

Practical Restoration Handbook

Site Management

by
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1. INTRODUCTION

The author intends that this chapter will give the reader the benefit of tens of years of distilled wisdom culled from many canal restoration sites around the UK and prevent any project leader having to reinvent the wheel(barrow).

The scope of this booklet is deliberately as wide as possible. Obviously each restoration project is different and each one will require different degrees of management. The site manager may only have to deal with a few local volunteers working a few hours each weekend or an entire summer of WRG Canal Camps with intense activity every day. This booklet hopefully will give the reader clues about how to deal with either situation or anything in between. Generally it is assumed that the reader is trying to set out a medium sized project, say, restoration of a small flight of locks.

The site leader described in this booklet is so perfect that he is almost impossible to imagine. However, there have been some site leaders who have managed to achieve this perfect status and are the ideal choice to tell everyone else how to do it. But instead, I've been lumbered with doing it!

Please note that the terms "site manager" and "site leader" are not quite interchangeable in this chapter. The site manager is taken to be the person who manages the site overall and makes the decisions on how jobs will be done. The site leader is the person actually in charge on the site at any one time. Thus while it is possible for the site manager to be absent the site leader will always be present on site.

Probably the most important message to impart when thinking about how to lay out and manage your site is to think through the whole project fully before you start. Bringing in the lock gates may well be the very last item on your works schedule but you need to ensure there will be access for the wagon and crane right from day one if you are to avoid embarrassment. The logical extension of this is that you actually need to consider past completing your project and on to maintenance and possible improvements.

2. NEIGHBOURS

Consider well your neighbours in terms of noise, disturbance, etc. especially on Sunday mornings. They will rarely forgive and never forget. Noise pollution is recognised by the law these days (and cases do come to court) so if your work is close to residential housing then think before you run up that air compressor on Sunday morning. Your volunteers may well thank you for it as well. Farmers with livestock/chicken coops or similar may also be concerned by your work. Most modern plant is marked with its noise rating on the cab so you have no excuse for not knowing how loud it will be and planning appropriately. Noise at Work is difficult to measure on a construction site as there are so many contributions from various sources. However, where a volunteer is exposed to noise levels above 85dBA then hearing protection must be provided and should be worn. At levels above 90dBA hearing protection must be worn.

3. MANAGEMENT OF THE SITE

Management of a site begins long before you move on to it. The stages considered here are:

- 3.1 Project planning
- 3.2 Project communication
- 3.3 Setting up the site
- 3.4 Operating the site
- 3.5 Planning for each time the site is operated
4. What does the site leader do?
5. Leaving the site unattended
6. Involving everyone
7. If anything can go wrong
8. Finishing the project
9. Life after the project

3.1 Project Planning

Your project should begin with an overview of the whole process. You should ensure that you have a clear idea of the sequencing of events. Working with volunteers will be much slower than you expect and, though you should make some attempt at a time-scale, you must be prepared for it to slip considerably, but if your pre-planning has been good, the actual sequence of operations should hold. Discuss your plan with as many experienced people as you can and modify it in the light of any sensible suggestions that you receive.

In addition it is well worth consulting the IWAs Honorary Consulting Engineers about any technical aspects of the project. Contact them via IWA Head Office.

In the author's opinion the best thing any aspiring site manager can do is go on a WRG Canal Camp on an established major restoration scheme (even if only for a couple of days). This will give you an insight not only into how to plan for a Canal Camp, but also to the complexities of getting everything in place before it is needed. Bob Kearney and Neil Ritchie both attended Canal Camps on the Montgomery and now run probably the two most respected and best organised projects in the country.

The exchange of information and experiences is the best way to avoid mistakes and the author recommends joining either the Northern or Southern Canals Association as a good step. If you can't work out whether you should join the NCA or the SCA then perhaps leading a canal restoration is not for you.

Planning is a 'top-down' sequence of events: start with the general picture and then work down the levels of detail. At the top level will come most of the statutory considerations: planning permissions, negotiations and agreements with the navigation authority, landowners etc. It cannot be stressed enough that these permissions take forever to obtain. Even the most simple scheme, with no "implications, issues or knock ons" can disappear in a muddle of red tape so plan ahead to ensure you have the permissions on paper when your volunteers turn up.

For each major phase of the project, you may well require CDM plans, architect's/engineering drawings, Health and Safety and COSHH assessments, bills of quantity etc. See PRH "Health & Safety Sections 1-4" for further guidance.

It is also essential for all but the smallest repair to undertake both a heritage survey and an environmental survey. Involve all the bodies that will (whether you like it or not) have a statutory responsibility (or similar influence) over your scheme. Similarly the local authorities should be consulted, particularly with

reference to local development plans, planning designations, etc. Although this may seem like entering the lions den it is important to establish a working relationship with these parties at the start. It may well be to your advantage when you discover your scheme is in a designated tourist area and qualifies for grants, for example.

Having set up the framework within which you intend to operate, you can move on to the next phase: setting out the site (or, for a large project, setting out the first phase site). But before you do there is one last thing to be done: spend half a day photographing the entire site. The author has lost count of the number of times he wished for a "before" photo to go with the "after" one he has just taken of the finished project. Now, on with the action. . .

3.2 Project Communication

This falls into two clear divisions: internal and external. It is important that you keep a flow of information to both these areas. Within your society it is important the other officers are kept abreast of developments. It is only polite to inform your Chairman of your accidental flooding of the main road before he attends that public meeting! Likewise, if there is a lull in your physical activity then tell the members why, otherwise they will only wonder and lose heart.

It will also pay to keep your publicity officer abreast of your plans. This should stop him bringing the Mayor onto site just as you pressure-wash the lock chamber and shower the entire site in silt.

Keep a record of the works done, donations received and volunteers hours spent; whoever is in charge of obtaining funding will need them as "matching funding" for future grant applications.

