The cultural inheritance of coalmining communities

Mines Rescue Station, Hassans Walls Road, Lithgow. 1920s.
(Lithgow State Mine Heritage Park)

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THE CULTURAL INHERITANCE OF COALMINING COMMUNITIES

1. Introduction

This study seeks to identify the nature of the communities which depended on coalmining industries, and the material culture objects with which they were associated. It focuses on community as the group of people who obtained their livelihoods directly from a coalmining venture. This includes the employees of the coalmine, their dependents and close family.

The nature of coalmining communities is explored by analysing previous studies of the history and sociology of these communities. The conclusions reached in a series of studies of communities in Britain and the United States of America are considered, with particular emphasis on attempts by researchers to identify the characteristics of a "typical" coalmining community.

Australian studies of coalmining communities are then examined to determine whether the characteristics of a typical coalmining community apply in the Australian context. It will be considered whether there is ample evidence from Australian coalmining communities to support the application of Bulmer's (1975) description of these characteristics to these communities. Evidence of individual and group behaviours which might support or refute the notion of a "typical" coalmining community are also explored.

To explore variations in the geographical size of coalmining communities two mining communities from the Western Coalfield of New South Wales are examined. These are:

- Tyldesley Village – a small coalmining community
- Lithgow State Coal Mine – a large mining venture in a complex community

2. The nature of coalmining communities – British & American studies

Coal mining communities have been the subjects of a range of sociological studies over an extended period of time. In particular a number of studies were undertaken in the period of rapid and enduring change which occurred in the coalmining industries of Britain and Australia from 1940 to the mid 1950's.

The classic British study of this era, *Coal is Our Life* by Dennis, Henriques and Slaughter (1956), defined a range of characteristics of coal mining communities. These were generally affirmed in a range of later British and North American studies including Warwick and Littlejohn (1992).

In studying the West Yorkshire coalmining town of Featherstone (named *Ashton* for the purpose of their study) Henriques and Slaughter defined the community in the following terms:

> *Ashton is predominantly a working-class town owing its development to the growth of its collieries. The latter have drawn people and houses around them, the main pit is almost in the centre of town. ... Most of the men in Ashton are miners. The cohesive results of this fact are well-known … Common memories of past struggle have undoubtedly helped to bind a community such as Ashton* (Warwick and Littlejohn 1992, p.19)

The nature of labour relations in coalmining communities is characterised by Henriques and Slaughter (Warwick and Littlejohn 1992, p.20) in the following terms:

- Relations based on class divisions which are similar to those occurring in other wage earning communities
- These relations modified by the "peculiar conditions and history of the coal industry", including;
    - the nature of the local labour market,
    - the particular physical conditions of coal getting, and
    - the market for coal

They note the nature of the fundamental conflict which occurred between the miners of Featherstone and the owners and managers of the mines. They describe this in the following way:

> *(t)hey see it as natural that the employer wishes to make profit out of their work; … But their aim is also to make money, and for this reason their relationship with the employer is one of struggle for the division of the spoils.* (Warwick and Littlejohn 1992, p.20)

In his 1975 study, which attempted to synthesise previous sociological studies of coal mining communities in North America, Bulmer (Warwick and Littlejohn 1992, p.30) identified eight characteristics of an "ideal type" or typical of traditional mining community. These were:

1. Physical and geographical isolation – little contact with the outside world
2. Economic predominance of mining – the paid work available in the mining organisation forms almost the whole of the local labour market. The town or village is virtually a 'company town'.
3. The nature of work – dangerous, unhealthy, but a source of pride and cohesion among workers, despite the status difference among the miners.
4. Social consequences of occupational homogeneity and isolation – virtually a one-class community with little social or geographical mobility.
5. Leisure activities – 'gregarious patterns of communal sociability' outside the home, usually with workmates.
6. The family – sharp division between men's world and women's world. Home is the woman's domain. Each household is involved in a supportive kinship network, and there is much continuity between generations.
7. Economic and political conflict – interests of owners and miners are fundamentally opposed over the division of the 'spoils', and the politics of distribution and control. Each side forms associations/unions to pursue its ends, but power tends to be in the hands of the owners, especially in a 'company town'.
8. The whole- close knit and interlocking collectives based in a shared history, and meaningful social interaction confined largely to the locality.

Bulmer indicated that this list

> …*states in extreme and deliberately accentuated form the hypothetical dependence of all community relationships upon the dominant technological and economic conditions of action in the community, within a capitalist economic system ...(It does so) in order to find out to what extent this provides an adequate explanation of mining settlement structure and to what extent it does not.* (Warwick and Littlejohn 1992, p.30)

The list of characteristics of typical mining communities provides a basis for comparison of mining communities across regions and nations. These characteristics appear to represent many of the widely held views of the nature of mining communities. It is useful as a starting point to analyse the behaviours of the residents of mining townships and also to make comparisons of the ways in which mining communities viewed themselves.

Warwick and Littlejohn tested Bulmer's conclusions in the context of the West Yorkshire coalfields. They came to a range of conclusions regarding the idea of a 'typical' mining community. In their analysis they questioned Bulmer's conclusions regarding the isolation of a typical mining community. They noted the documented high levels of labour turnover in mining industries in the English Midlands and in North Eastern France, indicating that:

> *Danger, early and sudden death, respiratory diseases, and foul working conditions always provided very real reasons for miners to look elsewhere for work.* (Warwick and Littlejohn 1992, p.37)

These factors, and statistics indicating high levels of employee movement between mines, communities and industries, tend to challenge Bulmer's notion of typical mining communities having little contact with the outside world. They also note that:

> … *miners were more prone to militancy in more mobile mining settlements with harsh employment practices, and that moderate trade unionism was linked to communities with lasting social networks, which tended to be associated with employer paternalism.* (Warwick and Littlejohn 1992, p.38)

Warwick and Littlejohn generally endorse Bulmer's model of a typical coalmining community with the specific reservation that community isolation cannot be demonstrated as an archetype. Bulmer's observations in this regard are more likely to be applicable to metalliferous mining than coalmining communities.

In their study of the historical background of West Yorkshire mining communities Warwick and Littlejohn also concluded that the period of development of modern coalmining began in the 1860s and continued to the 1930s and 1940s. This period of development was characterised by:

- Changes of mine ownership "… from the family dynasty type of mine owning to the company and vertically integrated concerns" which led to a decline in the paternalism which was typical of earlier mining enterprise. (Warwick and Littlejohn 1992, p.69) This trend occurred generally through the second half of the nineteenth century.
- A labour force drawn from "a wide range of localities" which experienced a range of cohesive and divisive forces. (Warwick and Littlejohn 1992, p.69) The massive development of industrial enterprises in Britain from the late eighteenth century and rapid depopulation of many rural areas led to widespread displacement of communities. This trend continued through immigration into places in Australia until the mid twentieth century.
- Working class solidarity deriving from a series of conflicts and disputes. (Warwick and Littlejohn 1992, p.70) The late nineteenth century saw the rapid development of labour organisation and militancy.

