Female	1873	48	Mission	Plumstead, Kent, England	Assistant Matron	130/6	
Ridcut	Dorothy	Niece	BA	Female	1921	-	9 Hut	Blaen y Cwm, Breconshire, Wales	-		
Ridcut	Sarah Eleanor	Sister-in-law	MA	Female	1899	22	9 Hut	Worcester, Worcestershire, England	Assisting In Home Duties		

Simon Wragg – The anatomy of a navy community

Ridout	Arthur	Brother-in-law	MA	Male	1901	20	9 Hut	Southampton, Hampshire, England	Locomotive Fireman	701/6	
Ridout	Nellie	Daughter	BA	Female	1907	13	4 Hut	Swansea, Glamorganshire, Wales	School		
Ridout	Celia	Daughter	BA	Female	1911	10	4 Hut	Swansea, Glamorganshire, Wales	School		
Ridout	Celia	Wife	MA	Female	1879	42	4 Hut	Manchester, Cheshire, England	Home Duties		
Ridout	Bessie	Daughter	S	Female	1904	17	4 Hut	Warrington, Lancashire, England	Assisting In Home Duties		
Ridout	Robert Stanley	Son	BA	Male	1913	7	4 Hut	Blaen y Cwm	School		
Ridout	Joseph William	Son	BA	Male	1915	5	4 Hut	Blaen y Cwm	School		
Ridout	Robert	Head	MA	Male	1880	40	4 Hut	Wells, Somerset, England	Foreman Mason	561/6	
Robins	Arthur	Boarder	S	Male	1875	46	4 Hut	Hampshire, England	General Labourer	970/6	
Rockford	Arthur	Boarder	MU	Male	1885	36	4 Hut	London, London, England	General Labourer	970/6	
Rogers	Walton	Head	MA	Male	1890	31	Other	Talgarth, Breconsire, Wales	Labourer General	970/6	
Round	William	Boarder	W	Male	1865	56	5 Hut	Ludlow, Shropshire, England	Navy At Waterworks	581/6	
Russell	Evelyn Ellen May	Daughter	BA	Female	1914	6	Staff Hse	Sussex, England	School		
Russell	Daisy Emily Casgate	Wife	MA	Female	1890	31	Staff Hse	London, England	Household Duties		
Russell	John Thomas William	Head	MA	Male	1879	42	Staff Hse	Sussex, England	Painter (House)	592/6	
Scott	William	Boarder	MU	Male	1878	43	28 Hut	Down, Ireland	Stone Mason	572/6	
Sims	Alice	Boarder	S	Male	1874	46	22 Hut	Aberdeen, Aberdeenshire, Scotland	Stone Mason	572/6	
Smith	Fred	Boarder	S	Male	1899	21	18 Hut	Brynmawr, Breconsire, Wales	Blacksmiths, Stricker	190/7	
Smith	Edward John	Lodger	S	Male	1907	14	18 Hut	-	Labourer Gen	970/6	
Smith	Edgar	Boarder	S	Male	1901	20	7 Hut	Monmouthshire, Wales	Blacksmiths Stricker	190/6	
Smith	Reginald	Boarder	S	Male	1899	22	Other	Berkeley, Gloucestershire, England	Labourer General	970/6	
Stafford	Sarah	Visitor	W	Female	1850	70	25 Hut	Ashton-U-Lyne, Lancashire, England	Of No Occupation		
Stephens	William	Boarder	S	Male	1874	46	31 Hut	Abergavenny	General Labourer	970/6	
Taylor	Anita Florence	Daughter	BA	Female	1912	8	16 Hut	Newport, Monmouthshire, Wales	School		
Taylor	Mary Gertrude	Daughter	BA	Female	1916	5	16 Hut	Newport, Monmouthshire, Wales	School		
Taylor	Alice Margaret	Wife	MA	Female	1893	28	16 Hut	Goldcliff, Monmouthshire, Wales	Home Duties		
Taylor	Charles Newton	Son	BA	Male	1914	7	16 Hut	Newport, Monmouthshire, Wales	School		
Taylor	George	Head	MA	Male	1889	31	16 Hut	Monmouthshire, Wales	Grocers Manager	770/7	