Don't forget the paperwork side of things: discuss how you are going to run the site with your treasurer and see what he wants, he may not be digging alongside you at the weekends but he is the one who spends Thursday evening worrying about the fact that, according to the pink slips he has, three dumpers that were delivered on Friday but two dumpers and a road roller were collected on the Monday! Also bear in mind that the site will need a budget irrespective of what works you are doing: little things like hard hats, funnels and First Aid supplies all add up and you are going to need them. A close and pleasant relationship with your treasurer is essential: he has to be able to plan ahead and know what bills are coming in. You cannot afford to have black marks against your credit accounts because even if the trade counter of your builders merchant is open on a Saturday the accounts department won't be.

Society magazines take time to produce, collate and circulate. You need to plan your working parties well in advance if you are to circulate the details. You can't be surprised at a low turnout if your working party dates are the best kept secret in town.

Remember that there are people outside your society also interested in your progress, if you have local supporters then keep them informed (that way when your local MP opens the new "Bloggs Tool and Pipe Works" he might happen to mention that you are about to start installing your backpumping scheme). It is also important to keep the wider waterway movement abreast of your works. Updates in the established waterways magazines will keep your profile up and may indeed result in surprise donations from individuals and organisations. Dave Wedd publishes a comprehensive list of all volunteer work in the UK and this is the standard reference that the IWA web pages, "navvies", the author and most of the movement refer to.

Volunteers (such as any of the WRG groups) plan their working schedule in advance; if you expect to need a big push of volunteers in autumn then best write to their magazine *navvies* in the spring so they all know and can contact you if interested. WRG Canal Camps are planned even more in advance and if you hope to host a Canal Camp one summer then best to start asking them the summer before (try at the National Waterways Festival – they're easy prey then).

3.3 Setting Up the Site

3.3.1 Layout

It may seem wasteful to spend time and effort on the temporary structure of a site compound but experience has shown that proper fencing, material bays, drainage, fuel stores, etc are good investments. To spend the first five weekends preparing a site for a few years concentrated work is not excessive.

Also worth considering is the technique of filling in the canal to gain extra ground. If you don't have enough space for a compound alongside the canal then you can fill in the canal bed temporarily. Though it may sound silly, with a large excavator and the right material it may only take a day to fill the bed and, at the end of the project, a day to reprofile it. Remember, however, to consider drainage along the bed and build in drainage pipes as appropriate.

If you are going to be on site for any length of time, pay particular attention to haul roads and plant access roads. The high cost of installing a proper haul road will be repaid surprisingly quickly if weather conditions deteriorate. 200mm of roadstone laid on a 4-metre width of geotextile will stand pounding by the heaviest plant and will not degenerate into an embarrassing quagmire.

3.3.2 Signage

This is key to an easy running site; it makes it easy if everyone from wagon deliveries to journalists, civic dignitaries to volunteers can actually find the site. It also stops them going too far and getting their wagon (or wellies) stuck.

Placement is critical; there is no point in placing a "deep drop" sign so close to the hole that people have to get close to read it, and no point in placing a "machine slew area – do not enter" if it will be knocked down every time a machine slews!

Project information signs are also beneficial. They will stop the public holding you up by asking you damn fool questions and will ensure that everybody who passes your site knows what is happening and who you are. Many donations come with letters that start "I was passing by your site and. . ."

These days funding organisations will insist on full credit and this is usually achieved by a "Partners' Board". This is the board that has the logos and details of all the parties involved – English Partnerships, English Heritage, Millennium Commission, etc. all have printed guidelines for this.

One item always raised is "Why do we have to spend all this money on fancy signs, why can't we just make some up on a bit of board?" Well of course you can and any society should be trying to recruit someone with a good eye and a steady hand for just this purpose. There are

situations where the layout of a sign is legally defined but these can still be handmade. Firms such as ARCO, Stocksigns and Seton have free catalogues with all the information on legal requirements. In addition there are now many small firms who make up each sign individually to order. The signs are created on a computer and then formed onto a plastic backing. Because each one is individual the firms often offer a customising service free of charge. Normally this is used to personalise the sign with "Wimpey Construction PLC" but if you can find a sponsor then it could equally say "project supported by Bloggs Bakeries" instead. This would help out your signage budget.

And finally, many modern computer packages (e.g. 'CorelDraw') come with a set of statutory signs as 'clip art'. These can be printed out and laminated as required – offering a cheap source of temporary signs.

3.3.3 Fences and Services

The actual boundaries of your site should be clearly marked and/or fenced, as should any "no go" bits of the site itself.

Check what services run through (or over) your site, and whether you can make use of them or whether you need to warn volunteers of their presence. Are they clearly marked?

Check whether there are any legacy problems e.g. asbestos dumping, heavy metal contamination etc. If you suspect this, consult the appropriate authorities about site precautions and disposal of spoil (see PRH "Health & Safety Section 4").

3.3.4 Building Materials

Think really carefully regarding size, placement, etc of the material stores. Material heaps should be properly constructed with a concrete base (or hand standing) – this will pay for itself with a reduction in spoiled/wasted materials. Thick plywood sheets can be used for materials heaps that will not be in place for more than a year. There should be a separate bay for each type of material you intend to store: sand, gravel, roadstone etc. Cement should be stored in a permanent structure if possible: if not, it should be well protected against damp and against theft (it is one of the more valuable materials that you will store). Ensure that cement stock is cycled i.e. that the bottom bag gets used. Note that cement, being hygroscopic, will always go off, even when stored in the nominal dry conditions of a shed or store: only by totally surrounding the cement in airtight plastic can you extend its normal lifetime.

The bays should be arranged so that the delivery wagon can easily tip into them and so that when shovelling by hand into a dumper, the prevailing wind does not blow half of it back in the shoveller's face.

Each bay should be labelled as delivery drivers aren't psychic: if the materials bay is clearly labelled "building sand only", then it does reduce the risk of brickies having to lay bricks with "40 to dust" and ensures you don't have to scrap two loads of expensive materials.

3.3.5 Fuel

Fuel stores must be placed away from other risk (see PRH "Health & Safety Section 1") and sited so that a machine can get in to refuel easily. Types of fuel must be clearly marked and fuel should be placed so that in the event of a fire elsewhere in the compound it will not catch fire.

