IDENTIFYING FACTORS CAUSING DAMAGE TO WELSH COAL MINING COLLECTIONS

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Abstract

A Burning Issue, is the Council of Museums in Wales' survey of coal mining collections held in Welsh museums. The research undertaken offered a unique opportunity to research historical and technical details of the collections. It was also possible to investigate the condition of the objects and the factors which may have contributed to this.

The paper outlines the survey method. This includes an assessment of the validity of the data collected and a discussion about identifying the critical factors from the survey affecting the decay of the collections.

Analysis of the results allowed comparisons of object condition with a number of criteria. This comparison leads to a demonstrable correlation between physical protection and environmental conditions and the level of damage to mining collections in Wales.

Introduction

I saw the riches of the earth crumbled before picks and taken away by the shovel. It came to me presently, as with all other things, those riches would have an end. The money would not be paid, for there would be none for master or man. The pick and shovel would rust. The collieries would be left to flood water and rats. The men would go. The houses would empty. The chapel would be dark. The grass would try to cover all, out of pity.

And I was afraid.

How Green Was My Valley
1939 [1]

A Burning Issue, the Council of Museums in Wales survey of the coal mining collections held in Welsh museums, is the latest in a small group of such reports which have been responses to the rapid UK colliery closure programme of the 1980s and early 1990s. [2,3,4,]

The need for a survey of Welsh coal mining collections was raised by some members of the museum community in the early 1980s. [5] The Welsh coal industry had contracted during the 1960s and further closures seemed inevitable during the 1980s. A comprehensive handlisting of items held by various organisations would be needed so that gaps in collections could be identified and, hopefully, filled from closing collieries.

In the event the pit closure programme was more rapid than anyone had predicted. Most museums had financial problems; lack of staff meant that even simple handlisting was often out of the question. There was little discussion between museums about collecting policies. Museum staff, realising that this was the last opportunity to collect mining equipment, accepted almost everything offered to them.

It was not until the early 1990s, when only two deep mines remained in Wales, that a small working group was set up, under the auspices of CMW, to explore the feasibility of undertaking an in-depth survey of coal mining collections.

The Researcher

From the start it was agreed that any survey should not be desk-bound but

'hands on', with the researcher visiting as many organisations, and viewing as many objects as possible. With this in mind it was decided to appoint a person with a good knowledge of the mining industry as research assistant.

The Survey

Aims and structure

The main aims of the survey were as follows:-

1. *To research, create and make available a comprehensive computerised data base of museum coal mining collections.*
2. *To assess the nature of individual collections.*
3. *To identify gaps and advise on an integrated collecting policy.*
4. *To evaluate collection management.*
5. *To examine financial and marketing strategy.*
6. *To review the future.* [6]

The Welsh survey differs from its companions, in that its primary aim was the creation of a computerised database. [7,8] The research undertaken for the database offered a unique opportunity to ask as many questions as possible. As well as researching historical and technical details of an artefact it was possible to investigate its condition and where it was stored.

Collections were located by sending out a simple questionnaire asking various institutions if they held coal mining related material.

The visits comprised an informal interview with the person responsible for the collection, examination of the accession registers (if applicable), and a viewing of all storage and display areas. Because of the 'hands on' nature of the project permission was sought to inspect all coal related artefacts in the institution's collection - this had two aims:

i) To ensure that the documentation had correctly identified the object.

ii) To determine the condition of the object.

The database covers all items directly connected to the coal mining industry, except buildings, photographs, archive and published material.

The data base now contains details of four thousand five hundred and thirty six items held at twenty-six institutions - major collections being located at *Bersham Ironworks & Heritage Centre, Big Pit Blaenafon, Cefn Coed Colliery Museum, South Wales Miners' Museum, Rhondda Heritage Park and the Welsh Industrial & Maritime Museum*.

Constructing the conservation survey

Scale and scope

It must be stressed that conservation was not the primary objective of the survey and that the researcher had a background in coal mining and Welsh history rather than in conservation. Therefore, in order to fulfil aim 4, 'To evaluate collection management' a simple guide to asking questions and recording information was required. Areas of study were considered which could provide indicators on the condition of collections and on the range of factors which may have contributed to that condition. This may also help to identify measures which could be implemented in the future and

contribute in a small way to aim 6, 'To review the future'.