In his exploration of the making of the industrial landscape in England Trinder (1997) noted the great differences between various mining and industrial communities developed during the nineteenth century. He contrasts "model" communities such as that established at Flockton in the West Riding of Yorkshire (Trinder 1997, p.196) with the apparent chaos of development in the Black Country (Trinder 1997, pp.186-187) and the colliery settlements along the Tyne with "raw, frontier-like qualities" (Trinder 1997, p.187). In doing so he notes the differences between paternalistic and corporate approaches to the development of mineworkers' housing.

Trinder's observations were affirmed by McEwen in her 1979 study of New South Wales coal mining communities. She noted that:

> *In the English colliery villages the mine manager was still the equivalent of the rural squire. Often the company owned all the land, so that the inhabitants were tenants as well as employees.* (McEwen 1979, p.109)

Warwick and Littlejohn observe that "a whole complex of social relations" led to the development of coalmining cultures which stressed solidarity at a community level and mineworker politics which were more likely to be driven by local events and relationships than by the broader ideals of the labour movement. (Warwick and Littlejohn 1992, p.187)

Warwick and Littlejohn generally endorse Bulmer's model of a typical coalmining community with the specific reservation that community isolation cannot be demonstrated as an archetype. Coalmining communities display the following characteristics:

- Economic predominance of mining with paid work available from mining comprising almost the whole of the paid labour market.
- The nature of work – dangerous, unhealthy, but a source of pride and cohesion among workers.
- A one-class community with little social or geographical mobility
- "Gregarious patterns of communal sociability" outside the home, usually with workmates.
- Sharp division between men's world and women's world.
- Economic and political conflict.
- The whole – close knit and interlocking collectives based in a shared history, and meaningful social interaction confined largely to the locality. (Warwick & Littlejohn, 1992, p.30).

Section 3 will explore the application of these criteria to Australian coalmining communities.

3. Application of the concept of a typical traditional mining community in the Australian context

Histories and analyses of Australian coalmining communities tend to support the general application of Bulmer's ideal type of mining community to the Australian coalfields. The application of Bulmer's model to Australian coal mining communities is explored, particular emphasis being placed on the following characteristics in order to identify their applicability in the Australian context:

- Physical and geographical isolation
- Economic predominance of mining and social consequences of occupational homogeneity
- The nature of work – dangerous, unhealthy, but a source of pride and cohesion among workers, despite the status difference among the miners.
- Social consequences of occupational homogeneity and isolation – virtually a one-class community with little social or geographical mobility.
- Economic and political conflict between employers and employees.
- The whole- close knit and interlocking collectives based in a shared history characterised by meaningful social interaction confined largely to the locality.

These characteristics are regarded as having the most relevance to this study as assessment of them will assist in establishing patterns of behaviour in coal mining communities relevant to predicting the removal of artefacts from active mining sites.

3.1 Physical and geographical isolation

Physical and geographical isolation may be a characteristic of many hard rock and metalliferous mining enterprises such as Cobar (McKillop 1999, pp.5-6) or Bolla Bollana (Bannear 1988, p.20) which exploit high value ores. An extreme example of an isolated metalliferous mining field existed at Artlunga in Central Australia. Supplies for the mining community at Artlunga "arrived at only two or three month intervals" (Holmes 1983, p.78).

The very nature of coal as a high volume, low value resource determines that it must be mined in areas which are serviced by bulk transportation systems such as railways, or in areas which are close to major industries. The development of coalmining in New South Wales and elsewhere has been dependent on either the proximity of coastal shipping or the development of railway networks. Development of coal mines in New South Wales replicated patterns of coal mining development established in countries such as the United Kingdom and United States of America.

The failure of a series of mines in the Cullen Bullen region of the Western Coalfield, prior to the development of the Wallerawang-Mudgee railway branchline in the 1880's, (Christison 2002, p.5) indicates the difficulties faced by coalmining

enterprises which lack an available bulk transportation system. These difficulties were also evident in the delayed development of coal mining along the rugged Illawarra Coast (Longworth 2002, pp.5-6). Despite initial discovery in 1797 (Pearson & McGowan 2000, p.123) the deposits at Coal Cliff were not commercially mined until 1877 when a purpose built jetty was constructed to provide access to bulk transportation (Longworth 2002, pp.6-7).

In contrast the rapid development of coalmining in the Lithgow Valley after the arrival of the Great Western Railway in 1869 (Cremin 1989, p.35) indicates the symbiotic nature of the relationship between railways and coal mines in the nineteenth and twentieth centuries. The link between coalmining and bulk transportation systems ensured that coalmining communities were not isolated, either physically or geographically.

The mobility of labour on the Australian coalfields is highlighted in Alan Walker's (1945) study of Cessnock on the South Maitland Coalfields of New South Wales. He noted that the town and its mines, which grew rapidly from a population of 150 in 1903 to 14,385 in 1933 (Walker 1945, p.3), attracted people from a range of other places and occupations. His figures from a sample of the population are listed below:

Table 3.1 Place of origin of a sample of residents of Cessnock, 1945
(Walker 1945, p.5)

Gender	**Place of Origin**							
	Other Aust. Coal-fields	Aust. towns	Born in Cess-nock	South Mait-land	Scot-land	Eng-land	Wales	**Total**
Male	73	44	41	38	23	16	2	**237**
Female	34	62	25	22	17	6	0	**166**

The ongoing expansion of Australian coal mining throughout the nineteenth century, and later structural changes of the twentieth century, ensured that coal miners and their families tended to move between mining enterprises and coalfields. Employment in the coal industry also tended to attract labour from other mining ventures which were more dependent on the vagaries of the economic cycle.

Written and oral histories also provide evidence that miners travelled a variety of distances to and from work. The availability of transport to and from work tended to determine the size of the footprint of the mining community. Prior to the advent of the private motorcar the following options were available for transport from home to work:

- Walking
- Pushbike
- Horse

Many oral histories include accounts of miners travelling anywhere between three and seven miles (approx. 5 to 11 kilometres) to work. Jack Savage lived in Portland and worked at various coalmines in the Wallerawang – Cullen Bullen area of the Western

Coalfield from 1938 onwards. He recalled riding a pushbike seven miles over the Boulder Mountain to the Big Spur Colliery:

> *There was blokes who used to ride horses in all kinds of weather. Then you had some men who used to walk two or three miles [three to five kilometres] in all sorts of bloody weather…. The pushbike was the most attractive, the horse was next and then there was walking. They were the only ways you could get to work in them days. Later on things picked up and men got jobs, they started a bus run and you could ride to work in the bus. We thought it was heaven.* (Moore et al 1998, p.142)

In some circumstances workers trains were provided to transport employees to and from work. Well-developed collieries such as Richmond Main in the South Maitland field had special rail services for workers (Moore et al 1998, p.48).