Any portable containers should also be clearly labelled, as red diesel looks ever so much like Ribena but there the similarity stops. There should also be a clean place to store funnels, etc.

The fuel store is the sensible place to store any spill control measure you have. Apart from limiting expensive waste, spill prevention/limitation should be part of any responsible site's operations. Specialist catalogues such as Seton and the wonderfully named British Pig catalogue can give further details on such fascinating things as mop-a-booms and anti static non-return drip catchers.

3.3.6 Plant and Equipment Storage

The plant is probably the most valuable item on the site. Even if you intend to hire all your plant you will still need to store it overnight and you should plan for this. It should be stored in a compound that is secure, which has good access for offloading from transport vehicles etc. It may be the logical place to locate your fuel store and would ideally have at least limited maintenance facilities. The most successful sites have mid-week volunteers (usually retired people or similar who wish to help but don't wish to shovel all weekend) who turn up and perform maintenance and other house keeping jobs. This also keeps your site busy all the time, which is good for security. Another point to remember is that your kit may not be used for some weeks and the weather can change considerably in that time. You may want to perform any frost precautions much earlier than normal and perhaps remove batteries for a top-up charge at home.

3.3.7 Waste Disposal

A tidy site is a safe site – a simple comment but it has a lot of merit.

Waste materials should be stored and disposed of properly – it is no longer acceptable to simply wash out fuel filters in the nearest stream. Burning everything (the traditional approach to site clean-ups) may not be such a great idea. Also consider surface drainage from the site i.e. is it into the nearest stream?

Some materials cannot just be taken down the local tip. You should investigate what can be disposed of where. Consider the safe disposal of sharps such as bow saw blades. A skip on site is a bonus for everyone (except the rabbits) – it encourages everyone to keep the site clean. If your work does not warrant a skip then at least have an empty 45 gallon drum or similar.

3.3.8 Security

Consider a contact name and number on the sign board for the police etc. in case someone decides to torch your site hut etc. – but don't fasten the board to the hut! This contact should have keys for everything on site. Don't leave equipment and tools on view, etc. Permanent and semi-permanent site huts should have shutters (preferably steel) to cover all windows and plant should have steel 'riot shields' to protect its windows. Easily removed items (such as starting handles!) should be removed from all plant and any plant or equipment, which is even reasonably portable, should be locked up or chained down. All equipment should be security marked (with weld, where possible) and expensive items such as excavators etc. should be fitted with a 'Tracker'-type device to aid recovery. There is an international plant marking scheme, the author suggests a word with your local plant hire firm or crime prevention officer for further details on how it is implemented locally. When a site is working, you might even consider a 'night watchman' to save packing everything away overnight.

3.3.9 Access

Remember it is not just cars that have to get in, but delivery wagons and, most importantly, emergency vehicles. A chat with your local Emergency Services will mean not only are they aware of you but also while they are out and about cruising the highways on the long summer nights they may actually pop down and see if they can get to where they want to. It's better to find out before you need them.

A real bonus, if you have the space, is to create a holding area so that wagons etc. can pull off the highway and not hold up traffic while you deal with them. Remember that large wagons have different requirements to your trusty Morris Minor – consider attack and departure angles for trailers, wagons, low loaders etc. Good visibility is essential, so cut down hedge on entrance and exits, etc. Perhaps even consider wheel washing facilities if you have very fussy neighbours or a very muddy site.

A gate may be an essential security item but if possible give your local hire firm a spare key so they can deliver/collect at times that suit them. This arrangement has worked well on the Montgomery Canal. Also used on the Montgomery is the arrangement where to allow shared access to a compound with British Waterways, a length of chain is used with two padlocks – one BW, one WRG. This ensures both groups can access the compound.

3.3.9.1 Control of Public (rights of way/towpaths, etc.)

Check carefully what rights of way or other access rights apply to your site. You cannot allow the public to mix with a construction site and its machinery; neither can you deny them their rights of access. Local authorities and/or landowners and/or navigation authorities will provide the information you need.

You must arrange a clearly marked, safe route through your site and insist that the public keeps to it. In particular you should think about dogs and children who have a tendency to ignore safety barriers. Examples of suitable warning signs are given in Appendix 2. Obstruction of Rights of Way etc. is both illegal and guaranteed to make you unpopular with the locals.

Make a virtue out of necessity – signage is important (warning, direction and information) and perhaps it is well worth constructing a public viewing area to keep them out of the way and/or shepherd them towards your membership recruiters.

3.3.9.2 Control of Visitors

Consider having hard hats specially for visitors and a signing-in book. It makes them think they are going onto a real professional site. However, volunteers should always ensure the site leader knows who is on site.

3.3.9.3 Control of Car Parking

People will insist on driving to your site and so it is essential that you consider this. Parking should be marked and out of the way. Parking randomly on verges etc. does harm to the verge and thus your credibility. You MUST ensure that volunteers' cars do not obstruct the access or exit of emergency vehicles. Perhaps have a space dedicated to the emergency vehicle (see PRH "Health & Safety Section 2") and make sure it is parked ready to go out and everyone knows where the keys are.

3.3.10 Site Office

The site office is a real essential, be it an armoured portacabin permanently on site, a caravan brought onto site each working weekend or something smaller. (The Basingstoke appears to work out of the back of a van and the Droitwich runs out of a flight case!)

Whatever its composition the site hut should be a known point with all the facilities required. It should:

- have all the relevant health and safety arrangements (such as Health and Safety Plan)
- contain first aid facilities (determined by number of workers and complexity/danger of your work, see PRH "Health & Safety Section 2" for details)
- contain all the registers and records for the site
- offer shelter for the workers unless this is provided elsewhere
- be the centre for all site communications
- have an indication of site leader for the day
- be the "clean and dry" store for PPE (Personal Protective Equipment) and FAK (First Aid Kit)

For a long-term site, mains water and electricity supplies will make life very much easier. Since mobile phones became commonplace items, it is less important that the site hut should have a telephone (though this may still be useful).