Simon Wragg – The anatomy of a navy community

Taysom	Frank	Brother-in-law	S	Male	1894	27	Other	Hampton Bishop, Herefordshire, England	Labourer	971/6	
Thomas	Rees	Boarder	S	Male	1899	22	4 Hut	Brecon, Breconshire, Wales	General Labourer	970/6	
Thomas	William	Boarder	S	Male	1862	58	7 Hut	Bronllys, Breconshire	Stone Mason	572/6	
Thomas	David	Boarder	MU	Male	1873	48	9 Hut	Cwrtnwydd, Cardiganshire, Wales	Stone Mason	572/6	Both
Trigg	Arthur	Boarder	S	Male	1898	23	4 Hut	Monmouth, Monmouthshire, Wales	General Labourer	970/6	
Trumper	William	Boarder	S	Male	1875	45	31 Hut	Purslow, Shropshire, England	Labourer General	970/6	
Wade	Phyllis Emily	Daughter	BA	Female	1915	5	19 Hut	Invergordon, Scotland	-		
Wade	Emily	Wife	MA	Female	1897	24	19 Hut	Steen's Bridge, Leominster	Home Duties		
Wade	Bertram Willington	Son	BA	Male	1919	1	19 Hut	Talgarth, Breconshire, Wales	-		
Wade	Bertram Wellington	Head	MA	Male	1898	22	19 Hut	Bromeswell, Woodbridge	Crane Driver	950/6	
Walkey	William Bertram	Brother-in-law	S	Male	1897	24	The Bung	Bude, Cornwall, England	Electrical Fitter	306/6	
Walton	Marchington	Boarder	S	Male	1867	54	4 Hut	Openshaw, Lancashire, England	Gen Labourer	970/6	
Watkins	John Edgar	Lodger	S	Male	1889	32	18 Hut	Hereford, Herefordshire, England	Labourer Gen	970/6	
Weaver	Rose	Daughter	BA	Female	1910	11	7 Hut	Bradwell, Derbyshire, England	School		
Weaver	Rose	Wife	MA	Female	1881	40	7 Hut	Dudley, Warwickshire, England	Home Duties		
Weaver	Richard	Head	MA	Male	1878	43	7 Hut	Shrewsbury, Shropshire, England	Carpenter (Journeryman)	474/6	
Weaver	Joseph	Son	S	Male	1903	17	7 Hut	Masham, Yorkshire, England	Fireman At Waterworks	751/6	
Weaver	Richard	Son	S	Male	1905	15	7 Hut	Bradwell, Derbyshire, England	Crane Boy	970/6	
Wheeler	Robert	Boarder	S	Male	1877	43	31 Hut	Bath, Somerset, England	Engine Cleaner (Locomotive)	701/6	
Williams	David William	Head	MA	Male	1890	31	Other	Breconshire, Wales	Blacksmith Public Works	190/6	
Wills	Edward Thomas	Boarder	S	Male	1900	21	7 Hut	Hampshire, England	Labourer Genl	970/6	
Winten	Henry Arthur	Boarder	MU	Male	1896	24	7 Hut	Abercam, Monmouthshire, Wales	General Labourer	970/6	
Wiseman	Nellie	Boarder	MA	Female	1898	22	19 Hut	Portland, Dorsetshire, England	Assisting In House Duties		
Wiseman	Herbert William	Son	BA	Male	1918	3	19 Hut	Invergordon, Scotland	-		
Wiseman	Frederick Arthur	Son	BA	Male	1921	-	19 Hut	Talgarth, Breconshire, Wales	-		
Wiseman	Herbert John	Boarder	MA	Male	1893	28	19 Hut	Portsmouth, Hampshire, England	Crane Driver	950/6	

Bibliography

Primary sources

Anon., 'Agreement between the Rt. Hon. Joseph Henry Russell Baron Glanusk and the Abertillery Abercarn Risca and Mynyddislywn Urban District Councils date 15th June 1910'. *Crickhowell Archives*.

Anon., '1921 Census of England and Wales', *A Vision of Britain Through Time*. Available at: <https://www.visionofbritain.org.uk/census/1921>. Accessed 7 March 2023.

Anon., 'Projected water legislation for 1908', *Journal of Gas Lighting, Water Supply, &c*, Volume 100, Issue 2325, 3 December 1907. Available at: https://archive.org/details/sim_gas-journal_1907-12-03_100_2325/page/698/mode/2up?q=%22Grwyne+Fawr%22 . Accessed 28 February 2023.

Anon., 'Abertillery & District Water Board Minute Books (1914-1929)', *Gwent Archives*, A812/1M/1-8, Accessed 1 March 2023.

Anon., 'Log Book (1914-1928), Blaen-y-cwm (Abertillery Water) Board/County Primary School', Llanelieu, *Powys Archives*, B/E/PS/5. Accessed 23 February 2023.

Carlson, J., 'Occupations in the 1921 Census', *The National Archives*, (2022). Available at: <https://blog.nationalarchives.gov.uk/occupations-in-the-1921-census/>. Accessed 4 March 2023.

Dickens, C., (Ed.), 'Navvies', *All the Year Round*, Vol 11, no. 265 (1873), pp. 199-202. Available at: <http://libezproxy.open.ac.uk/login?url=https://www.proquest.com/historical-periodicals/navvies/docview/7909104/se-2> Accessed 2 March, 2023.