Fred Kirkwood, who worked at Mt Kembla mine in the Illawarra from 1923, noted that miners at Mt Kembla travelled from various villages within a radius of 10 kilometres to work at the mine. The final distance from the village to the mine was one mile up a steep incline:

> *They all walked up. They would work 10 hours a day then walk home again. If people came from Figtree, they'd ride pushbikes from there and then walk up the incline. I knew some blokes who used to walk from Keira. They had a job at Kembla and walked from Keira. They wouldn't get a day's work in.* (Moore et al 1998, p.24)

The geography and geology of the New South Wales coalfields are such that in many instances mines and mining communities developed within very close proximity of one another. Extreme cases of this occurred in places such as Lithgow where colliery headworks could be located within 100 to 200 metres of each other.

It can generally be assumed that Bulmer's notion of a typical mining community being isolated physically and geographically does not hold true for coal mining communities. This concurs with conclusions reached by Warwick and Littlejohn in relation to coal mining communities in Britain. Johnston-Liik, Liik and Ward (Johnston-Liik et al 1998, p.11) note that in Britain and Europe the location of major industries was supported by the bulk transportation capacity of canal systems prior to the introduction of railways. Bulmer's observations of this characteristic can be argued to be more generally relevant to metalliferous mining communities which generally tend to be less dependent on bulk transportation systems than do coalmining communities.

3.2 Economic predominance of mining and social consequences of occupational homogeneity

Other characteristics of Australian coalmining communities resonate very clearly with the analysis of Warwick and Littlejohn. In 1979 Ellen McEwen undertook a very comprehensive study of the nature of community in the coal mining districts of Newcastle. This study explored "the kind of social organisation that developed in the Newcastle Coalmining District of NSW between 1860 and 1900". In particular she

sought to determine how "closely knit" was the social organisation of these communities (McEwen 1979, p.2).

Within this general context she sought to identify the characteristics of coal mining communities which may have demonstrated the development of a united or divided society. (McEwen 1979, p.4)

Her study covered the following coalmining settlements (McEwen 1979, p.2):

Table 3.2 Population of Newcastle coalmining towns 1891

Town	Population 1891
Adamstown	2030
Hamilton	4844
Lambton	3436
Merewether	4339
Minmi	2595
New Lambton	1598
Plattsburg	3301
Wallsend	3644

McEwen noted that:

> *The dependence of the district on one industry made for a simple occupational structure. The colliery workforce consisted of miners, who hewed the coal, labourers and other semiskilled workers who loaded the coal and worked the mine machinery, and skilled tradesmen, who attended the machinery in the colliery workshops. This distribution of labour dominated the occupational structure of the individual towns and the district. Over half the workforce were miners, 10 to 20 percent labourers and about 11 percent were skilled tradesmen. In all about 85 percent were manual workers. In addition there was the non-manual colliery staff: the colliery manager, the clerks who worked in the office and the other mining officials, who supervised operations above and below ground …. Each occupational group had a particular place in the social hierarchy which was determined by its prestige, power and relation to the means of production, distribution and exchange. Essentially, these characteristics resolved themselves into a division between prestigious professionals, or property owning employers, and employees in manual jobs.* (McEwen 1979, p.15)

This hierarchy is demonstrated in a comparison of occupations of male workers listed in the Newcastle Coalmining District in 1871 and 1894 (McEwen 1979, p.16).

Table 3.3 Occupations in Newcastle coalmining towns

Position in hierarchy	Occupations included	1871	1894
I	Professions, independent means	2	3
II	Managers, manufacturers, large businessmen	0	1
III	Shopkeepers, publicans, agents	11	11
IV	Clerks, shop assistants, overmen	1	0.5
V	Tradesmen, working foremen	9	10
VI	Miner	67	57
VII	Semi-skilled, labourer	9	18

Sources: *Census of N.S.W., 1871*
Electoral roll of N.S.W., 1894

Basically the social hierarchy of coalmining communities consisted of small numbers of professionals, employers, property owners and business people living alongside a much larger cohort of tradesmen, miners, semi-skilled workers and labourers.

> *The lowest group were the labourers, who were paid the poorest wages and did heavy manual work that involved no special skill. They were strongly despised by the miners who were just above them. Although they did heavy manual work, miners were more skilled. They also drew considerable prestige from working underground in dangerous conditions.* (McEwen 1979, p.17)

Coal miners maintained a hierarchy of occupations, the most skilled having completed a journeyman process which progressed them through a variety of occupations. Many coal miners knew little else, having come from families with traditions of coal mining going back generations.

Walker's survey of Cessnock miners in 1945 provides a telling picture of the background of coal miners:

Table 3.4 Previous occupations of a sample of Cessnock miners, 1945 (Walker 1945, p.5)

Gender	Place of Origin					
	Always mining	Business & Professional	Farming	Labourers	Tin Mining	**Total**
Men	182	20	12	12	3	**237**
Fathers of Women	127	43	30	11	0	**214**

Paddy Moore described the family ritual surrounding a young boy's preparation for work in the pit:

> *In preparation for his job, the young boy would go with his parents usually to the co-operative store to get his water bottle and crib (meal) tin. He would also, if times were reasonably good, get a work shirt or flannel and a pair of boots. If finances would not allow this he would have to settle for some hand me downs from his dad or relatives.* (Moore et al 1998, p.8)

The journeyman process for coal miners generally commenced at the pit top with new employees undertaking tasks such as gathering and sorting miners' tokens for re-use or picking stone from coal. Work would progress underground with journeyman miners graduating to tasks such as operating ventilation doors, clipping coal skips onto haulage ropes and working with horses to haul full and empty skips around the mine.

> *This was the last stage before going to the coalface, to which they were promoted on the basis of seniority. As miners they learned the various skills such as timbering, erecting brattice for ventilation and laying rails. To become classified as a fully-fledged miner on the coal, you had to have worked three years with an experienced miner in and around the coalface.*
> (Moore et al 1998, p.8)

Evidence from all Australian coalfields suggests a consistent pattern of employment which dominated the communities in these areas. In these regions coal mining was numerically the predominant occupation and other occupations and businesses tended to rely on the production of coal. The predominance of coal mining in these areas was reinforced by the fact that males in coal mining families tended to follow previous generations into the industry.

Occupational homogeneity tended to create a shared understanding of position in society and a strong sense of cohesion. Class allegiance and shared action became important elements of these communities, as did a sense of division between workers and the enterprises for which they worked.

3.3.3 The nature of work – dangerous, unhealthy, but a source of pride and cohesion among workers, despite the status difference among the miners.

Until the 1940s hewers of coal were employed on a contract basis, being paid for what they produced, and many labourers and semi-skilled workers were paid day rates as employees.

The journeyman process which established a career path for miners ensured ongoing differences in the status of mineworkers. The differing modes of employment for different categories of workers tended to lead to conflict, however this was generally overlooked in the face of perceived outside threats or the challenges of an unsafe work environment.

Bulmer's concept of the nature of work in mining, which was "… dangerous, unhealthy, but a source of pride and cohesion among workers…" (Warwick and Littlejohn 1992, p.30) can also be clearly seen in the histories and memories of

Australian coal miners. Walker provides a typical example of this in his observation that the 1923 underground explosion at the Bellbird Colliery shaped the community consciousness of Cessnock. The deaths of 21 miners sparked a community outpouring of grief in which 25,000 people lined Cessnock's streets to pay homage to the dead.