Two areas which we thought could be surveyed relatively easily, and would provide useful information, were the object condition and quality of the storage environment. *

Condition

A number of condition surveys have been developed by museum staff, and a common factor is the use of a 1-4 condition grade. [9,10,11] These overall grades are normally based on an aggregate score from a number of sub categories of damage. Inconsistency in ascribing a value may be reduced by this breakdown of damage categories but this technique was not employed for a number of reasons, two of which are worth elaborating on.

The first is that most published work on the results of collection surveys concentrates on the interpretation of the condition grade alone rather than a detailed discussion of the sub categories. Neither the resources nor the inclination were available to collect data which would not be used subsequently.

The second reason was that a single person was to assess all items over a relatively short period of time, so there was no need to collate results of researchers with different perceptions. [12] Descriptions of collection condition are not intended to be absolute but in these circumstances are made on a subjective but reliable basis. These definitions should therefore create a scale which allows a general comparison of the condition of items; and so allow an insight into the factors which affect their condition. As condition was assessed by a single researcher (following discussions with conservators) the relative values of the categories were assumed to be valid. The condition of an item was categorised as simply as possible;-1= good, 2= fair, 3= poor, 4= bad.

It is usual for some mining museums to retain original dirt and refrain from repairing any damage associated with the original function of the object and this policy was taken into consideration in the condition assessment. The condition grade was based on damage that had been caused within the museum rather than on the coalface. An extreme example of this is a lamp which survived the Abercarn explosion of 1878 and was recovered when old workings were explored during the 1920s. The gauze and pillars were missing, the base of the oil vessel was burnt away and the glass showed the effects of great heat. However, this object was given a '1' on the database. On the other hand a perfectly useable NCB issue rubber kneepad which had suffered the effects of a leak of corrosive battery acid in the museum store was given a '4'.

It may be impossible for this process to be entirely accurate, but the researcher's comprehensive understanding of the original functions and history of the artefacts should ensure a high level of reliability. By discounting as much intrinsic damage as possible, the results should be a better indicator of current threats to museum mining collections.

The existing documentation of the collections was often very basic and did

* For the purpose of the survey store describes conditions both in store and on display.

not always contain enough information to adjust the assessment based on the age of the artefacts or their condition as they arrived at the museum. Neither of these factors were therefore taken into consideration.

Storage

In describing the quality of the storage of an item, two questions were used as indicators. One addressed the environmental and the other the physical protection of the item.

The first question looked at the building, or lack of it, in which the collections were held. Conditions could range from open air, and therefore uncontrolled light, humidity and pollution etc. to a closed building where the humidity changes would be buffered, and light and pollution levels reduced. The two intermediate options were artefacts in the open air but sheltered (OC), and artefacts held in what was described as an open building (OB). An open building, one with permanent or daily openings in the building fabric, whilst sheltering an artefact, would closely replicate outdoor conditions.

The second question looked at the quality of storage of an item. The indicator of the quality of physical protection was whether objects were stored individually or were piled up on top of each other. Items which were piled on top of each other without enough space were described as 'yes' piled up. Where an item was free standing or had a distinct space on a shelf it was entered as 'no', not piled up. Objects which were correctly packed and supported in boxes were recorded as a 'no'. Although not an absolute guide it is reasonable to assume that objects which are piled up are not being handled with the same level of care as objects which had been stored more thoughtfully.

During research the amount of objects in the open air under shelters was discovered to be negligible and these results have been merged with open air. Also only three items were categorised as bad so the categories of poor and bad were merged.

Results

Working with the database it is possible to compare the condition of the objects with any of the other criteria. Several relationships were investigated and rejected as the results were not considered relevant or meaningful.

Comparison by museum was not considered to be useful for two main reasons. The first is that different museums had acquired collections from different periods of mining history. Therefore, some museums have archaeological items whilst others had collections which had only recently passed out of use. The second reason is that most of the items assessed were ones which had been accessioned into the museum collection. Where not all items in the museum are accessioned the process had often begun with the best material. In contrast museums with no accessioning backlog were more likely to have accessioned the poorer items of the collections. Consequently, a well managed museum could appear to have a collection in worse condition than a museum with documentation backlogs.

Comparisons of object condition by date of manufacture could have been a useful exercise. Unfortunately within the scope of the research, and working with the existing museum documentation this was not possible.

In contrast other correlations were investigated and found to produce meaningful and useful results.

The effect of storage on condition

The correlation of condition against storage, attempts to quantify what must be a common sense assumption that the quality of the storage environment will affect the condition of the collections held there.