Latham, B., 'Engineers Reports for Abertillery & District Water Board (1909-1914)' *Gwent Archives*, A812/R1/. Accessed 1 March 2023.

Parliament, House of Commons. Select Committee on Railway Labourers, *Report from the Select Committee on Railway Labourers; Together with the Minutes of Evidence and Index*, Reports from Committees., vol. 9, sess. 22 January-28 August 1846.

Parliament (1910), the Abertillery and District Water Board Act. *Gwent Archives*, CC/PP/77 and CC/PP/78, Accessed 1 March 2023.

Underwood W., & Brother, *Abertillery & District Water Board Contract – National Insurance Act*, letter to Baldwin Latham M. I. C. E., Consultant Engineer, dated 22 July 1912.

Secondary sources

Ayres, B. J., “Navy” import alions [sic]: the schooling of navy children in the Midlands in the 1890s’. *History of Education*, Vol. 46, No. 4, (2017), pp. 419–435. Available at: <https://doi.org/10.1080/0046760X.2016.1219771> . Accessed 27 April 2023

Ayres, B. J., ‘Community and Identity: Late Victorian Navvies’, *Family & Community History*, Vol. 23/3, (2020), pp. 169-181. Available at: https://library-search.open.ac.uk/permalink/44OPN_INST/j6vapu/cdi_informaworld_taylorfrancis_310_1080_14631180_2021_1889181 . Accessed 15 April 2023.

Brooke, D., ‘Railway Navvies on the Pennines, 1841-71’, *The Journal of Transport History*, Vol. 3, Iss. 1, (1975), pp. 41-54. Available at: <http://libezproxy.open.ac.uk/login?url=https://www.proquest.com/scholarly-journals/railway-navvies-on-pennines-1841-71/docview/1304353733/se-2>. Accessed 24 February 2023.

Brooke, D., *The Railway Navy, ‘That Despicable Race of Men’* (Plymouth, 1983).

Brooke, D., ‘The ‘lawless’ navy: a study of the crime associated with railway building’, *The Journal of Transport History*, Vol. 10, Iss. 2, (1989), pp. 145-165. Available at: <http://libezproxy.open.ac.uk/login?url=https://www.proquest.com/scholarly-journals/lawless-navvy-study-crime-associated-with-railway/docview/1304351657/se-2> . Accessed 24 February 2023.

Brennan, N., ‘Working on the Railway: The Risehill Tunnel Navy Camp, Cumbria’, *Industrial Archaeology Review*, Vol 37, 2, (2015), pp. 99-10. Available at: <https://doi-org.libezproxy.open.ac.uk/10.1179/0309072815Z.00000000049>. Accessed 24 February 2023.

Brunton, D., ‘Cities disease and health’, *Confidence and crisis, 1840-1880*, ed. Lofthouse, D., Block 2, Ch 13, (Open University, 2017), p. 305.

Chanos J., and Spellman, J., ‘George Hudson and the 1840s Railway Mania’, *Sage Business Cases*, (2017). Available at: <https://doi.org/10.4135/9781526406927> . Accessed 3 April 2023.

Coleman, T., ‘The men who dug England's railways’, *New Society*, (1965); pp. 151-154. Available at: <http://libezproxy.open.ac.uk/login?url=https://www.proquest.com/magazines/men-who-dug-englands-railways/docview/1307086775/se-2>. Accessed 28 February 2023.

Coleman, T., *The Railway Navvies, A history of the men who made the railways*, (Harmondsworth, [1986] 1965).

Elliott, J., *The Industrial Development of the Ebbw Valleys, 1780-1914*. (University of Wales Press, 2004). Available at: <http://ndl.ethernet.edu.et/bitstream/123456789/43370/1/35.John%20Elliott.pdf> . Accessed 28 April 2023.

Gant, R., 'Continuity and Change in Portskewett: An interpretation of the 1901 Census Returns', *Gwent Local History*, (2006) pp. 41-54. Available at: <https://journals.library.wales/view/1337678/1341103/42#?xywh=-2066%2C-103%2C6645%2C3380> . Accessed 28 February 2023.

Gant, R., 'Oral history and settlement change: a case study of abandoned dwellings in the Black Mountains of Wales, 1840-1983', *Cambria*, Vol. 12 (1), (1985), pp. 97-112. Available at: <https://journals.library.wales/view/1186437/1188546/22#?xywh=-2738%2C-199%2C7906%2C3913>. Accessed 14 April 2023.

Gunn, S., 'Urbanization', *A Companion to Nineteenth-Century Britain*, Ed. Williams, C. Ch. 14, (2006), pp. 238-252. Available at: <https://ebookcentral.proquest.com/lib/open/detail.action?docID=233072> . Accessed 28 April 2023.