When he interviewed residents of Cessnock over twenty years later in 1945 he noted the recollections of those alive at the time of the disaster (Walker 1945, p.6-7). Their observations provide an insight into community attitudes to the dangerous nature of coalmining:

> *AN OLD MINER: Bellbird made us "safety-conscious." We had thought there was no danger on this field. It meant the end of "open-lights."*
> *A MINER (employed at another pit): I had a bad attack of nerves after Bellbird and had to lose a week's work. I found myself jumping out of bed at night dreaming the roof was falling. Bellbird will never die in this town.*
> *A BUSINESS MAN: Because of day-to-day accidents there has always existed strong feeling about the mines and working conditions. The Bellbird disaster inflamed this feeling and made it a "mob-attitude."*
> *A YOUNGER MINER: Women became very afraid of accidents and fearful of their husbands' safety. At Aberdare mine fifty per cent of miners were absent for a week after the disaster. People everywhere became conscious of the pit-whistles, and it has made us all permanently fearful of accidents.*
> *A DOCTOR: Bellbird left a definite impression on the whole community. It increased the admiration of the town for those who risk their lives underground. It brought forth hero-worship for those who took part in rescue attempts. These men are still marked out in the community.*
> *A UNION LEADER: The miner has a psychology of fear. The pit is always a place where danger lurks, especially in deep pits. If gas is noticed in one working, the news spreads rapidly to the whole pit and puts the men on their toes. They will then grasp any opportunity to take a day off. Bellbird has its place in creating this attitude.*

The attitudes reflected in responses to the Bellbird explosion are echoed in other oral histories and accounts of mining communities. The prevalence of miners' monuments in many coal towns is evidence of the pervasiveness of this consciousness.

Plate 3.1: The coal miner as hero.
Lithgow's miners' monument to the 85 men
who have lost their lives in the district's mines
(Ray Christison)

The causes of death and disease were constant sources of conflict between employers and employees. Levels of death by accident, and the threats of dust diseases and premature blindness (*nystagmus*), were frequently quoted by mining unions as major issues to be addressed in the industry (Orr 1937, p.22, Davies and Davies, 1996).

3.3.4 Economic and political conflict

Coal mining tended to be a precarious occupation characterised by fluctuations in income. These resulted from a contract system of employment which:

- tied miners' wages to the capacity of mines to produce, and the capacity of the market to purchase coal, and;
- operated in an environment of wildly varying contract (or hewing) rates for coal cut.

McEwen charted wild fluctuations in the money wages for miners paid by the Australian Agricultural Company between 1862 and 1900 (McEwen 1979, p.68). Evidence from other areas indicates the vagaries of a system in which wages were dependent on a combination of hewing rate, days available for work, quality of the coal seam being worked and productive capacity of a mine.

The uncertainty of work in the industry is demonstrated in a sign erected on the side of the Lithgow State Coal Mine Office Building in 1939. This sign is shown in Plate 3.2. Miners were required to listen for a whistle at 6:00am each morning to indicate that there would be work for that day. A whistle at 3:30pm indicated no work for the next day.

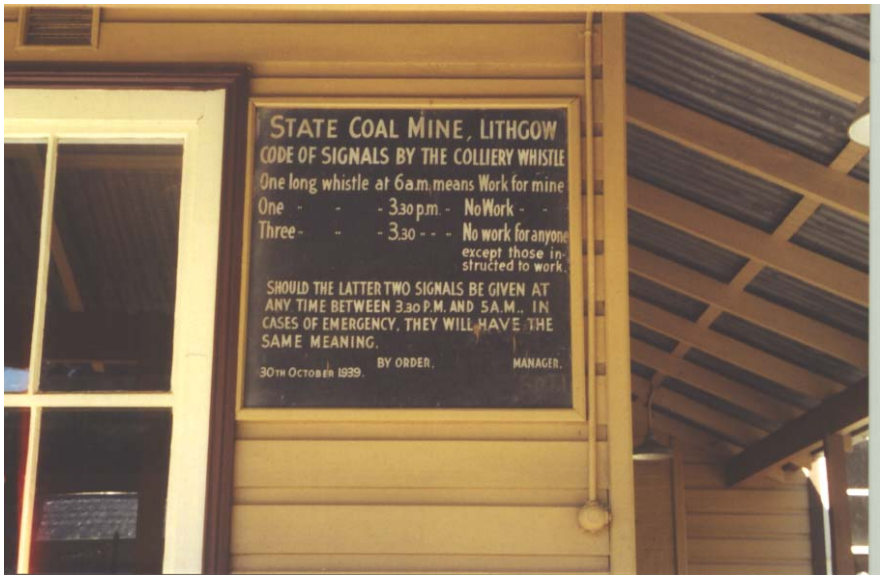

Plate 3.2: Code of whistles at the Lithgow State Coal Mine, 1939 (Ray Christison)

Variations of this practice were common across the NSW coalfields. Fred Kirkwood of Mount Kembla mine in the Illawarra recalled:

> *The whistle used to blow about half past eight of a night and they would blow for a three quarter shift or half shift at half-past eight of a night, there was a whistle. I can remember the boiler attendant used to blow the no work whistle at half past eight of a night. And I was sitting around at half past eight of a night to see if there was work the next day.* (Moore et al 1998, p.28)

Mechanical failures in the mines or lack of contracts for the sale of coal could lead to loss of productive time for miners. Former Lithgow State Coal Mine Undermanager, Dick Austin, recalled a dejected miner walking into the Manager's Office one afternoon in the late 1950's, after a day of failures in the underground haulage system, saying "I didn't get me darg today". In other words this miner was unable to reach his daily production target because the mine's mechanical systems had been unable to deliver empty coal skips to his workplace. (Austin, 1996) This loss of production would have been reflected directly in the miner's pay packet.

McEwen undertook a specific study of the standard of living of mining families in the Newcastle Coalmining District in the years 1862 to 1900. This study investigated actual wages and actual prices for commodities such as foodstuffs, clothing and housing (McEwen 1979, pp.70-82). She concluded that, in most years:

> *… for the average miner the respectable standard of living we have devised was more a goal to aspire to than a reality because for most of the period he was hard put to meet it. Of the 39 years for which data is shown, wages were greater than expenditure in only sixteen and equal to it in three. Moreover, when the total profit and loss for the period are added up, the answer is a clear minus. Thus a miner consistently earning average wages would have found it impossible to save in the better years to maintain a respectable standard in the bad. How far he could compromise on his standards of food,*

> *clothing and shelter and how close he came to primary poverty is impossible to tell. There is no doubt, though, that many would have agreed with the miner who in 1875 won second prize in an essay competition on the 'Past, present and future condition of the working class'. He wrote:*
>
> > *'Many think we are well paid for our labours but when all the expense which is connected with our calling is taken into consideration, it will be found that our wages are nothing remarkable. Very few are able to save enough though as sober and industrious as any other class.'* (McEwen 1979, pp.76-77)

The conditions described by McEwen in Newcastle appear to have existed in all coalmining areas of New South Wales.

In 1937 The Miners' Federation of Australia published a booklet setting out the case for new agreements in relation to pay and working conditions. This publication quoted the Davidson Royal Commission of 1929 into the coal mining industry in relation to wages. It noted that in 1928:

> *Slightly more than one-fifth of the miners earned less than the basic wage … A majority of all wheelers received less than the State basic wage during the year in question … About one-third of the men employed on wages below and above ground received less than the basic wages during the particular year.* (Orr 1937, p.12)

In many instances miners' housing was primitive with some mining communities existing basically as shantytowns. The village of Tyldesley, a coal mining community of approximately 200 people developed on the Mudgee Railway Line north-west of Lithgow from 1904, consisted of houses constructed of "found" materials, including brushes and mud, hessian bags, brattice, packing cases and kerosene tins. Other materials such as timber and corrugated iron were also used. (Christison 2002, p.12)

When describing the growth of Lithgow between 1869 and 1915, and apparent "inconsistencies in the spatial patterning and physical fabric of the town", Cremin noted that "we cannot see any structural manipulation of space" (Cremin 1989, p.35). She notes that "some employers had no interest in housing their workers, some had paternalist views and created housing development, others sold land to get some return on a disappointing investment." (Cremin 1989, p.35)

In this climate of haphazard development "… workers were never adequately housed …" and Lithgow developed into "… a worktown and a man's town, where women and children literally had not place" (Cremin 1989, p.35). This haphazard development inevitably led to "… a great deal of suffering …" (Cremin 1989, p.35). Cremin conjectured that the mining and industrial settlements of early Lithgow "must have been very similar to the favelas of Brazil today" (Cremin 1989, p.36). Until the early twentieth century housing in Lithgow continued to be confined to marginal areas (Cremin 1989, p.36).

Many coalmining communities developed on company-owned land with miners and their families paying ground rent. This situation could be used as a bargaining point

during periods of industrial disputation. In a major 1896 industrial dispute in the Newcastle Coalfields the J & A Brown Company moved to evict striking miners from their homes. The Sydney Morning Herald described these houses as follows:

> *The dwelling places are irregularly arranged along several gullies, which render systematic reticulation almost an impossibility. These dwellings are typical miners' homes, in the main consisting of two or three rooms and a skillion, each provided with a small plot of ground. In the majority of cases the miners themselves were the builders, the structures, which consist of weatherboard with iron roof … The miners were originally the lessees of the firm, but the leases have expired … the miners have been tenants at will… (Ross 1970, p.81)*

The government township of Kurri Kurri was established on the South Maitland coalfield in 1903 after ongoing "agitation by the miners and their leaders and the district's political representatives for a town to be laid out on the new coalfield" (Coalfield Heritage Group 2003, p.12). The first sales of land in Kurri Kurri were reported in the Newcastle Morning Herald on 23 January 1903. The newspaper reported that Kurri Kurri would advance "if only by reason of the land being sold as freehold" (Coalfield Heritage Group 2003, p.15).

The Newcastle Morning Herald noted that the miners wanted to own the homes "established by hard earnings":

> *The present surrounding townships lying to the east and south, Stanford Merthyr and Pelaw Main, respectively, are constructed on leasehold premises. Liberal as these conditions may be, they are always objectionable to workmen. Leases at 6d. per week are granted to employees on the Stanford Merthyr Estate, and as in the case of the leases at Pelaw Main, any buildings that are erected can only be sold to other employees tenants of the company.* (Coalfield Heritage Group 2003, p.15)

Evan Thomas Philips, a miner from Aberdare on the South Maitland Coal Field, recalled houses occupied by his family. They migrated from South Wales in 1922 their first dwelling was a bag humpy.

> *The situation at the time was that around the mines people built bag humpies with bush timber. They would build these in the vicinity of the mine, not really set out in streets but on the basis of the law of the Miners Right. And this is what my father did with the help of an Australian he knew. They cut the poles and they built a two room bag humpy with whitewashed bags on the outside and bags on the inside prepared with newspaper. The floor was again bush timber, axed over to make it flat and the flooring was opened out explosive boxes.* (Moore et al 1998, pp.97-98)

Phillips also described the furniture which consisted of a table made from the top of a cable reel and chairs made of explosive boxes. He noted that "once the miners took their explosives and the boxes were empty, then you had the right to take the empty boxes, but you had to make application for them." (Moore et al 1998, p.98)

His recollections also included a description of a second house which consisted of a single weatherboard room and two bag humpies with bare earth flooring. The chimney of this house was constructed from bush poles clad in opened-out kerosene tins and a round pipe fashioned out of flat galvanised iron as a chimney stack. (Moore et al 1998, p.98).

The situations described at Tyldesley and Aberdare reflect the more extreme circumstances faced by miners and their families. Each however demonstrates types of adaptive re-use of artefacts common amongst mining communities prior to the 1950's. The types of dwellings described in each of these villages also reflects the general style of rudimentary housing common in subsistence gold mining areas in the late nineteenth century (Lawrence 1995, pp.64-66).

The living conditions of coalmining families appear to have been an issue of ongoing concern in all coalmining districts of New South Wales. A special health inquiry undertaken in the 1950s included evidence by the Reverend Alan Walker of the Methodist Church regarding living conditions on the South Maitland Coalfields. This exposed poor living conditions and recommended a special scheme for rehousing. (Ross 1970, p.401)

The 1946 Davidson Committee reported on "causes of the sickness" in what was considered "a tottering industry" (Ross, p.399). This report identified two causes of the state of the industry as being "'anxiety of the mineworkers as to the future security of their employment', and 'the drab industrial surroundings and defective living conditions and social amenities in a few areas'" (Ross 1970, p.399)

Subsequent union and New South Wales Joint Coal Board activity attempted to raise the working and living standards of miners in New South Wales. During this period the emphasis of union campaigning was placed on so-called "'bad spots' – such as Catherine Hill Bay, in Northern New South Wales, a drab settlement of unpainted houses, owned by the mining company, little better than shacks, with no electric light or water reticulation." (Ross 1970, p.411)

Contract miners were required to pay for their own tools, lights, fuel and explosives. They were also charged to have tools sharpened or repaired at the mine. Roy Coltman was a miner who worked at the South Bulli colliery for most of his working life. He made the following recollections regarding the supply of tools and equipment:

> *Never supplied us with anything. We had to buy everything. We had to buy the powder, all our tools, our pit shovels and drills, machines, borers, boots, clothes, everything. Well, in fact we had no clothes. We only had a short loincloth, sugarbag for a loincloth and a pair of hobnail boots. No socks.* (Moore et al 1998, p.21)

Roy Hegarty, who worked at Wongawilli colliery from 1924 to 1965, noted that miners were required to purchase and maintain all of their own tools:

> *"You bought all your own tools and powder, you bought that. You went to the magazine, there was a man there to issue your powder out and he put down the number. There was a token for each pair of men. He took the token number*

> *of the powder, booked it down and you paid for that at the end of the fortnight.* (Moore et al 1998, p.79)

During the 1930s the Miners' Federation of Australia, as part of a scheme intended to reduce injuries, "approached the coal owners, the big insurance companies and the Government" to establish a program in which all three shared the cost of provision of safety hats to mineworkers (Orr 1937, p.18). This request was refused.