Results are summarised in Figure 1 which compares object condition with storage environment for all of the collections surveyed (by August 1996). Along the horizontal axis the six different storage conditions are listed (open air/piled up, closed building/not piled up etc.). The vertical axis represents the amount of objects in each condition category (good, fair, poor) as a percentage of the total in that storage environment. Total numbers in the categories are included as data labels on top of each bar.

An initial review of the results demonstrates quite clearly a continuous improvement in the condition of the collections as the quality of their environment is improved. In the best environment, a closed building with enough space for each item, nearly 90% of items are described as being in good condition. In the worst environment, of objects piled up with no shelter, less than 10% of items are in good condition.

There are however other, more subtle, trends which can be identified. Comparing the poorer environments (open air, OA, and open building, OB,) it is the quality of the physical protection which is the crucial factor in collection condition (Are the objects piled up? Yes or No). Table 1 separates out the figures to look at this point in more detail. Comparison of the percentage of objects in good or fair condition with the different types of storage conditions demonstrates fairly similar results for both open air and open buildings. This indicates that when the environment is poor the physical protection is the more critical factor.

Items categorised as Good or Fair

	Piled up	Not piled up
Open Air	21%	80%
Open Building	25%	93%

Table 1

Moving to the closed building where environmental factors would be expected to be more favourable to the artefacts they are in much better condition. Physical protection, although still important, is a less decisive factor.

Items categorised as Good or Fair

	Piled up	Not piled up
Closed Building	95%	98%

Table 2

In the poorer storage environments, (OA OB.), the percentage of the items classified as good did not exceed 18%. In the closed building 65% of the items which were piled up were classified as good, and 88% of the items not piled up were classified as good. This is a clear indicator of the relationship between the environment in which the collection is held and its condition.

It is worth noting that the closed building described in the survey does not necessarily provide ideal environmental standards. [13] To be described in this way a building merely had to provide continuous shelter. Better standards such as stable RH and low U/V and light levels should also be an objective when housing important or vulnerable collections. [14] Nonetheless, a closed building where objects are stored with moderate physical protection, can be

seen to provide significant levels of protection. This could be a realistic benchmark for minimum standards of care for all but the largest objects.

When survey results agree with previously held assumptions it is tempting to view them uncritically. We wanted to avoid this and challenge these results. In particular we asked whether the results prove that damage is the direct result of poor storage, or if items which arrive at the museum in poor condition (damaged) are put into poor storage.

Working with the existing database an attempt was been made to check this. There were no reliable records of object condition prior to acquisition so a more imaginative solution had to be found. We attempted to identify objects which may have been in good condition on arrival, which would then have been allocated the best storage environment. This was done by identifying a group of 'emotive objects'. These artefacts are ones which are easy to sympathise with; for example, symbols of the mining industry, valuable items or artefacts likely to be used in displays and interpretation. A selection was made from the database categories. Categories chosen are fully listed in Appendix 1 but included flame safety lamps, items associated with pit ponies, trade union activities (for example banners) and personal items (such as tobacco tins and watch cases).

The condition of the group of emotive items was then compared with the collection as a whole. As can be seen from Figure 2, the patterns of condition are strikingly similar for each group. The results of this comparison would suggest that the most valued objects receive no significantly better care than other parts of the collection. This would indicate that there is no initial sorting of items as they arrive at the museums to allocate different levels of care. Even those items which may have been assumed to have been valued on arrival at a museum are degrading at a comparable rate to the rest of the collection. Damage to the collections that is not attributable to the items previous use can then be attributed to the care, or lack of it, in the museums.

Summary of results

- Failing to provide basic storage is a significant cause of damage,
- Items of perceived high value are likely to degrade at similar rates to the rest of the collections,
- Where a good building is not possible, physical protection may be a better investment than minimal environmental protection such as canopies or shelters,
- All items, regardless of perceived value, held in good buildings and with adequate physical support, are likely to be preserved in good condition.

Conclusions

We can conclude that the survey shows that the failure to provide adequate storage provision is the cause of damage to all sections of the collections. Basic preventive conservation measures can have an enormous impact on the rate of damage to collections. Physical support should be a basic minimum standard for any item collected by an industrial, or indeed any, museum, even if the future use of the object is not clear. The combination of physical protection and a building which buffers the weather should be a realistic target for all but the largest of objects which the museum intends to preserve for the future.