3.3.11 Welfare

On the site there should be a shelter for your volunteers (not just from the cold and wet, hot sunshine is just as great a risk) and somewhere to dry outer clothes. Drinking water must be provided and while many volunteers are happy to go behind a bush (dangerous during a jungle bashing weekend), some are more delicate so please have some form of toilet facilities arranged.

3.3.12 Communications

Two way radios (and the disasters and chaos that they create) are, of course, one of the standing jokes of the canal restoration community but they do have their uses. Recent deregulation of the Mobile Radio rules mean that it is now much cheaper and easier to have two way radios for your site, however they are not without problems – contact John or Mike Palmer for their opinions (if you dare). Mobile phones are more prominent than ever but check whether they work reliably on your site. It is very good to have a local emergency contact person (one who will actually be in to receive the message on the days you are working). A REAL site will know its post code as these days more and more delivery firms use databases.

3.4 Operating the Site

3.4.1 Deliveries

If huge amounts of volunteer time is not to be wasted, it is essential to plan each weekend/camp in advance. This applies particularly to ordering and delivery of hired plant and of building materials. The site organiser should ensure that this is done well in advance, either personally or by delegation to a trustworthy individual. Someone must be available on site to receive deliveries at the agreed time – in their absence, materials will be tipped into the wrong bays, or

just dumped anywhere, hired plant will be left obstructing the site with the key so well hidden that no-one can find it, or simply taken back to the depot. The person accepting deliveries should be at least competent enough to know that the items being left are the correct ones, and numerate enough to ensure that the right quantities are being left! You will make your accountant/project manager very happy if delivery notes etc. are duly obtained, signed and carefully preserved for the future!

One frequent problem is that the delivery driver fails to make the Saturday morning delivery and so decides to deliver extra early on the Monday morning! Unless you make them aware that you are working through the weekend, they will assume that your site is only open till mid-day Saturday morning and so a Monday delivery is the next best thing. So when you request Saturday delivery ensure they know that you are working through the weekend and the Saturday morning delivery is essential.

If the site manager is not going to be present at all times, volunteers should be aware of the local sources of supply for equipment, material and fuel and of how to use the relevant accounts to obtain them! They have already driven a hundred miles to be there – don't expect them to fork out for bags of cement as well.

3.4.2 **Volunteers**

Volunteers are the life blood of the site. Their safety and comfort are essential. You must ensure that they have all had an adequate Health and Safety briefing (this should be kept up to date with new developments on site). You may wish to keep a register of volunteers on site. If you do so, volunteers should sign that they have received safety instruction and that they agree to abide by the site rules (and understand the consequences if they don't). This subject is dealt with in greater detail in PRH "Health & Safety Section 2".

It is essential that the management/leadership structure is clear in everyone's minds. This is really driven in by the safety briefing which is more than just a safety talk but an introduction to the site (and the leaders' first chance to assess the volunteer). Where there is a Health and Safety Plan then the leadership structure is laid down by that. Where there is no such formal plan then it is well worth getting your societies "council" to formally agree a leadership structure in writing/minutes/whatever. This makes it clear to the volunteer where their leadership is coming from.

Volunteers should know:

- Who is the site leader
- Who is second in command
- If there are any first aiders
- Where the emergency communication is
- Where the PPE and FAK is

The site leader should check that

- volunteers have signed in/received the H&S talk
- volunteers have been told all the items in the list above
- volunteers have clear instructions for the job
- the job is not beyond their physical (or mental!) capacity

- volunteers have skills adequate for the job
- plant operators/drivers have the necessary WRG authorisation (if applicable)

In conjunction with visiting leaders, team leaders etc. you should keep a site log. This should be a good quality hardback notebook (anything less substantial won't last the course, anything loose-leaf will ensure that the critical leaf is lost).

It should always be an addition to the H and S plan and information should not be duplicated. The site log can be used for messages to other workers:

"Bill – completed all but two of the shuttering frames, Keith"

usually followed by

"Keith – used them for firewood, Ta, Bill"

It should also be used for storing calculations on quantities, records of deliveries, phone numbers of suppliers, etc. and a host of other bits and pieces (some highlights from the Aston Locks site log are given in Appendix 3).

3.4.3 Other Workers

These days it is highly likely that you will end up working alongside paid professionals. (Contractors, Navigation Authority employees, etc.) This has led to many problems in the past with both sides blaming the other for everything from missing cement supplies to the Arab-Israeli crisis. Fortunately these days a more enlightened ethos often exists with the professionals not feeling quite so threatened by volunteers. The one piece of advice the author can give is to have absolutely everything sorted out with regard to shared facilities, access and resources before any work takes place. Ensure any critical points (esp. deadlines) are known to both parties.

3.4.4 Registers, Records and Inspections

It is strongly recommended that societies compile a register of skills that its volunteers possess. This may be officially recognised qualifications (e.g. a CITB excavator certificate) or less formal (good bricklayer).

For details of control of drivers and operators of plant see PRH "Health & Safety Section 2".

3.4.5 The Work Itself

Always plan the jobs thoroughly and think carefully about the effects of boring jobs being continuously thrust upon volunteers. Keeping up volunteers' morale and interest is a skill discussed in PRH "Leadership Skills". The best advice though is simply put yourself in their shoes; if they have cleaned bricks for the last three weekends, then put them on something new. wherever possible plan the work so that readily identifiable goals are possible (such as the reflooding of a pound or commissioning of a bridge) rather than just finishing everything together at the end of the project.

Always explain the big picture to volunteers so they understand why they are doing what they are doing.

Ensure there is clear communication about the jobs; they should know exactly what is expected of them and of any important points such as deadlines. The use of individual job specification sheets (such as in Appendix 4) requires some homework but does result in far fewer questions on site and far less chance of you having to say "What you've done is good but wrong" (this phrase copyright M Fellows).

However, strive for high standards and, if it is not good enough, then the wall must come down and be built again. Own up to your mistakes.

As site manager you are totally at the mercy of both volunteers and the weather. A depression moving down from the north can ruin your weekend (but enough about Andy Jones) so one important point is to always have standby jobs ready that are not time dependent and can come on stream at any time. Make these real jobs but ones that will both occupy the volunteers and not take up too much of your time while you are trying to fix the pump or whatever.