Fred Kirkwood, a Mount Kembla miner, recalled conditions when he started work in 1923:

> *There was no bathrooms and toilets around the place, there was no first aid room, no lunchrooms and there was no road into the mine site. You had to walk in by track to get to the mine.* (Moore et al 1998, p.24)

Conditions such as these, and the generally poor relationships which prevailed between miners and their employers created an atmosphere in which it was considered legitimate to remove artefacts from worksites for re-use in domestic situations.

In the company houses occupied by mining families at Minmi it was common practice to minimise electricity bills by interfering with electricity meters installed by the Caledonia Company. In this instance a strand from a millet broom was inserted into the meters to prevent the meter wheel from turning and registering the use of electricity. Miner's wife and Union Women's Auxiliary member Grace Scanlon justified this practice as follows:

> *The men had no compunction about doing it because they reckoned the Caledonian Company had their worth out of them in the first place. So the Caledonian Company owed them! It was survival.* (Moore et al 1998, p.24)

The notion of survival in coal mining communities is highlighted by evidence gathered by McEwen that:

> *In 1881 it was common knowledge that some Wallsend families were living on boiled bran, whilst 'pretty near starving' was the term used to describe miners' families during slack times at Lambton in 1890 and Plattsburg in 1891.* (McEwen 1979, p.82)

Conditions appear to have improved only marginally by the middle of the twentieth century.

McEwen observed that during the nineteenth century there was a gradual deterioration of relationships between employers and employees in coal mining communities. She concluded that:

> *"the behaviour of employers in industrial relations and self-interested attitude to problems of local government led to a growing belief among the working class that there was no identity of interest between labour and capital."* (McEwen 1979, p.369).

Plate 3.3: Class struggle in a mining town. Joy Barrington of the Communist Party of Australia addresses a rally in Lithgow Park, May Day 1929
(Jack Blake Archive, City of Greater Lithgow Mining Museum Inc)

An ongoing atmosphere of what Edgar Ross described in his history of the Miners' Federation of Australia as "irregular working and 'tit for tat' between employers and employees" (Ross 1970, p.15) led to almost incessant class warfare in coal mining communities. The failure of employer philanthropy and the rise of employee self assistance in the New South Wales coalfields were themes which have a strong resonance with many issues applying to the social landscape of mining communities in the United Kingdom.

The coalmining industry in Australia has been characterised by employer-employee conflict through most of its history. When commenting on the loss of production "… of 1,539,000 ton of coal in 1947 through industrial disputes …" a spokesman of the Joint Coal Board said "… The industry was shot through with bitterness and antagonism deriving from a ruthless history without parallel … there was widespread cynicism and pessimism." (Ross 1970, pp.405-406)

3.3.5 The whole: close knit and interlocking collectives based in a shared history

This characteristic of mining communities can be clearly demonstrated in the strong traditions of self-help and community action which developed in all coalfield communities. This is exemplified in New South Wales by the co-operative movement. Co-operative stores were established in most coal mining districts from 1885. Co-operatives were formed in Mt Keira and Helensburgh (Ross 1970, p.45) in the late 1880s and eventually a strong co-operative movement developed across the Illawarra.

In 1891 a co-operative society was established in Lithgow. In the same year the West Wallsend Co-operative Society was formed. This eventually became one of the largest retail establishments in Newcastle (Ross 1970, p.45). McEwen identified that seven of the nine retail co-operative societies registered in New South Wales in 1898 were located in coal mining districts (McEwen 1979, p.94). She also noted that in the years

1870 to 1900 miners represented 57% of the workforce of the Newcastle Coalmining District and 83% of the members of co-operative societies (McEwen 1979, p.99).

The strength of these co-operatives can be illustrated in the breadth of enterprise and infrastructure which they developed. The Lithgow Industrial Co-operative Society maintained branches in up to 22 suburban and village locations in the Lithgow region (Ryan & Jenkins 2001, p.5). In its heyday this co-operative operated farms, orchards and an abattoir, as well as pharmacies, bakeries, butcheries, groceries, beauty salon, mercery and general goods retail operations.

In the Illawarra the Woonona Co-operative Society constructed a massive bakery in 1928 which initially produced "17,000 loaves of bread per week, as well as cakes and pastry, and within a short while that output was greatly exceeded" (Irving 2001, p.58)

Patmore notes that, following a serious Lithgow mining accident in 1896, the injured were required to be transported to Bathurst, 50 miles (80 kilometres) away. This incident led to the establishment of a hospital committee which raised funds to build a cottage hospital (Patmore 2001, p.268) This represented the commencement of ongoing involvement of the mining community in the provision of health and emergency services.

The development of self-help traditions such as retail co-operatives and community funded health services tended to set mining communities apart from other communities in Australia. These traditions were reinforced by the parallel development of strong trade unions in all coalfields communities. McEwen noted that:

> … *the union and the cooperative gave the colliery townships a distinctive way of life which marked them off from other areas and in this way contributed something to the growth of a close-knit society.* (McEwen 1979, p.106)

Coalmining towns in New South Wales can be demonstrated to reflect the characteristics of mining communities identified by Bulmer and affirmed by Warwick and Littlejohn as applying to English coalmining communities. The following section further discusses the geographic size and characteristics of New South Wales coalmining communities with the objective of determining the potential distribution of artefacts removed from mining sites.

3.4 Case studies of coalmining communities

3.4.1 Case Study: Tyldesley Village - A lesson from the decline of a coalmining community

The rise and decline of Tyldesley Village illustrates a number of themes relevant to the definition of the characteristics of coalmining communities.

Tyldesley village developed from 1904 around the headworks of the Great Western Colliery. This mine was developed alongside the Mudgee Railway Line by the Great Western Mining Co. Ltd. Employment at the mine between 1904 and 1916 (Schmitz 1988, pp.78-79) was as follows:

Table 3.5 Employment Great Western Colliery, Tyldesley

Year	Employment		Year	Employment	
	U'ground	Total		U'ground	Total
1904	1	2	**1912**	11	13
1908	3	5	**1913**	11	14
1909	19	51	**1914**	13	17
1910	27	39	**1915**	16	19
1911	8	10	**1916**	18	21

In 1916 the colliery was taken over by the Tyldesley Coal Mining Co. Ltd. and its name was changed to the Tyldesley Colliery. Employment at the colliery between 1917 and 1928 (Schmitz 1988, pp.78-79) was as follows:

Table 3.6 Employment at Tyldesley Colliery

Year	Employment		Year	Employment	
	U'ground	Total		U'ground	Total
1917	42	51	**1921**	82	107
1901	32	39	**1922**	52	70
1919	40	56	**1923**	49	68
1920	61	82			

The population of the village was estimated by former miners to be approximately 200 hundred persons. All families in the village, apart from the teacher at the small village school, drew their principal livelihood from the mine. Houses were established on company land and were of basic construction. Until the extension of electricity supply from the mine in 1942 kerosene was used for lighting (Christison 2002, p.14).