Mining museums face the challenge of caring for large collections of complex items of varying sizes with limited resources. In this context there are still realistic and practical measures which this paper demonstrates will make a measurable difference to collection condition, even over a short period of time. It does not require enormous technical expertise to implement basic preventive conservation strategies.

Guidelines on basic care are available from a number of sources including the MGC and the Area Museum Councils. [15,16] The fact that even items which may be perceived as being important are not receiving any better level of care may suggest that many of those responsible for the collections are do not feel that strategies to implement basic preventive conservation measures are pertinent to their field. This may indicate the need for training in the core functions of museum work in particular, collections care.

Mining collections have, by and large, been collected over decades, yet museums must now try to care for them for centuries. Even during the relatively short time that some collections have been exposed to 'curatorial neglect' the statistics show the damage is already being done. [17] Poor storage as a short term problem, initiated by limited resources, will ultimately manifest itself in damage to the collections, generating conservation and access problems for the long term.

Those with responsibility for collections cannot afford to see conservation simply as a debate about levels of restoration between conservators and engineers but as an issue of collections management and resource allocation. Policy makers should consider 'not damaging' items as their first priority in providing conservation for their collections and invest in basic preventive conservation. Resources found to restore damaged objects should be re-directed for this purpose. Collections should be considered as a whole and the scope of industrial conservation extended far beyond individual restoration projects.

Appendix 1

Emotive items

Mine Lighting
- mobile (naked flame)
- mobile (flame safety)

Production and Development
- hand tools
- transport
- horse

First Aid / Rescue / Recovery / Disasters
- first aid and medical
- rescue and recovery
- fire fighting
- disasters

Signs and Notices

Clothing / Personal Items
- work ware
- protective clothing
- food / drink containers
- tobacco and watch containers

Trade Union
- banners
- tokens / badges
- strikes and lockouts

Fine Art
- paintings
- sculpture

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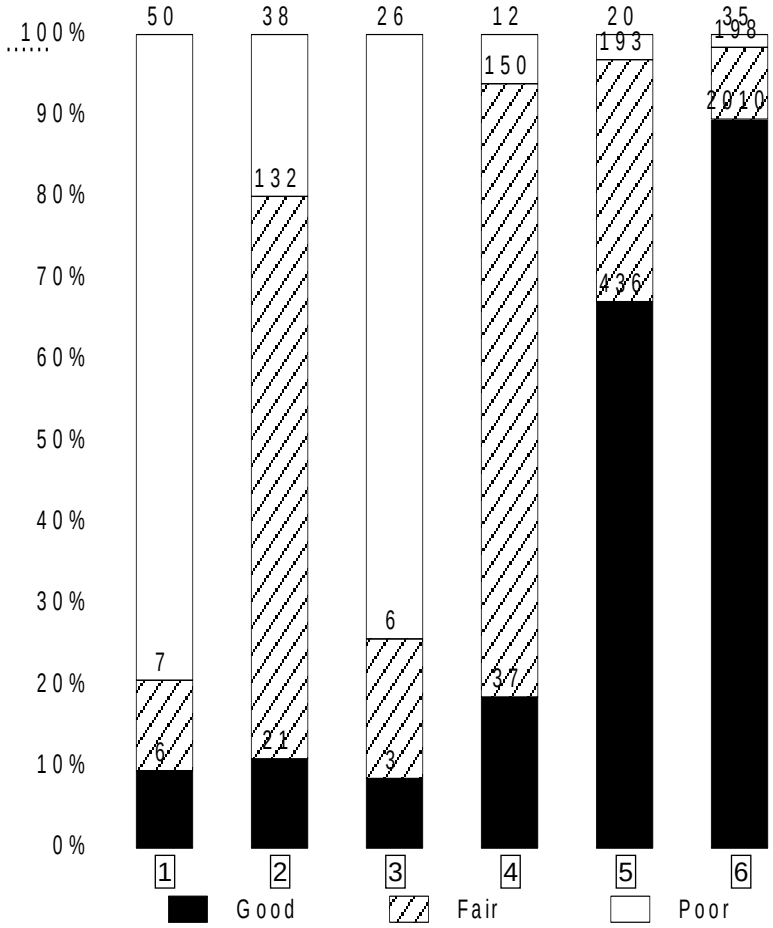
Object Condition by Storage

Figure 1



1=Open Air / Piled up
2=Open Air / Not piled up
3=Open Building / Piled up
4=Open Building / Not piled up
5=Closed Building / Piled up
6=Closed Building / Not piled up

Figure 2

Condition by Status