3.4.6 Training

Regarding training; the one thing WRG are agreed on is that nowhere near enough of it goes on. Not just bricklaying or fancy excavator driving but all the little skills: how to erect and assemble reinforcing, how to mark up a concrete pour, how to guess (estimate?) quantities (and get it right!). So, wherever possible take every opportunity to train people as you go. If the project warrants it have a day dedicated to a particular skill and get all local volunteers to come to it so that they are more useful from then on. This sort of investment pays great dividends and, contrary to popular opinion, volunteers don't come along to smash things up, the chance to rebuild something they can point to proudly is what will keep them hooked. If you know of another restoration scheme nearby with similar problems then pay them a visit to see how they do things.

3.4.7 Equipment (do you hire or buy?)

At first sight, it is often tempting to purchase common site equipment such as dumpers or even excavators. Hire fees seem expensive and the lure of a bargain priced piece of equipment can often seem irresistible. However, unless your site operates continuously for long periods of time, you should look carefully, and probably resist the temptation. To paraphrase the late Graham Palmer, we are not in the business of providing playthings for frustrated amateur plant fitters and the crucial point about site plant is that it should work.

Purchasing plant gives you the responsibility of storing it securely, maintaining it, obtaining test certificates (where applicable) and insuring it. Any equipment you can afford will be old and tired and will need a great deal of love and care to keep it operating. It will not respond gladly to long periods of idleness followed by short bursts of intensive use and is likely to reward your investment by breaking down at a crucial moment.

Hired plant, though expensive, is *somebody else's problem*. It will be more modern than anything you can afford, almost certainly better maintained and all of the potential headaches can be solved by a telephone call to the hire company (except at weekends!). Breakdowns, punctures, routine servicing, test certification and insurance (check this one carefully!) are all dealt with by the hire firm. You will be able to obtain a wider range of larger plant this way. Think carefully before splashing out on a sad fifth hand 1 tonne two-wheel drive, rear wheel

steer dumper – for the same cost you could probably hire a 3 tonne, four-wheel drive hydraulic steer dumper for several months.

3.5 Planning for each time the site is operated

As site manager, it is your responsibility to provide for the effective running of the site and the efficient use of volunteers' time (your most valuable commodity, though nominally it costs you nothing). Keeping volunteers standing around, or otherwise wasting their time on clearly pointless tasks is a sure way to make them choose a different project to support.

You can afford to leave nothing to chance, and every time the site is to be used, you need to check:

- the booking of accommodation
- the consent of other interested parties to the planned work
- the existence of all the relevant documentation (designs, plans, surveys, etc.)
- communication with any visiting site leaders
- any requested WRG equipment has been provided and is duly checked off
- the integrity of any dams, scaffolding, excavations or other works which need inspection and certification
- ensure that pumps are started well before volunteers arrive on site
- ensure that all necessary materials have been delivered to site
- ensure that all necessary plant (hired or owned) is on site and working – test it: it isn't good enough to know that it worked last week!
- all communications equipment is fully charged and operating
- that all starting handles, keys etc. are available
- drinking water/beer equipment is provided for
- all PPE and FAK is fit for use and available
- that everything that needs to be unlocked *is* unlocked

Ideally, before volunteers arrive on site, you will have discussed the job with the leader(s) and taken them down to site and walked and talked them through the whole job. If you have any doubts about the competence of visiting leaders (e.g. if they prove unable both to walk and talk), you should ensure that there is someone on site who understands the job and can modify the plan as the work progresses. But the exact chain of command should be clear and not buggered about with: there is nothing worse than having a local or old hand come along and interfere with the work plans.

4. WHAT DOES THE SITE LEADER DO WHEN THE OTHERS ARE WORKING?

David Hutchings maintained, rightly, that one of the skills of a good leader is to see when the volunteers are flagging and to know when to intervene/join in. Volunteers will either be inspired or shamed into redoubling their efforts. This notwithstanding, in general, the function of a site manager is to keep an overview of the whole site – becoming deeply involved in one job means that you aren't keeping an eye on the others – with potentially serious consequences. You will need to take a great deal of (good-natured?) teasing about your 'lack' of activity, but your job is to be everywhere, to see everything and ensure everyone is working. But don't flog them to death either.

In the words of Mr Mick Beattie "You can't manage a site from the cab of a machine". So just because you can operate the excavator don't spend all day in there.

As site manager, you should regard yourself as responsible for site safety at all times. You should have considered all the relevant safety issues (covered in PRH "Health & Safety Section 1-4") and thought them through. You should make sure that all leaders have a clear grasp of the safety issues and that they have communicated them to their volunteers. The procedure to be followed in the event of an accident should be communicated to everyone.

You should, of course, be checking to see that the work is carried out properly and according to plan, but you should also be keeping a careful eye on the safety of the volunteers, the general public and of the site as a whole. You need to ensure that:

- PPE is being worn (in an effective manner and not as a fashion accessory)
- COSHH and other directives on the safe handling of materials are being observed
- plant and equipment is being operated in a safe manner by competent operators
- volunteers are not working beyond their capacity
- proper rest breaks are being taken
- enough hot/cold drinks are being taken
- everyone eats and does not work through meal breaks
- regular checks are being carried out on the safety of coffer dams, scaffolding etc.
- the general public are being kept well away from the work – be particularly vigilant for photographers, who usually believe that they lead a charmed life and that holding a camera confers on them immunity and immortality (and often, invisibility)
- volunteers are aware of, and avoiding 'crush zones' on plant

If you find that you have any spare time, you're not doing the job thoroughly enough! And do resist the temptation to sneak off for a crafty brew or quick kip – being found in the site hut is a real crime. If you are going off then tell everyone, they need to know where you are anyway and if you have done your bit then they won't mind you going off for a drink.