Various ex-residents of the village recalled the make-up of houses in this community:

- Bill Tilley recalled that the village was made up of houses, most little more than huts made of all materials. Many huts were made of wattle and daub with tin roofs. They were lined with hessian or brattice which had been whitewashed. Floors were either dirt or made of gelignite cases. (2002)
- Edwin Young noted that, on moving to Tyldesley, his family first lived in a tent before taking over a half-finished house. The house was primitive, although it had an inside kitchen. (2002)
- Eric Young remembered his family home as being half wattle and daub and the rest made of chaff bags sealed with newspaper. They relied on tank water and a pan sanitary service. The bathroom and laundry were outside with a copper for heating water. (2002)
- Stan Green's description of his grandmother's house at Tyldesley during the 1940's provided a further indication of the style of dwellings in the village. He described the house as being made of corrugated iron lined with bagging and newspapers. It consisted of three bedrooms and had a good vegetable and flower garden with chickens. (2002)
- Christopher McCann described the house built by his father as wattle and daub. With an outside laundry and bath house with a copper to heat water and a round galvanised bath. The house also had a well and tank water. The family kept a vegetable garden, fruit trees, goats and pigs. He recalled his sister having a house with a chimney made of 44-gallon drums. (2002)

Plate 3.4: The Doble residence at Tyldesley – 1940s
A house, like all in Tyldesley, constructed of "found" materials
(Photo courtesy of Jim Bannan, Lithgow)

The village contained only basic services with no formed roads, no town water and a sanitary pan service. Goods were supplied from a combined general store and post

office and by deliveries of fresh produce from nearby towns. At times residents supplemented their food supplies by fishing, rabbiting or poaching sheep from nearby farms. Entertainment was basic and confined largely to cricket and tennis (Christison 2002, pp.14-18).

It appears that, up to the 1940's, most of the workforce resided in or near the village. Increasingly from this period miners chose to live in better-serviced communities which were at some distance from the mine. A number of miners recorded to have worked at the mine in this period lived in the township of Cullen Bullen which is about a mile [1.6 kilometres] distant from Tyldesley, or Portland about 3 miles [4.8 kilometres] away.

During the same period considerable effort was being made to improve the living standards of miners and their families through the provision of modern housing in accessible locations. These moves occurred at a time of increasing mobility brought about by the wider availability of the motorcar and improvements in roads and other transport. Miners' journals of this era increasingly record the use of motor vehicles by miners to travel to and from work. The Coal Miner magazine of October 1950 reported that Jack Harrison, Tyldesley Colliery clerk, lived in Cullen Bullen "but won't be able to drive to work in his new Vauxhall Wyvern as he reckons the roads are too rough after the floods" (The Coal Miner October 1950, p.5).

Evidence from Tyldesley suggests that, with improvements in housing standards in other parts of the region, families tended to drift from more spartan living arrangements to larger townships with more modern facilities. Whilst there is no available evidence directly linking these industry moves to the decline of villages such as Tyldesley it is logical to suggest that the provision of improved housing in other parts of the Western Coalmining District may have encouraged families to move away from the village. (Christison 2002, p.20)

The Tyldesley Post Office closed in 1956 following a significant population decline. The village had virtually ceased to exist by the early 1960s (Christison 2002, p.20).

Tyldesley Village was developed in an era when limited options were available for transport to and from work. Its residents were dependent on the coalmine for their living and tended to live in makeshift houses clustered close to the pithead. The village suffered rapid decline in the 1950's in response to a number of environmental changes, including:

- Relocation of the colliery headworks during the early 1950s
- General decline in employment at the colliery due to the advancing mechanisation of coal mining
- Growing mobility of the mining workforce.

Families at Tyldesley appear to have lived an almost subsistence existence, living in un-serviced shanties and taking great effort to supplement wages by growing vegetables, hunting and poaching. Oral histories provide very little evidence of any real relationship between the Tyldesley Coal Mining Company and its employees, apart from the mine being a place of work. These observations are consistent with

analyses made of other coal mining communities and affirm Bulmer's characteristics of mining communities as follows:

- Economic predominance of mining and social consequences of occupational homogeneity. This is particularly evident in the fact that almost all residents of Tyldesley derived their principal source of income from the Tyldesley Colliery and the village existed purely as a place of residence for workers employed at the mine.
- Social consequences of occupational homogeneity and isolation. Tyldesley was a one-class community with no social mobility. Many families remained in Tyldesley until the mine headworks moved in the 1950s.
- Close knit and interlocking collectives. These were evident in the levels of co-operative activity, particularly evident in the area of entertainment.

3.4.2 Case study: The Lithgow State Coal Mine – a large enterprise in a complex community

The Lithgow State Coal Mine was established as an excursion into state owned enterprise. In the period following the establishment of a Victorian State Coal Mine at Wonthaggi in 1909 the New South Wales government began to explore the possibility of venturing into its own coal mining operation (Pratten & Irving 1994, pp.5-6). It was argued that a state owned coalmine could break the government's reliance on private enterprise to supply coal to railways and tramways (Pratten & Irving 1994, p.6).

In 1911 the Minister for Mines claimed that a suitable site for a state coal mine had been chosen on the Newnes Plateau (Pratten & Irving 1994, p.6). Despite this the headworks for the mine were eventually developed at the upper end of Mort's Gully on the outskirts of established residential areas of Lithgow (Pratten & Irving 1994, p.7). This placement was attributed to "political wire-pulling" (Pratten & Irving 1994, p.8) and created a situation described in the 1940's by the State Coal Mines Authority as follows:

> *Because of the situation of the shafts … the main headings had to be driven a distance of over a mile before it was possible to open out and form production districts… Normally, in the development of a shaft mine, it is aimed to place the shaft at a central point within the holding … from whence mining operations can extend in all directions and so reduce mining, and particularly haulage costs* (Pratten & Irving 1994, p.8)

Plate 3.5: Lithgow State Coal Mine 1929. Miners walk home in the snow
(The Palfreyman Collection - The City of Greater Lithgow Mining Museum Inc)

The Lithgow State Coal Mine "was one of the largest employers in the New South Wales coal industry." (Pratten & Irving 1994, p.13) Employment in the mine at various years during the 1920s was as follows (Pratten & Irving 1994, p.13):

Table 3.7 Employment at Lithgow State Coal Mine

Year	Employment	
	U'ground	Total
1922	86	349
1926	393	588
1929	598	734

The State Coal Mine's workforce was drawn from the City of Lithgow. When constructed its headworks were within four kilometres of eight other active collieries (Armstrong 1991, p.4) and were adjacent to the housing estate established in 1890 on the land previously owned by Thomas Sutcliffe Mort (Cremin 1989, p.38).