Higgs, E. 'Census of England and Wales, 1921', *Online Historical Population Reports*, Histpop - The Online Historical Population Reports Website (2007). Available at: <http://www.histpop.org/ohpr/servlet/AssociatedView?path=Browse&active=yes&mno=2033&associtle=Census>. Accessed 24 April 2023.

Holt, G. D., 'Historical British antecedents of innovative construction project organisation and social structures'. *Construction innovation*, Vol.16 (1), (2016), p.46-66. Available at: <https://doi.org/10.1108/CI-02-2015-0010>. Accessed 15 March 2023.

Jenkinson, D., 'Brooke, David, "The Railway Navy: "That Despicable Race of Men" (Book Review)', *Business History Review*, vol. 59, no. 2, (1985) p. 323.

Judge, C. W., *The Elan Valley Railway*, (Monmouthshire, 2004).

Killanin, M. M., Lord, 'Towards an archaeology of navy huts and settlements of the industrial revolution', *Antiquity*, Vol. 68, Iss., 260 (1994). Available at: <https://go-gale-com.libezproxy.open.ac.uk/ps/i.do?p=AONE&u=tou&id=GALE|A16315246&v=2.1&it=ur>. Accessed 22 February 2023.

Lewis, R. A., 'Edwin Chadwick and the Railway Labourers', *The Economic History Review*, New Series, Vol. 3, No. 1 (1950), pp. 107-118. Available at: <https://www.jstor.org/stable/2589946>. Accessed 5 April 2023.

Llwyd, Rheinallt and D. Huw Owen (Eds.), *Searching for Family and Community History in Wales*, (Gwasg Carreg Gwalch, 2014).

McBride, E. A., *Elan*, (Aberystwyth, 1987).

Morton, R., *The Building of the Elan Valley Dams*, (Walsall, 1996).

Osborne, G., 'The Construction of the Grwyne Fawr Waterworks (1913-1928): A Relic at Crosskeys'. *Gwent local history*, No. 98, (2005), p.63-69. Available at:

<https://journals.library.wales/view/1337678/1340860/64#?xywh=-2498%2C-192%2C7509%2C3820>. Accessed 22 February 2023.

Preston, C., 'Week 14, Wales and the World Wars, 4, Women and the World Wars'. A329 *The making of Welsh history*. (Open University, 2023). Available at: <https://learn2.open.ac.uk/mod/oucontent/view.php?id=1977464§ion=5> . Accessed 8 May 2023.

Penn, R., 'Sociological Analysis of Historical Census Data Using Graphical Representations: An Illustration from the 1921 Census of England and Wales', *SAGE Research Methods Cases Part 1* (2014). Available at: <https://dx.doi.org/10.4135/978144627305013519219>. Accessed: 22 February, 2023.

Pritchard, J. W., 'Water Supply in Welsh Towns, 1840–1900: Control, Conflict and Development', *The Welsh History Review*, Volume 21, Number 1, (2002), pp. 24-47. Available at: <https://doi-org.libezproxy.open.ac.uk/10.16922/whr.21.1.2>. Accessed 28 February 2023.

Pryce, W. T. R. and Drake, M., 'Studying migration', in *From Family History to Community History*, Pryce, W. T. R. (ed.), (1994), pp. 5–31.

Randall I., Jump, P., and Weaver, J., *Love @ Work, 100 years of the Industrial Christian Society*, (London, 2020).

Rowlands, John (Ed.), *Welsh Family History: A Guide to Research*, (1993).

Sullivan, D. *Navvyman*, (London, 1983).

Tipper, D., *Stone & Steam in the Black Mountains*, (1994 [1975]).

Tipper, D., *The Talybont Saga*, Dwr Cymru Welsh Water, (1993).

Weisser, H., 'Review: The Railway Navy: That Despicable Race of Men by David Brooke', *Albion: A Quarterly Journal Concerned with British Studies*, vol. 16, no. 3, (1984), pp. 309–11. Available at: *JSTOR*, <https://doi.org/10.2307/4048778>. Accessed 2 March 2023.

Websites visited

British History Online: <https://www.british-history.ac.uk/>

British Library EThOS e-theses online service: <https://ethos.bl.uk/Home.do>

British Newspaper Archive: <https://www.britishnewspaperarchive.co.uk/>

Find My Past: <https://www.findmypast.co.uk/>

Online Historical Population Reports:

<http://www.histpop.org/ohpr/servlet/AssociatedView?path=Browse&active=yes&mno=2033&assoctitle=Census>

The Internet Archive: <https://archive.org/>

National Library of Wales Welsh Journals. <https://journals.library.wales/home>

National Library of Wales Welsh Newspapers <https://newspapers.library.wales/>

U.K. Parliamentary Papers: <https://parlipapers-proquest-com.libezproxy.open.ac.uk/profiles/hcpp/search/basic/hcppbasicsearch>

A Vision of Britain Through Time: <https://www.visionofbritain.org.uk/>