5. LEAVING THE SITE UNATTENDED

5.1 Safe for the Public?

To quote Samuel Beckett "People are bloody ignorant apes". An extreme(-ish) view perhaps, but there is no doubt that, if there is any hazard on the site when you leave, a member of the public will be magically drawn to it and get into some kind of trouble. Even if there are no obvious hazards, the low cunning of the species is such that they will ingeniously create them out of seemingly innocent components.

You must take very great care to ensure that the site is left in a safe condition, whether you will simply be away overnight or are leaving for a month.

All plant must be left safe – keys/starting handles removed and placed in the "safe place", hydraulics lowered to the ground, parked safely, and preferably immobilised so that handbrakes cannot be released and the equipment pushed into embarrassing places – like a lock chamber. Blocking in items of plant with others is a good idea, as is using the buckets of excavators to immobilise dumpers etc.

The site should be fenced in an approved manner such that it is quite clear where the public are *supposed* to walk and where not. Temporary fencing should be just that – if you are on the site for a long period of time, something more lasting should be attempted. Excavations should be fenced and you should arrange around the site various blinding signs of the obvious such as 'Danger – deep excavation', 'Soft Mud', 'Keep Out', 'Deep Water' etc.

Items such as erected scaffolding should be looked over occasionally to ensure it has not been tampered with and left in a dangerous state.

Any portable tools or equipment should be removed to a place of safety and, where possible, building materials should be protected so that they can not be stolen/thrown into the canal/used to fill the fuel tanks of site plant. Remember that unattended site plant is a limitless source of spare parts for the unscrupulous. (We had an unscrupulous one once but it never worked because we couldn't get the spares).

5.2 When the volunteers have gone home

It is highly likely that when you leave site it will be in failing light. Because of this it is probable that things will be missed as you pack up. So it is a great idea to have someone local to pop down the following day and check the site for mislaid tools, starting handles left on dumpers, etc. This is an excellent example of involving everyone (see next section).

When a visiting group leaves (and you weren't there to wave goodbye) then take the time to ring the leader a day or so later to discuss the work and check everything was left as it should be. You really don't want to wait until the following month to find out that the backfilling was not completed.

When a major event such as a camp finishes then a splendid touch is to send all the volunteers a thank you letter. WRG Head Office can provide a list of those who attended and their addresses. For a weekend group a letter to the leader will normally get the message across.

6. INVOLVING EVERYONE

This is an important part of a well set-up site. Not everybody who is local will wish to wade around in mud/concrete/whatever but they still have their part to play. The finest example of this is Jan Horton of the Lichfield and Hatherton Restoration who supplies the people on site with endless chocolate cake and wonderful soup. Your members may not want to go that far but a site where someone is always providing a brew in the site hut is a very well patronised one. Equally a person who is willing to spend the day chatting with the public will not only keep them out of your hair but may also recruit a few members. See also section 3.2.6 regarding midweek maintenance.

If it's the first visit from a mobile group then an encouraging appearance from the chairman and other top nobs may well be appreciated. And leaflets for the accommodation (dare we mention the idea of a (short!) slide show in the evening) will be good for the anoraks amongst them.

And on the subject of involving everyone, by all means get your publicity officer to bring journalists, photographers etc. round (a big, sexy camp is great publicity) but it is ESSENTIAL that you check with the leader first.

7. IF ANYTHING CAN GO WRONG. . .

. . .it will! This section could be subtitled 'And now for Plan B'.

7.1 Possible Problems and their Solutions

7.1.1 Supplies/Equipment/Volunteers not arriving

Always have a standby job as mentioned above in "The work itself" and just as importantly you should also be willing to learn from your misfortune. Take the time to find out why it/they didn't arrive.

7.1.2. Equipment breakdown

This is why the author says always hire the best you can afford, and have a standby source of kit and have the manual solution ready. If you are intending to mix mortar then how much effort does it take to ensure you have an 8' x 4' sheet ready for when the mixer fails and you have to mix by hand?

7.1.3 Planned work not completed

Probably the most likely problem is that the visiting group did not complete the work you were depending on. This is most likely to occur because they did not have the skills that the job needed or possibly because they did not have the numbers. This is why it is essential to communicate with the leaders of visiting groups before the visit.

7.1.4 Unexpected snags encountered

Not much you can say except it is a learning experience for all of us. And don't be too downhearted by the many calls of "Well it was obvious it was going to be a cock up, anyone could see it, plain as day". They would say that wouldn't they?

If a concrete pour or similar goes wrong then attack it straight away: while it is green it is much easier to break up than when it is fully cured. The volunteers may not be too happy about pulling down what they have just put up but they should understand.

7.1.5 Bad weather

There is really nothing that can be done except have a good standby job. The best advice for avoiding cock ups on site is be realistic. . . if it has been raining all week and your site looks like the Somme then don't hope that your two wheel drive dumper will cope.

7.1.6 Poor quality of work

Poor quality construction work should be torn down ruthlessly. No matter how much effort a volunteer has put into a job, in his heart of hearts he does not want to spend the rest of his days looking at a poorly restored bit of the nations heritage. This is where the site manager's diplomatic skills assume great importance. It is not easy to tell an individual or group who is/are proud of their skills that the work is below standard and must be re-done. Remember delay is very expensive – the longer you leave it, the harder it will be to remove. Immediate demolition may allow the recovery of some expensive materials (e.g. bricks).

8. FINISHING THE PROJECT

Most projects, when finished, actually look pretty awful. If your project planning allows for a few months to let it "green over" then the resulting before and after photos (remember them?) will be much more impressive.

9. LIFE AFTER THE WORK IS COMPLETE

The author suggests a lot of rest and putting up those kitchen shelves you have been meaning to do for the last four years. Congratulations

APPENDIX 1 – ADDRESSES

Signs

Neil Ritchie – possibly the most helpful bloke on the planet!

Contract Sign Services

The Chapel House

Sandford Road

Churchdown

Gloucester

GL3 2HD

01452 854057

Stocksigns – a very helpful, large, free catalogue

Ormside Way

Redhill

Surrey

RH1 2LG

01737 764764

www.stocksigns.com

Seton – you will never get off their mailing list!