The larger 1908 residential development of the Extension Estate was within walking distance of the mine. Despite this the pressures of growing employment and population pushed some families to repeat the pattern established in other coalmining areas and build makeshift houses on land owned by the mine.

The State Coal Mine was plagued with industrial troubles and absenteeism. As Pratten & Irving state:

> *Even in the middle of 1944, well before the close of the war, the then-Manager, Mr A Donne, continually commented on the very high levels of absenteeism in the mine workforce. The figure regularly quoted in reports hovered around twenty percent, but two days before Christmas 1944, only five miners reported for work out of a possible 180. After the holiday period, in the Manager's report dated 6/1/1945, the absenteeism level of 35.5% was recorded as "satisfactory"!* (Pratten & Irving 1994, p.17)

As early as 1926 State Mine management meetings were expressing concern at the number of "malingerers at the mine" who were on accident pay. This became a regular topic at monthly conferences. At the bi-monthly conference of 14 September 1926 it was noted that similar problems had occurred in the Northern Coalfield (New South Wales Government Railways, 1926).

Plate 3.6: Lithgow State Coal Mine 1950s looking towards Lithgow.
Morts Estate can be seen immediately below the mine site.
(The Palfreyman Collection - The City of Greater Lithgow Mining Museum Inc)

In addition to the ongoing problems with absenteeism State Mine workers regularly found reason to take strike action for a range of grievances. Former State Mine worker Les Coleman was employed in a variety of surface and underground tasks in the early 1950s. He recalled that:

> *… rarely did the mine work a full fortnight. There was the inevitable strike at least one day per fortnight …* (Coleman undated, p.2)

Many of the miners maintained secondary occupations to supplement their incomes and during times of industrial disputation it was not uncommon for miners in the Western Coalfield to carry out hunting, poaching or to establish small gold mines. A related aspect of materials removal from coal mines included the use of carbide

supplied for miners' lamps to build bombs which were used for stunning and catching fish.

In the period leading up to the closure of the mine in 1964 the Lithgow Mercury featured an article identifying the unique and privileged position which State Mine workers had held in the coal industry:

> … *State Mine … employees were, in earlier days, a social caste above other miners in the district and enjoyed amenities and privileges, including free holiday rail passes, not shared by private miners.* (Pratten & Irving 1994, p.24)

Recollections of former miners at the State Coal Mine provide little evidence of this sense of privilege. They do, however, recollect a sense of camaraderie and their conversations reflect the sense of class conflict and alienation from "management" which seem common in this restive industry.

Even in their apparent privileged position State Mine workers apparently retained strong resentments which led them to exercise high rates of absenteeism and strikes. These workers also actively participated in a range of collectives and were responsible for developing and providing volunteer labour for community services, including the Lithgow Ambulance Station (Curry 2001). They displayed high levels of economic and political conflict and also exercised high levels of pride and cohesion.

3.5 Conclusion

In their 1992 study Warwick and Littlejohn identified a range of characteristics of a "typical" mining community which applied in areas identified within the British Isles. It is evident from a range of studies undertaken in Australia that these characteristics can be applied generally to coalmining communities in this country.

Factors such as the economic predominance of mining, the dangerous nature of work, a one-class community, economic and political conflict and the development of close-knit interlocking collectives (Warwick & Littlejohn 1992, p.30) have created communities with clear divisions and clear allegiances. These communities have also been demonstrated to present clear cases of hardship and resentment.

The available evidence indicates that coalmining communities were established in relatively haphazard patterns. Patterns of settlement can be roughly divided into two phases. The generally identified characteristics of each of these phases can be summarised as follows:

Phase 1: 1831 to 1946

Coalmines in this period were generally worked using manual labour and a minimum of mechanisation. Mining methods and transport required large numbers of workers who generally were employed on contract or piecework arrangements.

Communities of mining families developing around or nearby the head works of coal mines. The locations of these communities in relation to the coal mine were dependent on:

- The land made available by the mining company for the establishment of dwelling places
- The location of dwellings constructed by the company to house miners and their families
- The availability of dwelling places in nearby towns
- The availability of public transport to and from the mine in the form of:
    - Workers' trains, or
    - Workers' bus services (during the twentieth century)

In this era it appears that most miners travelled to work on foot, by pushbike or on horseback. In addition the vast majority of coal miners were engaged as contractors who were required to supply their own tools and equipment.

Phase 2: 1947 to present

The year 1947 has been chosen to mark the beginning of this phase as it coincides with the creation of the Commonwealth Coal Industry Tribunal. This replaced the Central Industrial Authority created under the Coal Production (War-Time) Act 1944 (ATUA 2002). Under wartime provisions the Commonwealth Government had been provided with authority to co-ordinate production and development in the Australian coal industry. In the post-war era the Commonwealth continued to use its powers to commence the rationalisation and modernisation of the national coal industry. During the 1950s these powers were resumed by the states and the reform process was continued at this level. Interestingly the year 1947 is consistent with the year identified by Davies and Davies as the date of commencement of modernisation in Welsh coalmines (Davies and Davies 1996, p.8).

This period is characterised by rapid modernisation of the coal industry and a range of interventions to enhance the amenity of housing for miners and their families. In New South Wales the successor to the Commonwealth Coal Industry Tribunal, the Joint Coal Board, developed modern dwellings in centralised locations which could be serviced with electricity, town water and sewerage.

Increasing mechanisation and the closure of less efficient mines led to a general downturn in total industry employment between 1945 and 1960. "Of 140 mines in production in 1953-54, 55 had ceased production" by 1960 (Ross 1970, p.493).

During this period the motorcar made increasing inroads into private transportation. There is evidence to suggest that miners began to use private vehicles to travel increasing distances to work. In doing so they abandoned many settlements which had been established close to the head works of collieries.

The definition of coal mining communities becomes more problematic in this period for the following reasons:

- Decline in the number of collieries and of total numbers in the workforce

- Increase in distances travelled by miners to and from work
- Decline of smaller mining settlements with a corresponding increase in the size of larger communities on the coalfields
- Increase in the size and productive capacity of coal mining ventures and consequent rationalisation of the total number of mines.

It has been demonstrated that, regardless of the size of a community, an atmosphere of conflict between employers and employees prevailed in coalmining areas. In these circumstances it should be expected that employees would take opportunity to, either legally or illegally, remove useful artefacts from mining enterprises. Such artefacts have been identified in oral histories to include explosives boxes which were acquired legitimately by employees. Evidence from mining communities also indicates that other items such as kerosene tins, brattice and 44 gallon drums were recovered to assist in building dwellings.

In addition it has been established that miners were required to provide the tools of their trade and ancillary equipment related to their employment in the mines. These tools and equipment typically included:

- Work clothes
- Cap lamps
- Crib tins and water bottles
- Picks and shovels
- Coal boring equipment
- Consumable items associated with coal mining, including explosives and fuses

Certain items were also issued to miners by mining or employee organisations. These included items associated with pay practices, trade unions and social and cultural activities. Practices of removal of a broad range of artefacts would have been part of the *habitus* of coal mining communities.

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