PO Box 77

Banbury

Oxon

OX16 7LS

0800 585501

www.seton.co.uk

Glasdon Designs Ltd – high class site boards

Clitheroe Road

Brierfield

Nelson

Lancashire

BB9 5PT

01282 616221

Spill Control

New Pig Spill Products

5-9 Dunlin Court

Strathclyde Business Park

Bellshill

Lanarkshire

ML4 3NH

0800 919900

Canal Associations

Northern Canals Association
c/o Huddersfield Canal Society
239 Mossley Road
Ashton under Lyne
Lancashire
OL6 6LN
0161 339 1332

Southern Canals Association
c/o Robin Higgs
18 Barnsford Crescent
West End
Woking
GU24 9HX

Restoration Dates Listing

Dave Wedd
7 Ringwood Road
Blackwater
Camberley
Surrey
GU17 0EY

wedd@clara.net

APPENDIX 2 – SITE WARNING SIGNS

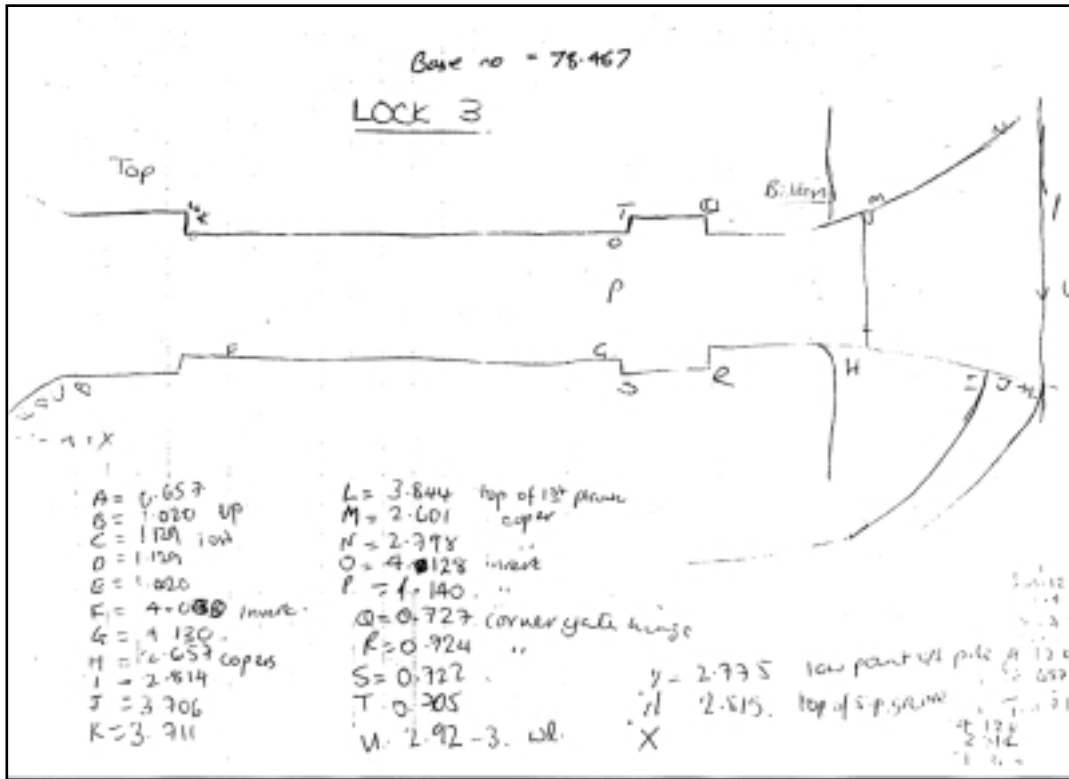
CAUTION

- You are approaching a work area.
- The Waterway Recovery Group are performing restoration work on this site.
- PLEASE do not pass the safety barriers and fences.
- Beware moving machinery and vehicles and ensure all drivers are aware of your presence.
- PLEASE ENSURE that ALL children and animals are under control at all times.
- Thank you for your co-operation.

CAUTION

- You are approaching a work area.
- The Waterway Recovery Group are performing restoration work on this site.
- PLEASE ENSURE that any machine operator is aware of your presence and:
- AWAIT his/her signal before you pass through his/her work area.
- PLEASE ENSURE that ALL children and animals are under control at all times.
- Thank you for your co-operation.

APPENDIX 3 – MONTGOMERY SITE LOG



BITM 26-28th or something
like that January 15

Thurs
 Its a monstrous blizzard there are only two of us - struggling against the elements in toughest conditions with no hope of any success or even survival. It is our darkest hour.

Fri
 It got darker!!

Sat
 Hopefully it will go like this :-

| | | |
|--|--|---|
| <p><u>Concrete</u> Brian Eddie Leo (out-jog to see work)</p> | <p><u>Party blocks</u> Beauwley Mark C Bob K Mitchell Danew</p> | <p><u>Shift</u> Steve B Roger B Dave W</p> |
|--|--|---|

Offside Back
 Andy H
 D; S
 Becky
 B P

Rouner around in a comfy seat in a heated cab having a nice time and not getting wet at all.
 Tim B.

Fence
 Kevin A
 Keith W.
 Roger B?

TUDES

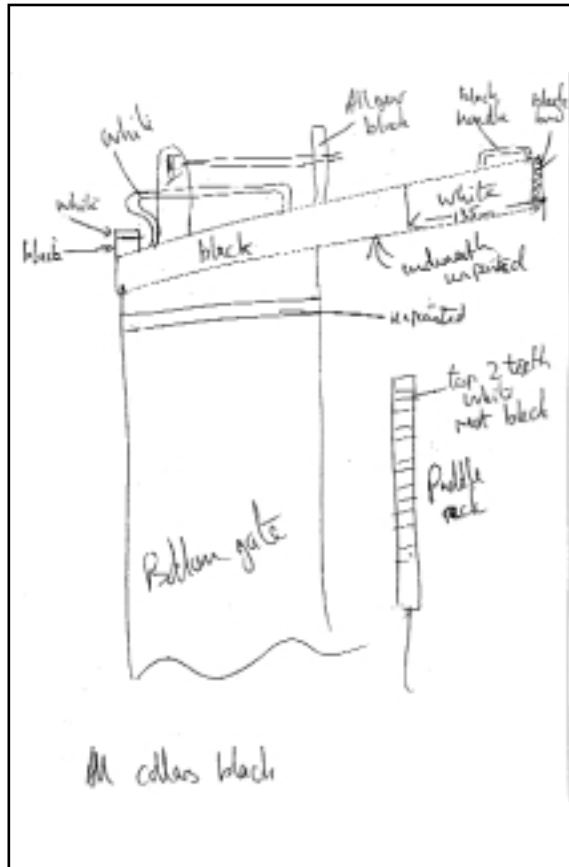
Concrete for: exit weir frame, butyl - small amount for any form head weir 34.

(Get v.v. well inside)

- 1) Order 20 tons topsoil
- 2) Ring BV8 106. 560 - 1000?
- 3) Sort levels and quantities for exit weir (but scuffing)
- 4) ~~Continue~~ Continue Lock 1 head (if possible transfer to Lock 3 to ground copes and cut-ladder recess extra 18)
- 5) Assemble lots of sandbags and create island around vert pipe in Pond 5 - extreme care.
- 6) Road Roll around Pond 1 if possible.
- 7) Expose low-points on Pond 3 and puddle, then landscape.
- 8) Dumper to supply 1 load of cherty stone to weir 2/3 and one load of puddle clay to weir 1/2
- 9) Recover pipe + handboard from end ~~of~~ Pond 5 and landscape import-soil if need be from topsoil on by exit weir (by boat?)
- 10) Fence across exit weir.

| | | | |
|---|--|--|---|
| <p><u>Putke</u> DW Jerry Liz Ashley Debi</p> | <p><u>Boats</u> Tim Leo Natalie Tony</p> | <p><u>Either</u> MRP Steve Mathew Chris.</p> | <p><u>Essex (and concrete)</u> Tim Moore Keith</p> |
|---|--|--|---|

| | | |
|---|--|--|
| <p><u>Lock 1 Head</u> Andy J Andrew Pete B</p> | <p><u>Wear 3/4</u> Shop</p> | <p><u>Tron dumper</u> Pond (5) (Second - on if needed) Dumper</p> |
|---|--|--|



APPENDIX 4 – SAMPLE JOB SHEETS

Droitwich Junction Canal Restoration Sample Job Sheet

Job Ref: 6.2.1

Job Description: Refurbish overflow weir

Location: Head of Lock 2

Safety comments (other than follow Health and Safety Guide): Ensure safe lifting and handling of large coping bricks

Schedule/Timing: As soon as possible

Personnel requirements: 2 heavy diggers, 2 rakers/pointers, 2 coping brick layers

Equipment needed: Hawks, pointing trowels, mixer, shovels, barrows, wire brushes, plugging chisels, club hammers, spirit level

Materials: Mortar mix (5-1 but can be varied if inappropriate). It will probably need to be quite dry for seating the coping bricks on.

Details: Excavate all around the weir so that the below ground state of the existing copers can be determined. It is also necessary to drastically reduce the scrub and vegetation inherent in the surrounding ground so any roots, brambles, etc. should be removed from excavated soil and burnt. The excavated soil should be piled next to the rubble pile as shown on the diagram below. Assuming the copers look OK then the structure should be raked out fully and carefully repointed (and soft brushed 6 hours later). The upstream run of copers is missing (approximately 20 bricks) and these need to be replaced from the stack on the offside of Lock 2 flank wall. These will need cleaning. The new copers will need a fillet of concrete to support them and it may be desirable to concrete the whole of the area between the weir and the head wall to further strengthen the arch beneath. If this is done then at least 100mm ground cover must still be achieved when landscaping. All landscaping should be done using locally excavated soil that has been checked for excess roots/vegetation. Additional work is the minor raking out and pointing in the corner of the Lock 2 head wall. (Best viewed down in the pound).

Work in progress notes: Completed by WRG Canal Camp 9804 but flood testing revealed a leak in the wall of the weir as the downstream sump filled with water as the level in the pound rose. This must be remedied before the pound is returned to level.

Montgomery Canal Restoration Sample Job Sheet

Job Ref: A1

Job Description: Installation of dams and dewatering under Park Mill bridge.

Location: Park Mill bridge

Safety comments (other than follow Health and Safety Guide): Care to be taken during installation to prevent swallowing of water and hypothermia. Beware effects of lifting and twisting with heavy sandbags. Dam is to be inspected by competent person (appointed by MKP) before start of work (morning and afternoon) and after any significant change in the level. Levels either side of the dams to be monitored carefully against temporary level marks. Record of inspections to be kept in the site file for the duration of the works. At all times when personnel are present in the work area a safe method of access/egress must be available. Care must also be taken to ensure workers are not at risk during the removal of the dam.

Schedule/Timing: Before work can begin on below waterline works (probably Fri Mar 26th)

Personnel requirements: At least 5 strong people (plus 3 to support/supply)

Equipment needed: Work punt may make this job easier. Narrow spades. 3" centrifugal pump, 3" diaphragm pump.

Materials: 400 sandbags with sand to fill, 100 are already filled and stacked at Red bridge. Fuel for pumps.

Access: To be negotiated with Howard and landowners.

Details: The water level is to be lowered along the length from Maesbury to Aston using the run off sluice just south of Lock 3. The level is to be dropped by no more than 300mm. Once this has occurred the dams are to be placed either side of the bridge so that the bridge hole can be pumped out, inspected and repaired. The lower 50% of the dam must be double bag depth while the upper 50% may be single bag. Dry suits are recommended for the installation team. Once the dam is in place then the hole can be pumped dry. Careful checks must be made to ensure any leaks and weepages are sealed before work starts. The pound levels either side of the bridge are to be monitored to ensure they do not drop below the minimum marked – if so then pumping around the dams may be required. At the end of the job the dams must be completely removed so as not to cause a navigation hazard. Any fish, etc. stranded must be rescued and returned to the pound.

Work in progress notes: