IWA Technical restoration handbook
Introduction

During the 1980s IWA Restoration Committee began to publish a series of Information Notes on various subjects relevant to waterway restoration. Their purpose was to provide guidance and to prevent waterway groups wasting time and effort acquiring the basic information on an individual basis. Following a Government grant and three years of development, the Technical Restoration Handbook was completed, comprising 19 chapters on various topics.

The authors of the chapters come from a range of organisations and from professional and experienced people within IWA membership. Every chapter has been reviewed by at least two reviewers and amendments were made in the light of the comments provided. Further input and comment has been derived from the Department of the Environment, Transport and the Regions (DETR) and Restoration Committee seminars. Every care has been taken in the compilation and checking of the information contained in the handbooks. However, the Association cannot accept any liability for the accuracy of the statements in the Handbook or omissions there from and readers are recommended to seek professional advice on specific proposals or problems

Funding for Waterway Restoration (2nd edition)

by
Andy Screen

Introduction

1. One of the most important aspects of any waterway restoration project, if not the most, is the ability of the organisation promoting the restoration to raise funds for the job. From the outset, money is needed to produce literature, finance small-scale work parties tidying up the towpath, repointing brickwork, painting bridges and the like. At the other end of the scale, usually many years down the line, when you have the public, the local authority and everyone else on your side, there is the simple matter of digging out maybe fifty miles or more of infilled waterway, rebuilding a few dozen locks and maybe crossing a couple of motorways!

2. The good news is that at present there is plenty of cash out there to be had; the bad news is that it is not all earmarked for waterway restoration and there are thousands of other organisations fighting to get their hands on it.

3. The principal aim of this chapter is to highlight the major sources of finance that are available with guidance where possible on the best ways to maximise your chance of getting hold of it. It should be made clear from the outset that the providers of the really big money (say £100,000 plus) are generally public sector, and the grant making bodies of this kind change quite frequently, and their 'rules' even more so. The information in this chapter will consequently over time become outdated - indeed there have been significant changes since the first edition of this chapter was published in 1998, and there will be more changes between the time of writing this 2nd edition (March 2004) and publication – and it is important that potential applicants keep abreast of such changes.

4. For the fundraiser, probably the most significant change since the first edition has been the massive expansion of the Internet, and its increasing ease-of-use. Where possible, useful website addresses (URLs) are shown, though the reader must be aware that these URLs do change quite frequently; if in doubt, try to trace information through a good search engine such as Google (www.google.com) and then bookmark any pages that are useful.

5. The author is responsible for funding issues for the IWA Restoration Committee [29] and, along with other bodies listed in the Appendix, may be able to provide up-to-date guidance as required on what is available.

6. In s.36-38 and s.49 there is brief comment on benefits-in-kind. Do not forget that the supply of goods and services for free is as valuable as a cheque, not only to the extent of the inherent value of such goods and services, but also in the increased leverage in securing public sector grants through any 'matching funding' requirement.

7. For the purpose of clarity in what follows, unless otherwise indicated, the organisation that is trying to secure funds for a waterway project is referred to as 'the Society'. Although many such organisations are in fact trusts, 'a Trust' is taken to mean a charitable trust established to donate money to good causes, rather than one established to receive money.

SOME BASIC GROUND RULES

8. Whether you are at the beginning of your project, looking for the odd £25 here or there, or at the point where you want millions, you should charge one or more members of your organisation with the specific 'fund-raiser' role. It is a job that, while not necessarily requiring

any particular expertise other than the power of persuasion and occasionally patience, requires levels of initiative and drive that can be lost if shared amongst a committee with a myriad of other responsibilities.

9. The Society should be formally constituted. Most grant-making bodies will not make grants to unconstituted Societies, but there is a greater and over-riding need for Societies receiving monies for projects yet to be fulfilled, to be seen to be accountable to both their members and those making donations or grants to them. In this regard, the constitution should require such things as the annual auditing of accounts, re-election and removal of officers/directors/ trustees etc. It is worth always having a 'clean' copy of your constitution and annual report and accounts to hand, as many funders will want to see them. Registered charity status or limited company status may assist your ability to secure funds, but further discussion on these issues is beyond the scope of this chapter. Charity status may however be necessary to obtain some of the tax concessions mentioned in s.43-47 and s.67.

10. Be flexible. Consider all possible ways of securing cash for your project. This is somewhat easier at the bottom end of the scale where the odd £25 donation is not conditional on anything whatsoever and you can use almost any means within the limits of your ingenuity to secure it. One Society sold jars of black mud from the bed of the canal to raise funds. There are, quite frankly, no limits.

11. For private/public sector funding, it must be remembered that the funding body will invariably have a specific remit into which any project must fit to stand a chance of success. Instead of working out projects to the smallest detail and then looking for potential funders, consider the matter from the opposite perspective. Here is a funding body that is known to support X, Y and Z; can the Society produce a project that delivers on X, Y and Z as well as meeting its own needs? If nothing else, the concept should encourage more lateral thinking!

Contacts, Talking and Partnership

12. These are three key words that keep cropping up when discussing private/public sector funding. All require a pro-active approach. At an early stage the Society should establish contact with individual officers in the navigation authority (if there is one), local, district and county councils (particularly council leaders, planning/policy & resources officers), local businesses, local civic trusts and other relevant societies and MPs, and that contact should be maintained throughout. Contact should be two-way wherever possible; sending the officers the Society newsletter is important but what is probably more important is what they can tell the Society. The tiers of local government are particularly important as they will be concerned with developing the local economy, bringing in new investment etc, and waterway restoration is an ideal vehicle for that. They will often know before anyone else about new initiatives, financial or otherwise, that could benefit the Society's project. Establish contacts, talk and listen.

13. For virtually all public sector funding, partnership between private, public and voluntary sector is paramount. To benefit from public money, schemes must be seen to benefit, and have the support of, a wide cross-section of the community. Many successful schemes in recent years have been led by legally constituted partnerships comprising the three sectors, most of which will have had their genesis in the informal contact described in the previous section.

FURTHER INFORMATION ON FUNDING

14. There is a plethora of information available concerning fund-raising, and the major organisations in this area are frequently updating the literature they produce. Some of it is available from your local library (often in CD-ROM format) and this is the cheapest way of

finding the information, as the books can be expensive. However, the cost of 'buying' the information should easily be recouped if the advice offered is heeded and should be regarded as an investment.

15. Three of the main organisations that produce guides are the Charities Aid Foundation (CAF) [7], The National Council for Voluntary Organisations (NCVO) [35] and the Directory of Social Change (DSC) [16]. Some of the titles produced are held by the IWA Restoration Committee [29], who may therefore be able to answer particular points; they do not have sufficient copies to run a 'library service' however, and copyright rules will prevent them from photocopying entire sections for you.

16. A few key titles are:

CD-Rom Company Giving Guide (3rd edition)(DSC) ISBN 1-903991-13-7
The Environmental Funding Guide (3rd edition) (DSC) ISBN 1-900360-21-7
Grant-making Trusts CD Rom (3rd edition) (DSC) ISBN 1-903991-32-3
A Guide to the Major Trusts Vols 1-3 and a number of regional guides (DSC)
A Guide to UK Company Giving (4th edition) (DSC) ISBN 1-903991-01-2
A Guide to Funding from Government Departments & Agencies (2nd edition)(DSC) ISBN 1-900360-79-9
A Guide to European Union and other funding for NGOs (9th edition)(ECAS) ISBN 2-960028-04-X
The Complete Fundraising Handbook (4th edition) (DSC) ISBN 1-900360-84-5
Directory of Grant Making Trusts (18th edition) (CAF) ISBN 1-903991-33-1
Tried and Tested Ideas for local fundraising events (3rd edition) (DSC) ISBN 1-903991-37-4
Funding for Change (DSC; quarterly on subscription)

17. DSC also operate seminars and courses for fund-raisers, and those who are serious in securing major funding might well feel that at around £100 per day (most courses are one or two days) these seem to offer potentially good value for money. Finally, DSC also operate a website www.trustfunding.org.uk, which, for a price, offers access to various listings.

18. Many of the public sector bodies who themselves try to procure funding from national and international sources can offer advice on funding packages though such advice may be less easy to obtain if they do not have a tangible interest in the project. Many local authorities now have Lottery officers and it is advisable to make contact with such people even if the Lottery is not a current target for the Society; inevitably the officer will have experience of other available sources of funding. The regional Government Offices [25] and many local authorities have European officers whose main objective is to secure European funding, and NCVO are particularly strong on European funding for the voluntary sector.

19. There are of course also professional fund-raisers. The cost of such services are not going to come cheap (£250 to £600 a day might be typical) - and Societies must be able to justify the fees incurred against the additional funds likely to be raised if they pursue this angle - and there may be legal implications of a charity employing such a person or firm. The Charity Commission [8] will be able to advise further on this issue, and the Institute of Fundraising (formerly the Institute of Charity Fund-raising Managers) [30] and the Association of Fundraising Consultants [2] may be able to suggest some names.

THE INTERNET

20. As indicated earlier, the Internet is a massive resource, which if nothing else, will lead you into all the areas mentioned in s14-19. In fact it will of course take you much further and the only limitations are your time, your Internet Service Provider’s charges and the speed at

which your computer can download information. Not only do many of the funding agencies, government departments and support agencies have websites, but so do some Trusts, most large companies (who are invariably keen to publicise their community work) and of course other Societies who will often publicise where they have secured grants from (and there's no harm in borrowing other people's ideas!). There are a number of websites that offer general advice on finding funding sources (e.g. www.funderfinder.org.uk, www.fundraising.co.uk and www.access-funds.co.uk) though you will invariably find that the best and latest information is only available by subscribing £40 per annum or so to an e-newsletter. Some of this information may be accessed free of charge through your local branch of the National Association of Councils for Voluntary Service [34].

21. Just Giving (www.justgiving.com) is a new resource which gained prominence as a means by which individuals taking part in sponsored events such as the London Marathon could set up a webpage, through which friends, family and indeed anyone else, could sponsor them. While this may have limited application for most Societies, the site offers more general assistance on on-line fundraising (with a particular slant on tax reclaims), and for a subscription starting at around £200 a year offers webspace through the Just Giving portal with full technical support including Gift Aid processing.

22. Needless to say, most Societies have their own websites already and may be able to utilise those in a limited form of fundraising capacity.

MAKING APPLICATIONS FOR GRANTS

23. Any request for donations and grants has to be made in a way that is going to maximise the possibility of success. All potential benefactors from Society members to Heritage Lottery Fund (HLF) have limited resources and will make decisions on where to give on the basis of the information before them. In the case of Trusts and the private/public sector sources, they will usually know nothing about waterways in general, let alone the one that is the subject of the application in front of them. For this reason, talk to potential benefactors as much as possible before submitting a bid. They might not want to know the minutiae of the project at an early stage, but they can point the Society in the right direction on legalities, matching funding, feasibility studies (see s.31-32); they may even suggest that the project is ineligible which will avoid wasting further time on an application.

24. Applications for funds should be brief but professional. Where the benefactor does not have a prescribed application form (i.e. most Trusts and companies) try to keep to two or three sides of A4 paper, with a single-sided covering letter. A simple map and a couple of photographs might help, but do not go overboard, and only include them if they are relevant. Voluminous glossy brochures and videos will invariably go un-read and un-watched and, for all but the largest projects, will usually be regarded as evidence that you have enough money already.

25. If a full bidding document is also required by the funding body then this needs to be equally professional, and concentrate on the factors that are relevant to the funding body, be it jobs created, access to heritage sites or whatever. This is not an area for the uninitiated and will invariably require the use of external consultants, unless the Society has a local authority partner with suitably experienced/qualified officers. A similar line should be taken if a fully worked business plan is required. The fees for such consultants, incurred as part of putting the bid together, cannot usually be included in the bid or as matching funding.

26. Do not assume any prior knowledge of your project on the part of the benefactor (unless you know otherwise and can be sure that he/she will be the ultimate recipient of your application) and do not make the mistake of believing that just because you can see the clear

gains to the community of restoring a waterway that it is going to be so blindingly obvious to someone else.

27. Keep to facts (and if necessary, figures), and if the benefactor has clear criteria on what projects they support, make sure that your project not only meets the criteria, but is seen to meet the criteria in the application.

28. Demonstrate support for the project to give it credibility but do not give the impression that the Society has so many friends in high places that it could probably get the funding elsewhere if this application is rejected; most benefactors, however large, like to feel that they are making a difference. The other side of this argument is not to give the impression that the project will be sunk if they reject the application; it gives neither the Society nor the project much credibility at all. Unfortunately there is a thin line between the two extremes; if in doubt, do not play the card at all.

29. Where there is a specific application form to fill in, do so clearly and concisely. Avoid the use of 'not applicable' unless it is patently so; that is invariably a matter for the benefactor and not the applicant to decide. In addition, remember what most of us were told in our school days about exams; answer the question that has been asked; not the one that you think they should have asked, or the one that you would have liked them to ask. If the form allows for additional comments on a separate piece of paper, again restrict this to a couple of sides of A4 if possible. Include a map and a couple of photos if they are relevant and necessary to 'illustrate' the project, but not otherwise.

30. Be very careful about trying to 'deceive' the benefactor about some aspect of the scheme which it is felt may not appeal to them; it is surprisingly obvious when someone is deliberately trying to avoid telling you something.

31. For major projects, particularly those with a high engineering content, and impacts on highways, water resources and the natural environment, any bid for funds is likely to have to be accompanied by engineering/feasibility/management/benefit studies and/or an environmental assessment. It is beyond the scope of this chapter to dwell on these issues, but suffice to say that they are a necessary part of the application, particularly for bodies demanding evidence of long-term regenerative impact such as the European Community. Statutory requirements aside, independent studies by qualified consultants are invariably given greater weight than in-house studies though this necessarily adds to the cost of making the application, and the cost may not always be recouped even if the application succeeds.

32. HLF [27] have now made it clear that they will not give financial assistance for canal restoration feasibility studies per se, and historically they were one of the few third-party funders who would; however all the principal sources of 'big money' should be able to advise on what sort of studies they are going to be looking for, and it is advisable to talk to them before committing the Society to what may be unnecessary expense. IWA Restoration Committee [29] should also be able to offer advice in this area.

33. For large projects, bear in mind that there will also be one if not more 'interviews' with the funding body, and those who present the application will have to be as 'professional' as the application and expensive consultants' reports that they bring with them. The choice of 'presenter' should be carefully considered, and if need be, left to other partners in the project with more experience in such matters to lead on, even if it means not being there to bask in the initial glory of success.

34. It is very important that bids to the public sector in particular are not rushed. If a Society is not ready to bid then it should not do so. A number of bids made to the Millennium Commission (waterway-related and others) were incapable of execution by the end of the

century deadline, often because landowners, local authorities and the local populace were not fully on board. Ill-conceived applications might not only sour the name of the applicant with the funding body, but could impact negatively on other schemes of a similar nature.

35. Seeking major finance is the last step in the restoration process. By the time such bids are made, the following steps should have all been achieved:

a) public support for the scheme should be demonstrated,
b) the benefits from smaller scale volunteer projects on parts of the waterway should be demonstrated,
c) restoration should be proven to be possible physically, and if necessary, economically and environmentally as well, and within any required timetable,
d) local authorities and the canal owner should be actively supporting the scheme,
e) a management plan for the future running of the waterway should be in place.

BENEFITS-IN-KIND

36. Providing matching funding is a key element of securing large grants from the public sector and can provide a major stumbling block; most grants of this type operate on the basis of providing specified percentages of the total project cost, so that the more they give the Society, the more it has to find from elsewhere. Except where stated, most of the public sector sources of funding can be used as matching funding against each other. One area of flexibility often allowed is that the matching funding can include the 'cost' of voluntary labour, benefits-in-kind, gifted land, festivals, tripboat operations etc.

37. It is therefore important that all these avenues are explored as part of putting any project application together. One of the obvious areas is voluntary labour such as that supplied by Waterway Recovery Group (wrg) [29]. Bodies such as HLF set out specific rates at which manual and professional services can be 'costed' and such services can then go towards the matching funding requirement. Other possible sources of free (or cheap) labour are open prisons, the probation services, Duke of Edinburgh Awards scheme, British Trust for Conservation Volunteers (BTCV) [4] and the ever-changing schemes run by the State for enabling those out of work to help in the community.

38. In a wider sense, think about the goods and services that the Society needs to procure in order to progress the project, and look at ways that it may be able to acquire these without having to spend hard-earned cash. Most Societies will include members who are accountants, ecologists, relevant council officers (e.g. town planning, building conservation, economic development) or who run builders' merchants, haulage firms, garden centres, or at least have local firms of that nature that might be able to 'support' the project in some way, releasing funds for other aspects of the job that by necessity must be bought in at commercial and market-dictated rates.

SOURCES OF FUNDS

39. In view of the comments in s.10, it is impossible to come up with a definitive list of possible funding opportunities, particularly at the lower end of the scale. This chapter will hopefully cover a sufficiently wide range to at least inspire fund-raisers to think of other sources that may be appropriate to their own project, location etc. In an attempt to provide a coherent structure to the list, sources are covered under four separate headings, though there may be an element of cross-over at times:

a) Society membership,
b) the public at large,
c) private sector and trusts,

d) public sector, including the European Community.

There is sufficient evidence to suggest that most voluntary bodies work their way through broadly from (a) to (d), with larger amounts at stake as time goes on.

SOCIETY MEMBERSHIP

40. The heading should be taken in its widest sense comprising those individuals and organisations who are in some sense active participants in the objectives of the Society, and by definition support the general cause.

Membership subscriptions

41. Most Societies charge a subscription to cover postage of newsletters and the ancillary costs of running the Society; few regard the subscription as an opportunity to raise funds per se. There is a limit to how much you can raise for project funds through increasing subscriptions without pricing yourself out of the market. The consensus view would seem to be that a Society is better off keeping subscriptions as low as possible, enticing new members to join, and then trying to extract further cash from them once they are 'converted' to the cause. Subscription notices could include a Gift Aid declaration (see s.45) though Societies will need to be aware of the restrictions on member benefits (ostensibly the Society newsletter) if subscriptions themselves are to qualify for tax relief; the IR65 leaflet referred to in s.46 gives more information on this. It is worth adding however that the printing of a cover price on the Newsletter (for purchase by non-members) is tantamount to putting a value on the ‘benefit’, and a value that will probably make subscriptions ineligible for Gift Aid; it would be advisable not to quote a cover price in such circumstances, and to make reference only to a suitable donation where sold to non-members. The value of member benefits may also be an issue for societies that are registered for VAT, but such matters are beyond the scope of this chapter.

Additional donations

42. Having made subscriptions as low as possible, do not hesitate to advertise the fact, and 'encourage' additional donations at the time subscriptions are renewed. It is worth noting that even though the vast majority of subscriptions are paid by cheque, people still tend to like writing cheques for round figures. If your subscription rate is £10, you will receive a lot of cheques for £10; put it up to £12 or £15 and you might be surprised at how many £20 cheques you receive! Many Societies also run 100 Clubs which are essentially regular raffles with cash prizes for a pre-determined maximum number of permanent ticket holders, and which can help draw extra cash from the hard core of the Society's membership. Once members are locked in to a regular donations/subscriptions like this (known as ‘committed giving’), they may be even more receptive to further requests for larger one-off amounts, though be wary of pushing your luck too far. The same Gift Aid considerations apply as in s.41.

Covenants (Gift Aid)

43. There are a number of ways in which the Inland Revenue [28] can enhance contributions made to the Society, all of them dependant on the donor, be they individual or corporate, being a tax-payer. Historically, covenants were the principal method adopted for individual donors but they have been all but replaced by Gift Aid, see s.45; any covenants that were established before 6 April 2000 and are still ‘in date’ remain valid, but these will be few and far between and no new covenant schemes are likely to have been established since that date.

Payroll Giving

44. Tax concessions are also available where a benefactor chooses to make donations to specified charities through their employer's PAYE arrangements, though the employer needs to sign up to the scheme, and many remain to be encouraged so to do. The Charities Aid Foundation [7] can give more information on this subject and manages the most well-known payroll giving arrangement; Give as You Earn (GAYE). The Society would generally need to be a registered charity to benefit from such an arrangement. It is worth noting that if a member is in receipt of a company pension that is paid net of tax through PAYE, then they can also use GAYE, and some employers will even match contributions paid through the scheme. Furthermore, until April 2004, the Inland Revenue will add 10% to all donations made through the scheme. The Inland Revenue form IR65 deals with Payroll Giving and can be downloaded from their website [28].

Gift Aid

45. Since April 2000, the Gift Aid scheme has been expanded to become the principal means by which most charitable bodies will obtain tax relief on individual donations of any size, be they regular or one-off. The Society registers with the Inland Revenue and lodges their bank details with them, in order that direct credits can be made by the latter. The donor needs to make a declaration (which can be verbal, subject to written acknowledgement by the beneficiary) requesting that the Society treat all gifts and donations as being Gift Aid donations, and the Society then reclaims the Basic Rate tax relief – currently £28.21 for every £100 donated – from the Inland Revenue, by submission of a simple listing. Higher Rate taxpayers can reclaim the difference between basic and higher rate relief (a further £38.46) through their self-assessment forms, and should of course be encouraged by the Society to donate that to them too! The comments made in s.41 regarding member benefits should be noted again.

46. From April 2004, self-assessment forms will include a list of registered charities, any of whom taxpayers can elect to receive any tax repayments owing to them, which may of course include the higher rate reliefs mentioned in s.45. Charities had to pre-register by September 2003 to appear on the list and it is not known whether further invitations will be made. Inland Revenue form IR65 also covers the Gift Aid scheme or contact the Gift Aid Helpline [28].

Legacies

47. It is worth giving occasional reminders to members that they can bequeath money to the Society in their will, such legacies being free of any Inheritance Tax liability. Standardised codicils are available from solicitors, which avoid the need for the will to be re-written. A legacy is likely to be the biggest donation an individual member ever makes to the Society. A possibly useful statistic, though you may need some ingenuity to take advantage of it, is that by virtue of them generally out-living their spouses, 69% of legacies are from women.

'Sponsorship' and Appeals

48. A more targeted approach to members for donations is to tie donations in to specific projects with some symbolic recognition of donations above a certain level (say £25). Recent examples include inscribing benefactors names on lengths of sheet-piling, or small plaques on replacement mileposts and newly planted saplings. Lock restoration has also in the past been financed by "Buy-a-Brick" schemes and finance for a tripboat could be raised through a "Buy-a-Seat" scheme. If a project has a pre-determined target, where potential benefactors can see how much difference their contribution will make to the project, there is likely to be a better response than to a general plea for cash. Such appeals can of course be extended beyond the Society membership to the wider public, particularly if the Society can find a well-known personality to ‘front’ the appeal. Again, Gift Aid (see s.45) could potentially be used to enhance the value of any donations.

Benefits-in-kind

49. Bear in mind that members may be able to contribute in non-monetary ways that could either count towards matching funding for major public sector grants, or more simply release the Society's own funds for more pressing needs. Many Societies ask on the membership application form for the applicant's occupation. Those that reply 'Accountant', 'Haulage Contractor', 'Builder' and the like should obviously be cajoled in the nicest possible way to top up their annual subscription with some more tangible assistance. It is worth thoroughly documenting any such assistance (see also s.59) at the time it is given, especially if there is the possibility that it might be used to secure matched funding from another funder, where formal evidence of the initial ‘grant’ might be required.

THE PUBLIC AT LARGE

50. In many ways, getting money from the public can be the hardest task and the return is often perceived to be not worth the effort. They are not converted to the cause in the way that Society members are, and are not put on this earth to donate money in the way that Trusts or the National Lottery are. It is also rather difficult to specifically target them. The other side of the coin is however that there are millions of them and they are all potential members and benefactors.

51. Never under-estimate the love of the British public for car-boot sales, country fairs and summer fetes. Not only will the public pay good money for what you and your members might regard as junk and gladly donate to the 'sales stall', but by selling the Society and its projects, you may attract new members who have rather more to give than might sometimes appear. If the Society is a registered charity then it will need to establish the position on commercial trading, which may need to be undertaken by a subsidiary or a separate entity. Prize Draws, often directed at Society members, can apply equally well in the public arena, bringing in more new money from outside the waterways sector, and many societies will endeavour to get the main prizes sponsored to reduce the initial costs.

52. On most major projects there is the need to attract and often demonstrate wide public support for what you are trying to achieve. Although such issues are beyond the scope of this chapter, it would seem to be clearly advantageous to be seen in the public arena from time to time, showing that you are part of a wider community. If in so doing, you are able to raise cash as well as awareness, then there is a double gain to be made.

53. The cost of operating a 'sales stall' can be expensive in both time and money. Any Society must weigh up the cost against the twin benefits of direct cash income and the wider benefits of meeting the public. There is no easy formula for the latter and each Society will have its own criteria on which to judge such things. Be aware that the restoration schemes that have succeeded have generally done so on the back of major PR work and attraction of public support, and at the expense of schemes which by and large have not been 'sold' well to the outside world. Many will point to ‘branded’ products as a key way of combining fundraising with raising awareness – selling t-shirts, key-rings, pens etc, all adorned with the Society logo helps keep the message alive.

THE PRIVATE SECTOR AND CHARITABLE TRUSTS

54. Often, one of the least explored avenues for funding is from the private sector. There are however literally hundreds of companies that donate thousands and often millions of pounds to 'good causes' every year, and many hundreds more that with the right persuasion might part with a few hundred pounds either in cash or 'goods and services'. Occasionally they will do this through solely or jointly sponsoring a targeted campaign such as Shell's sponsorship of

the Mersey Basin and Shell Better Britain Campaigns (see s.71-72). More generally they will allocate a reserve to be distributed through donations as they see fit across a range of activities that they feel they would like to be associated with. Above this 'reserve' there might be further opportunities of sponsorship, where the company needs to be offered something in return (good publicity being the most obvious example) and their expenditure can be justified under their marketing budget for example. As with donations from individuals, the tax concessions available to the Society (and its VAT registered status, if applicable) may be affected by the value of the 'benefit' given back to the benefactor (see s.67).

55. Societies should take care that approaches to a company or trust are co-ordinated. A successful request for a small donation to a Festivals Committee for example, may eliminate the Society from the possibility of a much larger grant at a later stage.

56. There are few short-cuts to success other than being prepared to accept countless rejections, and making your project look an appealing proposition. This is the domain of the proverbial 'begging letter' but the generally held view is that you should target companies and Trusts carefully, and if necessary play on the factors that are likely to specifically appeal to them; if nothing else this will demonstrate to them that you have done your homework, and that they have not received something that has been sent in identical format to every other business in the area. Taking the trouble to discover executives' names can help in targeting correspondence.

Companies

57. *A Guide to UK Company Giving* and/or the *CD-Rom Company Giving Guide* (see s.16) will give details of the major benefactors, what sort of projects they support, what sort of amounts they generally give, whether they accept unsolicited requests, and if so, if there are particular times of the year when such requests should be made.

58. The absence of a company's name from the guides does not of course mean that they will not support good causes, but unsolicited requests to such companies require a little more homework and it would be advisable to make some discreet and informal enquiries first. Usually such requests are to local businesses who may indirectly or otherwise have some influence on your project in the future, and it would be inadvisable to get on the wrong side of them through lack of thought. You will probably find that you have more success with a company where a key employee is already connected with the Society or the project (either in a professional or social capacity) even if the company itself would not on the face of it seem to be a 'hot prospect'.

59. Although money might seem to be the obvious thing to ask a company for, there may be other areas they can help. In the same way that a Society member who is a builder might be asked to help on a lock reconstruction (see s.49), so the local builders' merchants might be able to donate bricks, scaffolding, 'goodwill' discounts etc.

60. A recent development is Corporate Social Responsibility (CSR), a concept that offers opportunities for those who want to help companies show that they are doing their bit for the wider community. Partly through globalisation and the need for accountability, transparency and social responsibility generally, more and more companies are being persuaded to contribute (and perhaps more importantly, to be seen to contribute) in a number of ways; donations to and sponsorship of community schemes being the traditional route in, but more recently, for example, through 'volunteering' schemes for employees. Under such schemes, staff may be encouraged either individually or en masse to volunteer for community projects either during the working week or at weekends, often with the carrot of an extra day's paid holiday for each day spent volunteering. Societies may therefore need to think about non-

pecuniary ways in which companies might help them, and to look at companies' annual CSR reports to see if there is an opportunity available.

61. British Telecom (BT), who used to fund environmental projects through the Fieldfare Trust before channelling most of their grant-aid through telephone helplines and related activities, have a useful guide to *Bidding for Funds and Resources*, downloadable from their website (www.btplc.com/betterworld).

Charitable Trusts

62. Charitable trusts are also listed in a number of guides such as the *Directory of Grant Making Trusts* and *A Guide to the Major Trusts* (see s.16). Most trusts are either set up specifically by large companies (e.g. the Lloyds TSB Foundation and the Wellcome Trust) or family trusts; from the viewpoint of the potential beneficiary no distinction needs to be made between them, though their genesis may well dictate the areas, geographical and otherwise, in which they operate.

63. As with approaches to companies, do not make requests 'blind'; know what projects they support, how much they generally give, and whether they accept unsolicited requests - a great many do not. Do not give the impression that the request is an 'off-the-peg' standard begging letter, even if it is! The aforementioned books offer guidance on how to make applications, most of which applies to approaches to the public sector too and is covered in s.23-35.

64. A key thing to remember for what might be an annual exercise involving up to one hundred letters to companies and Trusts is that many benefactors will not give to a Society that has received a grant from them within the last few years say, and may view very dimly a request from a Society that applied last year and was told for example that they were already committed to a number of environmental schemes and would not be able to look at new projects in that field for another five years say. The moral is to monitor responses closely, favourable or otherwise, and tailor future mailing lists accordingly.

65. No names are suggested here for approaches; the fact that a particular company or Trust has donated in the past may mean they are less likely to give to a similar project again, at least in the immediate future. Equally it would be unfair to a Society that may have succeeded through hard endeavour to tap a particular 'vein' to open up their 'warm donor' benefactor to a flood of competing 'cold' applications. It has to be said that hunting out potential targets can be time-consuming, expensive or both, and is likely to remain that way until either DSC, CAF or someone new decides to put a free, fully searchable database on the world wide web. As with all things, the investment in time and money needs to be weighed up against the probability and amount of the gain.

66. Besides the titles above, *The Environmental Funding Guide* (see s.16) lists companies and Trusts with a particular leaning towards environmental projects, and is somewhat cheaper.

The Inland Revenue [28]

67. As with individuals, company contributions to the Society can also be enhanced by special tax relief arrangements. Gift Aid runs along slightly different lines to that described in s.45-46, in that the company pays gross to the charity (with no need for any declaration) and then makes an allowance in its Corporation Tax calculation. Relief is also available for gifts of shares, equipment or trading stock to a charity, employees temporarily seconded to work for a charity, and for sponsorship payments where the benefactor gets some publicity for its contribution, such publicity being commensurate with the amount paid (Gift Aid payments are subject to strict rules on what 'benefits' the company can receive in return). Inland

Revenue form IR64 covers these four main areas of tax relief for businesses, and can be downloaded from the Inland Revenue website.

Other independent organisations

68. Five other organisations are listed below, which are merely an indication of other bodies from whom grants are available. BP, BT and the Co-op are three other companies who have sponsored specific schemes from time to time, and there will be others, particularly operating on a purely local level, like the Mersey Basin Campaign and Wessex Water. Some of the titles in s.16 may be able to offer some more up-to-date names.

Community Service Volunteers (CSV) [12]

69. Predominantly a charity aimed at promoting volunteering - chiefly through the Get Active campaign for over-50s and Make A Difference Day (MADD) – there is also a small grants scheme run annually (December to April) in conjunction with Whitbread called Whitbread Action Earth that could support the purchase of tools for community volunteer-based events.

Inland Waterways Association (IWA) [29]

70. The IWA is able to offer grants to waterway restoration projects from its Restoration Grants Fund; grants below £2,000 are subject to lesser criteria than those above this threshold and although there is no maximum amount as such, grants in excess of £10,000 are uncommon. Low-interest loans are also available. The Association's Restoration Committee is also available for advice on all aspects of waterway restoration.

Mersey Basin Campaign [33]

71. The Campaign is sponsored by a number of national companies and has schemes for projects aimed at improving the watercourses in the Mersey basin, covering Merseyside, Greater Manchester and parts of Lancashire and Cheshire. At present there are no directly relevant grant schemes, with most funding being channelled through the SRB-funded River Valley Initiatives, though these could be of peripheral interest to some Societies whose canals fall within an obvious river catchment.

Shell Better Britain Campaign (SBBC) [41]

72. Grants of up to about £2,000 are available from the Community Projects Fund for schemes offering tangible improvements to the local environment and community benefit. There is also a Partnership Innovation Fund offering grants of up to £10,000, focusing on collaboration between different groups to increase the effectiveness of community-led activity. However, both of these schemes are closing at the end of 2003, and there is as yet no news on what will replace them, though Shell does remain committed to building on the success of the Campaign over the last 33 years. Membership of the SBBC Network gives access to a useful newsletter and information notes on a variety of subjects.

Wessex Watermark [47]

73. This is a scheme, launched by Wessex Water in 1993, which supports environmental projects with awards of between £100 and £1,000 on a quarterly basis. Each year there is a single gold award of £2,500 and in 2003 three £10,000 awards were made to celebrate the tenth anniversary of the scheme. The geographical remit is the Wessex Water area of Somerset, Dorset and Wiltshire plus Bristol and parts of Hampshire and Gloucestershire.

THE PUBLIC SECTOR AND EUROPE

74. The public sector is normally seen as the most attractive source of funding for projects that are well advanced and looking for sums usually in excess of £100,000 to complete a major aspect of the project. The majority of such grants come from governmental or quasi-governmental bodies and are usually born out of some aspect of government policy, which means that they have a clear remit into which any project must fit to stand a chance of success. It must be borne in mind that as government policy, and indeed governments themselves, change, the thrust of such schemes will also change. This was particularly marked when the Derelict Land Grant regime was abandoned in favour of English Partnerships and it became much more difficult to obtain funding for remedial restoration works on abandoned waterways.

75. It is not feasible to list all the current public sector schemes that might offer funds for waterway restoration, and books such as *A Guide to Funding from Government Departments & Agencies* and *The Environmental Funding Guide* (see s.16) should be consulted for the fuller picture. The major players are listed below with a brief description of their remit, eligibility etc.

76. National initiatives are listed under three main headings;

- the National Lottery,
- local and central government schemes (including those of the Welsh, Scottish and Northern Ireland assemblies), and
- quasi-governmental schemes.

It should be noted that since the turn of the millennium, many of the English lottery and quasi-governmental schemes have decentralised and operate in geographical regions that invariably mimic those of the Government Offices [25] and Regional Development Agencies [39]. With a few exceptions, the Appendix lists only the head office's details, but in practice applicants need to approach their local office for application packs, details of eligibility, priorities etc.

The National Lottery

77. During 1996 over £1,700 million was made available to the then five lottery distributors and although this has gradually reduced into the new millennium, almost £13.8 billion has so far been allocated to the 'good causes' since the Lottery was established. Of the five original distributors, the Millennium Fund has all but closed and been replaced by the New Opportunities Fund (NOF), and the Arts Council are very unlikely to be in the frame for supporting waterway restoration (though you may wish to join the queue for a canalside sculpture trail). The four remaining and relevant distributors are detailed below, along with Awards for All, which is a small-grants scheme run collectively by all distributors. It is extremely likely that the Community Fund and NOF will merge during 2004; the feeling is that the governmental 'hand on the tiller' that has been the key feature of the NOF will persist into the new body, but the actual direction of funding is anybody's guess.

78. One lottery distributor cannot be used to provide matching funds for another lottery distributor, but a number of them could be approached for different aspects of a single project. For example, HLF could finance restoration of the water channel, the Community Fund a disabled trip-boat and Sport England a canoeing facility.

79. Key themes running through all lottery criteria are public accessibility and benefit, and high quality. In the last few years, equal opportunity and social inclusion have become increasingly important areas of consideration.

The Heritage Lottery Fund (HLF) [27]

80. HLF remains the most promising of the lottery distributors since the end of the Millennium Fund, and with good reason, given the number and diversity of grants still being made to the inland waterways sector; the £25 million paid to restore the Kennet & Avon Canal representing just under one tenth of the total HLF spend in 1996. During 1998, HLF held a moratorium on waterway applications while they considered the IWAAC (Inland Waterways Amenity Advisory Council) review of restoration priorities. What followed was a quite clear and unequivocal statement on what HLF would not fund, and what they expected to see in applications. Some of the key areas are that feasibility studies and dredging will not be eligible for support, and generally speaking new-build will not be eligible either, unless it is a small part of the whole project and not the principle heritage asset. The statement is on the HLF website under Policy Information, and contrary to what some believe, the statement is neither a damning indictment on waterway restoration schemes, nor an invitation to look elsewhere for money. It offers clarity and keeps the door wide open for applications.

81. The main criterion for a HLF grant is that the subject of the application must be a tangible heritage asset, man-made or natural. Although it has not been said in so many words, Societies should probably assume that HLF does not regard a 200 year old waterway as a heritage asset per se, but that HLF may be looking for old wharves, warehouses, bridges and the like if it is to show a sustained interest in the project. HLF will certainly be looking for genuine historic restoration, but following the *Broadening the Horizons of Heritage* consultation in 2001 it is clear that they are looking at heritage in a much wider sense, and projects that appeal to a wide audience, with emphasis on access, presentation, interpretation and new audiences are likely to stand a better chance of success.

82. There are two principal programmes; Your Heritage for grants between £5,000 and £50,000 and Heritage Grants for grants of over £50,000. Within the Heritage Grants programme there are also Project Planning Grants, which are available to bodies who are looking to apply for a Heritage Grant but need to 'work up' their project. HLF's literature makes it reasonably clear what they regard as project planning, and Societies will need to consider this in light of the earlier comment about feasibility studies (which along with business plans, are specifically excluded). It is likely that from time to time there will be additional themed funding programmes as have already taken place for, amongst others, Places of Worship and Urban Parks. There is no matched funding requirement for applications under Your Heritage, but there is a 10% requirement for Heritage Grants under £1 million and 25% above £1 million. There are also the Awards for All [3] and Local Heritage Initiative [32] schemes that are covered below.

83. Applications under all programmes are by a standard application form and are accepted at any time. HLF has made it clear that it is happy to accept bids even if some the details are still outstanding and their case officers will guide applicants as necessary. This was true in 1997 when this chapter was first written, and is even more true now that HLF has regionalised its operations. The application form is a first step and once you have a case officer appointed to your scheme, HLF can talk you through the finer points of putting the formal bid together. Do not however expect them to find matching funding, or negotiate with ambivalent landowners for you. Infact it might be that the application form is the second step since HLF now have a pre-application form under both of their main programmes, designed for applicants who need to check basic eligibility of their project before putting together an application.

84. Some of the key requirements are listed below - for elaboration consult the HLF application packs and other literature freely available from HLF:

- The project must either conserve and enhance our diverse heritage, or encourage communities to identify, look after and celebrate their heritage.

- It should also increase opportunities for learning about heritage and open up heritage resources and sites to the widest possible audiences.
- Matching funding can include voluntary labour (at specified daily rates) and benefits-in-kind, gifted land etc. Monies expended on the project in the 12 months prior to the submission of the application can count as matching funding (but beware that this might suggest that you have sufficient other sources of funding already).
- The project must be viable as an ongoing concern post-restoration; this means essentially that a management plan needs to be in place, probably requiring major involvement from local authorities, and a navigation authority etc unless the Society feels it can undertake such responsibility.

85. HLF may use other established bodies such as English Heritage [17] and Countryside Agency [13] to assist them from time to time, and evidence in an application that such bodies have already been consulted by the applicant can do no harm at all.

Local Heritage Initiative (LHI) [32]

86. Since 1999, the Local Heritage Initiative (LHI) has been operated by the Countryside Agency [13](see also s.122-124) in conjunction with Nationwide Building Society, on behalf of HLF, supporting smaller projects aimed at maintaining features that local communities feel are valuable, be they landmarks, customs or traditions. Canals were specifically cited in the initial publicity and LHI could provide small grants to local communities for survey, action and development projects. Historic waterway features are likely to be eligible. Originally the scheme offered grants of between £3,000 and £15,000 with an explicit 40% matched-funding requirement that could be covered by benefits-in-kind, voluntary labour etc. In exceptional circumstances the Nationwide Building Society would plug part of the gap if matched funding was proving to be a difficulty. It appears now however that there is the potential for 100% funding for projects up to £25,000, and where matched funding is still required, the Nationwide may still be able to step in as funder of last resort.

The Community Fund [11]

87. The Community Fund (the public face of the National Lottery Charities Board) has historically operated on the basis of particular transitory themes. Despite its recent decentralisation to regional offices, this still persists through local funding priorities, but the rules are more relaxed and projects outside of the priority themes might still receive funding. Few of the themes to date have indicated that waterway restoration projects are likely to benefit substantially from the Fund, and as the Fund's remit is very much 'people' based – its main aim is to look after the needs of the disadvantaged and improving the quality of life in the community - this is likely to persist. However inland waterways craft designed for use by the disabled have been successful in previous rounds so the Community Fund should not be ruled out for Societies looking at trip-boat operations.

88. It is however worth thinking a bit more laterally; a large number of charitable projects do, and could, operate along the canal corridor and could be persuaded to use the canal in their plans. For example, a day centre for disabled people could be housed in a disused canalside property. The charity bids for Community Fund cash to make the property suitable; the canal gets better road access, a new tenant, positive publicity, and all at no cost to the Society (who may even get a new meeting venue out of it all!).

89. Applicants must be charitable (though not necessarily a registered charity), benevolent or philanthropic organisations. Capital or revenue projects (to a maximum of three years) are eligible and should cost a minimum of £500 with no maximum as such, though £250,000 plus would be rare, particularly for local projects. There are no matching funding requirements.

The project must be financially viable, and the applicant seen to be capable of seeing the project through.

90. Grants are generally split between Large-sized Projects (local to one area and total project cost in excess of £60,000), Medium-sized Projects (local to one area and below £60,000) or Strategic (covering a number of areas or countries within UK).

The Lottery and Sports

91. Unlike the Heritage and Community Fund distributors, there is not a single distributor of funds for Sports; each of the home countries has a distributor:

- Sports England [42],
- Sports Council for Northern Ireland [43],
- Sports Council for Wales [44], and
- Sportscotland [45],

while the geographically all-encompassing UK Sports limits its activities to world-class sportsmen and sportswomen.

92. From the outset, the scope for waterway restoration projects to make more than superficial use of Sports lottery funding looked limited, even though activities such as canoeing, rambling, angling and cycling were cited as being eligible. In the eight years or so since the Lottery was launched we are not aware of any major funding coming the way of the waterway restoration sector, and in recent years there has been a perception that effort has been concentrated into more mainstream sporting activity.

93. There are variations between the criteria for each of the Councils and what follows should be regarded as that applying to England unless otherwise stated. The variations are generally peripheral as all the Councils are clearly required to fulfil a UK-wide remit, but the actual programmes established in each country to fulfil those objectives do differ.

94. The two principal programmes in England are the Community Projects Capital Fund (for capital projects costing over £5,000) and the Active Communities Development Fund (for people or groups trying to promote a more active lifestyle; grants between £5,000 and £30,000). Both programmes are particularly keen on projects that will get more young people, women, people on low incomes, people from ethnic communities and people with disabilities taking part in sporting activity.

New Opportunities Fund (NOF) [36]

95. The NOF was established in 1998 with the specific aim of improving education, health and the environment through a series of chosen ‘partners’ who submit omnibus proposals to NOF. If approved as partners, these bodies are then able to allocate grants to achieve their objectives. The choice of partners necessarily narrows the opportunities and the first ‘round’ of environmental projects (Green Spaces and Sustainable Communities) and associated partners offered little to the waterways sector. It has to be said that since then, the environment seems to have taken something of a back seat to health in NOF’s priorities and so, despite NOF receiving 33% of the total funding currently allocated to the good causes, there are currently few opportunities for waterways to receive any of this.

96. The Fair Share scheme is something of a joint initiative with the Community Fund (possibly a portent of things to come after the imminent [at March 2004] merger of the two Funds) and is aimed at awarding grants, principally through local authority schemes, to geographical areas who have thus far struggled to received lottery money. Local environmental projects are very much on the Fair Share agenda, but may not be on the agenda of the local authorities.

Awards for All [3]

97. Originally established to distribute the residue of the Millennium Fund, Awards for All is now a clearing-house for small grants (£500 to £5,000) for all of the lottery distributors. Each of the four countries of the UK has its own remit, and within the England scheme there are nine regional offices, which again might each have their own nuances and preferences, but there is one simple essential message; Awards for All funds projects that enable people to take part in art, sport, heritage and community activities, as well as projects that promote education, the environment and health in the local community. The application form is simple and turnaround times are short (usually well within three months). It has been seen as predominantly a supporter of events, rather than physical objects such as canal bridges, and this is generally true of the waterways-related grants it has made thus far. If this means funds for PR, saving the Society's bank balance for more tangible physical projects, then it is no less valuable.

Local government

98. There is no set pattern of funding from local, district and county councils, other than that reduced subsidies from central government mean that councils have less to give out than before. They can however be very adept at facilitating the acquisition of specific funds from central and regional government and Europe – many employ officers specifically for this purpose - and should be approached if only to this end. Where they can give financial support they may prefer to channel it towards a wider project that is likely to act as a catalyst for further investment from elsewhere. They may therefore be more keen to support the cost of a feasibility study for a Lottery bid, than a pair of lock gates; this may be extremely useful since at the time of writing very few funding agencies are keen to support feasibility studies. The attitude will vary from authority to authority, and it is obviously advisable to gauge their feelings beforehand. As intimated in s.12 the best move is to establish contact with local government early on, and play it by ear from there.

99. An indirect source of funding is the use of Section 106 Agreements (named after the appropriate section of the Town & Country Planning Act 1990) to secure improvements to, say, historic structures and public access as part of new developments. Essentially such an agreement is a condition or 'planning obligation' that can be imposed by a planning authority when granting planning permission, and that might therefore enable part of a restoration scheme to be funded and executed at someone else's expense. The growth of Corporate Social Responsibility (see s.60) means many more opportunities for this are likely to arise in the future, and it is therefore important to keep on-side with both local authorities and local developers and businesses.

Central government schemes

100. *A Guide to Funding from Government Departments & Agencies* (see s.16) lists all the current schemes, and it should be borne in mind that these are likely to change quite frequently. There is a government-sponsored website www.volcomgrants.gov.uk which gives information about both funding sources and generic advice. Some of the central government funding sources most likely to be of interest are briefly discussed below, but it has to be noted that despite the impressive tone of the government's *Waterways for Tomorrow* report issued in 2000, overt financial support by central government for waterway schemes remains somewhat elusive.

Aggregates Levy Sustainability Fund (ALSF)

101. On a similar remit to the Landfill Tax Credit Scheme (see s.107), ALSF was established to improve areas where aggregate extraction had taken place but also to encourage new ways of both reducing the need for extraction (e.g. by more recycling) or making extraction more environmentally acceptable. Almost £70 million was made available for the first two years of the pilot scheme (to April 2004) of which £60 million is for England, to be financed out of the tax levied on extractors. The funds are distributed by the Countryside Agency [13](see s.122-124), English Heritage [17] and English Nature [18], to whom applications should be addressed. The Countryside Agency is focusing on projects that deliver landscape, community and recreational benefits in areas affected by aggregates extraction with encouragement for community involvement. English Nature works with local communities to deliver ecological, geological and biodiversity benefits and English Heritage concentrates on historic environment, including historic buildings, archaeological sites and landscapes. At the time of writing it is unclear what form the scheme will take after April 2004.

Coalfields Regeneration Trust (CRT) [10]

102. Launched in 1999, the CRT is an independent grant-making body, albeit one that receives the bulk of its funding from central government. It is dedicated to the social and economic regeneration of coalfield communities in Great Britain, but its remit includes "providing community support and facilities" and "small locally-owned environmental improvement schemes", so should not be ruled out by Societies operating in the appropriate geographical areas. Applications are to eight regional offices whose addresses are available on the CRT website, but CRT will also give advice to schemes in coalfield communities even if the schemes do not meet the grant criteria. Over £75 million has been distributed by CRT since its inception.

England Rural Development Programme (ERDP)

103. Two of the schemes promoted by the Department for Environment Food and Rural Affairs (DEFRA) [15], under the ERDP umbrella may be of interest. Previously managed by the Ministry of Agriculture Fisheries and Food (MAFF) and aimed principally at farming landowners, Countryside Stewardship's main area of interest on waterway schemes is likely to fall under the banners of conserving historic features, creating new landscapes and improving opportunities for public access.

104. The Rural Enterprise Scheme, partly funded by the EU, is largely aimed at farmers looking to diversify, but quite specifically has broader social and environmental applications, including the conservation of the rural heritage and landscapes. One issue is that it will not support schemes that have received funding from other public sector/Lottery sources and is therefore only likely to be of use on small stand-alone peripheral projects.

Environmental Action Fund (EAF) [23]

105. Also sponsored by DEFRA [15], EAF assists constituted voluntary organisations in England with projects that meet the policies set out initially in the 1990 White Paper *This Common Inheritance* and the Government's more recent strategic objective of promoting more sustainable living. The priority areas have varied from year to year so it is hard to give firm guidance on likely targets in the future. However, for 2002-2005, EAF will be directed particularly towards projects that aid biodiversity and the understanding and awareness of sustainable development; funds are already fully committed for that period. There is no indication of the direction likely to be taken from 2006 onwards. Generally grants are for between £25,000 and £250,000, spread over three-year periods.

Groundwork UK and Groundwork Trusts [26]

106. DEFRA also directly funds the national charity Groundwork UK (formerly the Groundwork Foundation), and the thirty or so Trusts it has spawned, which operate on a partnership basis with private, public and voluntary sector bodies on environmental regeneration issues. They are not generally in the business of giving grants themselves, but are adept at pulling together funding packages for environmental schemes usually on the fringe of urban areas. Addresses and telephone numbers for local Trusts can be obtained from the head office.

Landfill Tax Credit Scheme (LTCS) [31]

107. Launched in 1996 by HM Customs and Excise, LTCS allows credits against Landfill Tax for licensed operators of landfill sites who make payments to approved Environmental Bodies (EBs) for, among other things, schemes that improve the environment within ten miles of a landfill site or encourage better waste management. Details of how to become an EB are available from the regulatory body, Entrust [20] though recent events suggest it might be easier to apply to an already-registered Distributive Environmental Body (D-EB), such as the Waterways Environmental Body (see The Waterways Trust [46]), even though it might have a tighter remit than the criteria set out by Entrust.

108. In simple terms, 90% of any payment to an EB or D-EB could be claimed as a credit against the operator's tax liability, up to 20% of that liability. For example, an operator with a tax liability of £9,000 had a maximum credit of £1,800. He could therefore make a payment of £2,000 to an EB, with a net cost to him of only £200. Many local authorities set up subsidiary companies to operate their landfill sites, and their own D-EBs, which would then give grants to qualifying causes, but other large D-EBs were established by national waste operators like Biffa, ARC and 3C Waste and by wildlife trusts.

109. In 2003 the scheme underwent a major change following a government review; projects aimed at recycling and improved waste management practices were hived off to a public spending programme, along with around two-thirds of the available funds. The remainder of the funds (probably frozen in pound terms for the immediate future) remain available for environmental schemes as before. The landfill operator’s 20% credit cap has been correspondingly cut to 6.5% for the reduced scheme, but otherwise the only change is that since October 2003, projects that encourage biodiversity have become eligible, widening the scope of the scheme.

Living Spaces

110. This scheme was established by the Office of the Deputy Prime Minister [38], and is run in partnership with Groundwork [26], the Urban Parks Forum and others. Grants of between £1,000 and £100,000 are available for local groups to improve open spaces in their neighbourhood, for the local community to enjoy. Although primarily aimed at parks (in their widest sense) almost all areas of publicly accessible open space within two miles of residential housing, are eligible.

Market Towns Initiative (MTI)

111. This scheme, principally funded by DEFRA [15] and channelled through the Regional Development Agencies (RDAs) [39] and the Countryside Agency [13], who operate the main website for the scheme; www.countryside.gov.uk/newenterprise/markettowns) (see s.122-124), offers some £37 million to help 120 identified market towns in England, aimed at reinvigorating them and the surrounding areas, and helping local people access a wide range of services.

The National Assembly for Wales [28]

112. Environment Wales [22], funded by the National Assembly and administered by the Prince's Trust on behalf of a number of partners including BTCV and Groundwork, is aimed at voluntary bodies involved in conserving and enhancing the environment and most of its target areas could cover waterway projects. Project grants, development grants, pre-project grants and start-up grants tend to be up to a maximum of £10,000 with a matched funding requirement of between 25% and 50%.

Northern Ireland Office [27]

113. The Department of Agriculture and Rural Development (DARDNI) is the statutory body responsible for most of the province's waterways and administers the Rural Development Programme, which includes grant-making powers, though probably of limited application to waterway restoration; the 2001-2006 programme includes local regeneration and strengthening local communities. The Department of the Environment's Environment & Heritage Service (EHS) also makes grants for listed buildings, conservation, natural and built heritage projects and access to the countryside.

Regional Development Agencies (RDAs) [39]

114. RDAs came into being from April 1999, initially to deliver many of the regeneration schemes that had previously come directly from central government, albeit often devolved to the regional Government Offices (whose boundaries they exactly share) or local authorities. Chief among these schemes was Single Regeneration Budget (SRB), which ceased to exist after Round 6 in 2002, though existing projects will continue through to 2006. Other funding programmes subsumed within the RDAs' control were the SRB Challenge Fund, English Partnerships' Investment Fund and the former Rural Development Commission's Rural Development Programme.

115. Each RDA has formulated a Regional Economic Strategy and will now operate a 'single pot' of funds, to which bodies can submit projects for funding. Clearly as the Agencies are running region-wide strategies it is important to make early contact as waterway restoration projects are generally only going to fit in as part of a wider regeneration strategy.

116. In common with the earlier SRB, City Challenge and Urban Programme schemes, the key is commercial regeneration, and waterway schemes will not always sit easily within this framework. However there is evidence that some if not all of the RDAs are embracing the concept of restored canals within their broader strategies and in these areas the RDA is seen to be the major likely source of funding for the future.

117. It is not always entirely clear where the work of the regional Government Offices (GOs) [25] stops and that of the RDA starts. With the exception of European funding, the RDA would seem to be the main port of call for regeneration finance, while the GOs are more concerned with administering central government policy in the regions. It may well be that the next round of European funding (from 2007) will be devolved through the RDAs too.

The Scottish Executive [25]

118. The Environment and Rural Affairs Department (SEERAD) administers a number of funds that might be of relevance. The Scottish Rural Partnership Fund comprises three schemes; the Rural Challenge Fund, Local Capital Grants Scheme and Rural Strategic Support Fund, and is designed to give financial assistance to rural communities to develop and improve local facilities and services. The Scottish Land Fund exists to assist communities in acquiring, developing and managing local land. Community Action Grants are for projects that aim to develop a community's assets, culture and heritage.

Quasi-government schemes

119. Most of the following bodies are funded by government departments but are run independently; for the potential applicant for grants, the main distinction is that rules and priorities may change slightly less frequently than for departmental grants, though this very much depends on the level of financial support the respective bodies receive; clearly if their 'subsidy' reduces then they will be forced to re-prioritise.

British Waterways (BW) [5] / Environment Agency (EA) [21] / Broads Authority (BA) [6]

120. Although none of these bodies is recognised as a funding agency it would be wrong not to mention them. They have statutory responsibilities in relation to certain waterways and they receive grant-in-aid to fulfil those obligations. On waterways where they do have an interest, they must inevitably be consulted at all stages of the project, and because of their expertise in waterway management, should at least be considered for providing feasibility studies, environmental assessments (see s.31-32) and the like.

121. BW is currently restricted by statute in its ability to put money into non-navigable waterways, though it has proved to be a very adept facilitator in many recent schemes and where they are able to assist in feasibility studies or providing staff time, this can go towards matching funding. They have been extremely successful in pulling in funding from the Landfill Tax Credit Scheme [31], and their development of the Waterways Trust [46] was seen as a means of facilitating restoration programmes and attracting third-party funding into the network. EA and BA have a general remit to promote recreational use of waterways and are consequently more able to offer financial support, but there are no specified guidelines and, as ever, it is a matter of talking to them and ascertaining what might be available.

Countryside Agency [13]

122. The Agency (formed out of the former Countryside Commission and Rural Development Commission, and funded by DEFRA [15]) offers grants to encourage other organisations and, occasionally, individuals to carry out work that supports its aims of ensuring that the English countryside is protected and can be used and enjoyed now and in the future. Grant aid is directed at projects that support the priorities in the Agency's corporate strategy, but it is also responsible for distributing the Rural Recovery Fund, a government initiative to alleviate the impact on the rural economy of the Foot and Mouth outbreak in 2001.

123. However it should be noted that at the present time there is only one formal grants scheme in operation by the Agency, Vital Villages, dealing with issues of local services and local transport, and this does not seem to offer much potential for waterway schemes. A booklet summarising the grants and payments schemes offered by the Countryside Agency is available from the Agency's head office, though inevitably the Agency itself has decentralised; most grants are dealt with at regional level and regional initiatives may well be a feature in future.

124. The Agency does manage a number of schemes for other organisations; for details of the Local Heritage Initiative sponsored by HLF see s.86, for the Aggregates Levy Sustainability Fund see s.101, and for the Market Towns Initiative see s.111.

Countryside Council for Wales (CCW) [14]

125. CCW grants are offered to encourage other organisations to adopt and implement those CCW policies, which are consistent with their own. The key objectives that may relate to

waterway projects are the protection and enhancement of landscape (including coastal landscape) and opportunities for the quiet enjoyment of the countryside and the coast. The 2002-2005 priorities include more accessible countryside. Grants of up to 50% and probably never exceeding about £30,000 seem to be the norm.

English Heritage [17]

126. Grants are available for restoration under the Historic Buildings, Monuments, Parks and Gardens scheme and public access is a necessity. Listed status is certainly not a guarantee of success, which suggests that unlisted buildings are very unlikely to be supported. The total amount available is limited and usually concentrated on a small number of very special (Grade 1 or 2*) buildings or structures at risk.

127. The Heritage Economic Regeneration Scheme is probably the only other current scheme which may be of use, channelled through local authorities and aimed at improving the appearance of designated conservation areas.

128. The entire grants programme is currently under review. For details of the Aggregates Levy Sustainability Fund, for which EH acts as a manager, see s.101.

English Partnerships (EP) [19]

129. Historically one of the largest agencies operating within the regeneration regime, EP remains a facilitator on such schemes but is generally no longer a conduit for funding streams, the bulk of which will now pass through the RDAs [39]. Its current remit includes sustainable regeneration, housing and brownfield redevelopment and it will remain influential in areas where such issues are predominant.

130. It does manage the National Coalfields Programme, which was launched in 1996 and is a ten-year project with a budget of almost £400 million, but again this is in partnership with the relevant RDAs and initial contact is best made through the latter for potential projects within the designated areas.

131. Phase 2 of the English Cities Fund will be opened in 2004, offering £250 million (60% of which comes from AMEC and Legal & General) for regenerating the fringes of town and city centres. It is likely that this scheme too will be routed through the RDAs, but interested groups should monitor the situation.

Rural Community Councils (RCC)

132. Historically, these county-based charities were the conduit for grants from Rural Action for the Environment (RAE) but since the dissolution of that scheme, they generally have little grant-making capacity themselves; where they do, it tends to be aimed at more people-based projects. They do however all offer advice on finding funding for rural projects of all descriptions. They are closely aligned with the Countryside Agency [13], one of the former RAE partners, and Action for Communities in Rural England (ACRE) [1] who provided the RAE secretariat facilities and whose website includes details of all 38 RCCs.

Scottish Natural Heritage (SNH) [40]

133. SNH grants cover areas such as footpath management, trails, signposting, country parks, feasibility studies for countryside projects and the like, under the objectives of improving the conservation of landscapes, promoting public enjoyment of the natural heritage and increasing awareness and understanding of the natural heritage. They suggest that any

interested applicants discuss projects with them before submitting applications. Grants would appear to be up to 50% of total project cost in most cases.

European Funding

134. Membership of the European Community has led to the availability of a wide range of structural funds for disadvantaged areas of member countries of which the UK is blessed with a number. The scale of the funds and the international dimension are such that the procedure for obtaining finance from this source is necessarily complex and will invariably involve the participation of local or regional government at a high level. The funds are there to regenerate and therefore waterway restoration on its own is rarely going to justify European money, except as part of a wider integrated strategy and where the economic and regeneration benefits of restoration can be proved.

135. Having said that, targeted areas are usually those that have suffered a decline in economic output through the decimation of previously dominant, and usually highly labour intensive, industries, and the waterways of the late Industrial Revolution are rarely far away from such areas.

136. There is no easy way to get money from Europe. Any scheme will have to be part of a much wider strategic initiative, and will invariably (if only because of the matching funding requirements – usually between 25% and 50%) involve one or more of the local authority, English Partnerships [19], RDA [39] and the regional Government Office [25]. Involvement with any or all of these (and particularly the RDA and Government Office) at an early stage is essential to see if your project can fit in to the overall strategy. The Department of Trade & Industry (DTI) website (www.dti.gov.uk/europe) is a useful first step for the uninitiated.

137. There are four structural funds of which only one, European Regional Development Fund (ERDF) is likely to be of interest. ERDF takes the bulk of the Structural Funds' resources and is geared towards productive investment, infrastructure and small business development. The funds are aimed at three Objective areas of which two are of relevance:

- Objective 1 - development of regions lagging behind; from 2000 to 2006 this comprises West Wales and the Valleys, Cornwall/Scilly Isles, South Yorkshire and Merseyside (with transitional help until 2005 for Northern Ireland and Scottish Highlands and Islands who were in the previous round),
- Objective 2 - converting regions facing structural difficulties caused by industrial decline (and including transitional help until 2005 for areas in the previous rounds of Objective 2 and 5b). Only specified electoral wards are eligible.

Tightly drawn maps show the geographically designated areas covered by each Objective. All affected regions in the UK were covered under Single Programming Documents (SPDs) submitted by the regional partnerships, approved by the European Commission (EC) [24], and managed by the regional Government Offices, which set out the objectives, priorities and broad strategy for the areas.

138. There are also Community Initiatives, which are funded from the main Structural Funds and targeted at specific areas that may be outside the main Objective areas. The main ones of interest running from 2000 to 2006 are:

- LEADER+ - an initiative for assisting rural communities in improving the quality of life and economic prosperity in their local area, managed by DEFRA [15],
- INTERREG III – strengthening social and economic interregional cohesion, managed by the Office of the Deputy Prime Minister (ODPM) [38],
- URBAN II - deprived areas, also managed by ODPM.

Again, contact should be made with the Government Office or RDA if it is felt that a waterway project could come within a wider scheme for such an area.

139. The EC can offer general advice and leaflets but the Government Office or RDA should be the first port of call if you have a project that may be eligible for any European funding. The NCVO [35] can also offer advice to voluntary groups on European funding though it is primarily concerned with the European Social Fund (ESF), which is unlikely to be of interest to waterway restoration projects. It should be pointed out that the existing programmes come to an end in 2006, and the emphasis may change thereafter.

VALUE ADDED TAX (VAT)

140. Finally a brief mention for VAT. While it does not sound like a 'funding regime' (much like the Inland Revenue's various tax concessions), it offers the potential for considerable savings on expenditure associated with major restoration works and is therefore tantamount to the same thing as third-party funding. It is beyond the scope of this chapter to go into detail here, and not all Societies will necessarily be directly commissioning project works to the extent which might make VAT registration an issue. However if your Society is likely to be spending substantial amounts of money with businesses who charge VAT on their products and services, then VAT registration may enable you to recover all or part of that extra 17.5%. It is a very complex area and specialist help is strongly advised. However HM Custom and Excise's website (http://www.hmce.gov.uk/forms/catalogue/catalogue.htm) has a useful series of guides and notices that may point you in the right direction.

CONCLUDING REMARKS

141. It was stated early on that this chapter could not hope to cover all possible sources of funding, and despite its length there are doubtless many unexplored avenues. The time between writing the chapter and its eventual publication will render sections partially or wholly redundant, and many addresses, telephone numbers and website addresses are unlikely to remain unaltered. Readers are asked to accept any shortcomings so resulting as an inevitable consequence of the passage of time.

142. Much of the material for this chapter has been drawn from the publications listed in s.16, and additionally from literature produced by the agencies listed, a previous *IWA Information Note No 7; Guidance Notes on Fund Raising for Restoration Groups* produced by Bill Thomson in 1995, and advice offered by a number of active Societies and colleagues, to whom I am particularly indebted. As always, however, any errors remain the responsibility of the author.

APPENDIX

1. Action with Communities in Rural England (ACRE), Somerford Court, Somerford Road, Cirencester GL7 1TW (01285 653477) (www.acre.org.uk)
2. Association of Fundraising Consultants, PO Box 9, Woodstock OX20 1ZJ (01582 762446) (www.afc.org.uk)
3. Awards for All, Ground Floor, St Nicholas Court, 25-27 Castle Gate, Nottingham NG1 7AR (0845 600 2040) (www.awardsforall.org.uk)
4. British Trust for Conservation Volunteers (BTCV), Conservation Centre, 163 Balby Road, Doncaster DN4 0RH (01302 572244) (www.btcv.org)
5. British Waterways, Willow Grange, Church Road, Watford WD17 4QA (01923 201120) (www.britishwaterways.co.uk)
6. Broads Authority, 18 Colegate, Norwich NR3 1BQ (01603 610734) (www.broads-authority.gov.uk)

7. Charities Aid Foundation, Kings Hill, West Malling ME19 4TA (01732 520000) (www.cafonline.org)
8. Charity Commission, Woodfield House, Tangier, Taunton TA1 4BL (0870 3330123) (www.charity-commission.gov.uk)
9. Civic Trust, 17 Carlton House Terrace, London SW1Y 5AW (020 7930 0914) (www.civictrust.org.uk)
10. Coalfields Regeneration Trust, PO Box 97, Rotherham S63 7WX (01709 760272 (www.coalfields-regen.org.uk)
11. Community Fund, St Vincent House, 16 Suffolk Street, London SW1Y 4NL (020 7747 5300. Application forms from 0845 791 9191) (www.community-fund.org.uk)
12. Community Service Volunteers, 237 Pentonville Road, London N11 9NJ (020 7278 6601) (www.csv.org.uk)
CSV Whitbread Action Earth, CSV Environment, St Peter's College, College Road, Saltley, Birmingham B8 3TE (0121 328 7455) (www.csvenvironment.org.uk/actionearth)
13. Countryside Agency, John Dower House, Crescent Place, Cheltenham GL50 3RA (01252 533311) (www.countryside.gov.uk)
14. Countryside Council for Wales, Maes-y-Ffynnon, Penrhosgarnedd, Bangor LL57 2DW (0845 130 6229) (www.ccw.gov.uk)
15. Department for Environment, Food and Rural Affairs (DEFRA), Nobel House, 17 Smith Square, London SW1P 3JR (0845 933 5577) (www.defra.gov.uk)
16. Directory of Social Change, 24 Stephenson Way, London NW1 2DP (020 7209 5151) (www.dsc.org.uk)
17. English Heritage, PO Box 569, Swindon SN2 2YP (0870 333 1181) (www.english-heritage.org.uk)
18. English Nature, Northminster House, Peterborough PE1 1UA (01733 455000) (www.english-nature.org.uk)
19. English Partnerships, 110 Buckingham Palace Road, London SW1W 9SA (020 7881 1600) (www.englishpartnerships.co.uk)
20. Entrust, Acre House, 2 Town Square, Sale M33 7WZ (0161 972 0044) (www.entrust.org.uk)
21. Environment Agency, Rio House, Waterside Drive, Aztec West, Almondbury, Bristol BS32 4UD (0845 933 3111) (www.environment-agency.gov.uk)
22. Environment Wales, Princes Trust Offices, 120 Broadway, Roath, Cardiff CF24 1NJ (029 2048 6969) (www.environment-wales.org)
23. Environmental Action Fund, Nobel House, 17 Smith Square, London SW1P 3JR (020 7082 8662) (www.defra.gov.uk/environment/eaf)
24. European Commission:
8 Storey's Gate, London SW1P 3AT (020 7973 1992) (www.cec.org.uk)
2 Caspian Point, Caspian Way, Cardiff CF1 9SG (029 2089 5020) (www.cec.org.uk/wales)
9 Alva Street, Edinburgh EH2 4PH (0131 225 2058) (www.cec.org.uk/scotland)
9/15 Bedford Street, Belfast BT2 7EG (028 9024 0708) (www.cec.org.uk/ni)
25. Government Offices for the Regions:
Gov't Office East, Eastbrook, Shaftesbury Road, Cambridge CB2 2DF (01223 372500) (www.go-east.gov.uk)
Gov't Office East Midlands, The Belgrave Centre, Stanley Place, Talbot Street, Nottingham NG1 5GG (0115 971 9971) (www.go-em.gov.uk)
Gov't Office London, Riverwalk House, 157/161 Millbank, London SW1P 4RR (020 7217 3328) (www.go-london.gov.uk)
Gov't Office North East, Welbar House, Gallowgate, Newcastle-upon-Tyne NE1 4TD (0191 201 3300) (www.go-ne.gov.uk)
Gov't Office North West, Sunley Tower, Piccadilly Plaza, Manchester M1 4BE (0161 952 4000) (www.go-nw.gov.uk)
Gov't Office South East, Bridge House, 1 Walnut Tree Close, Guildford GU1 4GA (01483 882255) (www.go-se.gov.uk)

Gov't Office South West, 2 Rivergate, Temple Quay, Bristol BS1 6ED (0117 900 1700) (www.gosw.gov.uk)
Gov't Office West Midlands, 77 Paradise Circus Queensway, Birmingham B1 2DT (0121 212 5050) (www.go-wm.gov.uk)
Gov't Office Yorkshire & Humberside, PO Box 213, City House, New Station Street, Leeds LS1 4US (0113 280 0600) (www.goyh.gov.uk)
National Assembly for Wales, Cardiff Bay, Cardiff CF99 1NA (029 2082 5111) (www.wales.gov.uk)
Northern Ireland Office - see separate entry [37]
Scottish Executive, St Andrews House, Regent Road, Edinburgh EH1 3TG (0131 556 8400) (www.scotland.gov.uk)
26. Groundwork UK, 85-87 Cornwall Street, Birmingham B3 3BY (0121 236 8565) (www.groundwork.org.uk)
27. Heritage Lottery Fund, 7 Holbein Place, London SW1W 8NR (0207 591 6000; Application Helpline - 0207 591 6042) (www.hlf.org.uk)
East of England: Kett House, Station Road, Cambridge CB1 2JT (01223 224870)
East Midlands: Chiltern House, St Nicholas Court, 25-27 Castle Gate, Nottingham NG1 7AR (0115 934 9050)
North East: St Nicholas Building, St Nicholas Street, Newcastle upon Tyne NE1 1RF (0191 255 7570)
North West: 9th Floor, 82 King Street, Manchester M2 4WQ (0161 831 0850)
Northern Ireland: 51-53 Adelaide Street, Belfast BT2 8FE (028 9031 0120)
28. Inland Revenue (IR Charities), St Johns House, Merton Road, Bootle L69 9BB
Charities Helpline – 0845 3020203; Gift Aid Helpline - 0151 472 6038;
Payroll Giving Helpline – 0151 472 6029 (www.inlandrevenue.gov.uk)
29. Inland Waterways Association, PO Box 114, Rickmansworth WD3 1ZY (01923 711 114). IWA Restoration Committee and wrg are also at this address. (www.waterways.org.uk)
30. Institute of Fundraising, Market Towers, 1 Nine Elms Lane, London SW8 5NQ (020 7627 3436) (www.institute-of-fundraising.org.uk)
31. Landfill Tax Credit Scheme, c/o HM Customs & Excise (National Advice Service 0845 010 9000) (www.ltcs.org.uk)
32. Local Heritage Initiative, John Dower House, Crescent Place, Cheltenham GL50 3RA (01252 521381) (www.lhi.org.uk)
33. Mersey Basin Campaign, 28th Floor, Sunley Tower, Piccadilly Plaza, Manchester M1 4BT (0161 242 8200) (www.merseybasin.org.uk)
34. National Association of Councils for Voluntary Service, 177 Arundel Street Sheffield S1 2NU (0114 278 6636) (www.nacvs.org.uk)
35. National Council for Voluntary Organisations, Regents Wharf, 8 All Saints Road, London, N1 9RL (020 7713 6161) (www.ncvo-vol.org.uk)
36. New Opportunities Fund, 1 Plough Place, London EC4A 1DE (020 7211 1800) (www.nof.org.uk)
37. Northern Ireland Office, Block B, Castle Buildings, Belfast BT4 3SG (028 9052 0700) (www.nio.gov.uk)
Dept of Agriculture and Rural Development, The Library, Room 615, Dundonald House, Upper Newtonards Road, Belfast BT4 3SB (028 9052 4999) (www.dardni.gov.uk)
Dept of Environment (Environment & Heritage Service) 5-33 Hill Street, Belfast BT1 2LA (028 9054 3034) (www.ehsni.gov.uk)
38. Office of the Deputy Prime Minister, Eland House, Bressenden Place, London SW1E 5DU (020 7944 4400) (www.odpm.gov.uk)
Living Spaces, PO Box 2014, Reading RG4 7XU (0845 600 3190) (www.living-spaces.org.uk)
39. Regional Development Agencies;
Advantage West Midlands (AWM), 3 Priestley Wharf, Holt Street, Aston Science Park, Birmingham B7 4BN (0121 380 3500) (www.advantagewm.co.uk)

East Midlands Development Agency (EMDA), Apex Court, City Link, Nottingham NG2 4LA (0115 988 8300) (www.emda.org.uk)
East of England Development Agency (EEDA), The Business Centre, Station Road, Histon, Cambridge CB4 9LQ (01223 713900) (www.eeda.org.uk)
London Development Agency, Devon House, 58-60 St Katherine's Way, London E1W 1JX (020 7680 2000) (www.lda.gov.uk)
North West Development Agency (NWDA), PO Box 37, Renaissance House, Centre Park, Warrington WA1 1XB (01925 400100) (www.nwda.co.uk)
One NorthEast, Stella House, Goldcrest Way, Newburn Riverside, Newcastle Upon Tyne NE15 8NY (0191 229 6200) (www.northeast.co.uk)
South East England Development Agency (SEEDA), Cross Lanes, Guildford GU1 1YA (01483 484200) (www.seeda.co.uk)
South West of England Regional Development Agency, Stirling House, Dix's Field, Exeter EX1 1QA (01392 214747) (www.southwestrda.org.uk)
Yorkshire Forward, Victoria House, Victoria Place, Leeds LS11 5AE (0113 394 9600) (www.yorkshire-forward.com)
40. Scottish National Heritage, 12 Hope Terrace, Edinburgh EH9 2AS (0131 447 4784) (www.snh.org.uk)
41. Shell Better Britain Campaign, King Edward House, 135a New Street, Birmingham B2 4QJ (0121 248 5900) (www.sbbc.co.uk)
42. Sport England, 3rd Floor, Victoria House, Bloomsbury Square, London WC1B 4SE (020 7273 1500) (www.sportengland.org)
43. Sports Council of Northern Ireland, House of Sport, Upper Malone Road, Belfast BT9 5LA (028 9038 1222) (www.sportni.net)
44. Sports Council for Wales, Sophia Gardens, Cardiff CF11 9SW (029 2030 0500) (www.sports-council-wales.co.uk)
45. Sportscotland, Caledonia House, South Gyle, Edinburgh EH12 9DQ (0131 317 7200) (www.sportscotland.org.uk)
46. The Waterways Trust (and Waterways Environmental Body), Llanthony Warehouse, Gloucester Docks, Gloucester GL1 2EJ (01452 318220) (www.thewaterwaystrust.co.uk)
The Waterways Trust Scotland, The Old Basin, Applecross Street, Glasgow G4 9SP (0141 354 7540)
47. Wessex Watermark, c/o Conservation Foundation, 1 Kensington Gore, London SW7 2AR (020 7591 3111) (www.wessexwater.co.uk/watermark)

Financial Management and Reporting

by
Simon Nuttall ACA

INTRODUCTION

1. Any waterway society needs to fill the positions of chairman, secretary and treasurer. Without those the organisation could not function. This chapter looks at:

    - a job description of a treasurer to help a fledgling committee recruit a post-holder,
    - the role and responsibilities of the treasurer, covering the key areas of accounting, financial stewardship and accounting, and
    - some practical guidance for a treasurer in post.

2. As well as being a theoretical chapter it also gives straightforward practical guidance on how to maintain basic financial records. For these purposes it is assumed that the reader has no experience of bookkeeping.

THE NEED FOR A TREASURER

3. The ability to restore a particular waterway inevitably comes down to money, and normally the lack of it. This lack of funds requires that the scarce resources available must be maximised. Additionally, those funds that are available will by nature be donations or grants of one description or another and the ultimate use of these will need to be reported both to the members and original providers.

4. As noted in the chapter covering the legal perspective, all societies, whatever their legal form, must provide financial statements to both their members and to the various governmental bodies to which it is required to report e.g. Inland Revenue, Companies House and the Charity Commission.

5. Finally, but by no means least, the organisation itself will require management information on which to base its expenditure and budgeting decisions.

PERSONAL QUALITIES AND KEY SKILLS

6. There is a popular misconception that a treasurer should be a qualified accountant, but, while this would clearly be an advantage, it is by no means essential. A large part of the treasurer's job is pure administration. The important skills are those of numeracy, attention to detail and patience! However, if a suitably experienced person is available to complete the task then this will be beneficial as not only will there be a much shorter learning curve, but it may be possible to reduce any third party audit costs at the end of the year.

7. It is important when recruiting a treasurer to ensure that the person undertaking the position is fully appraised of the duties involved. In order to assist with this the next section provides a job description, which could be passed to a prospective treasurer. As already stated, the position is vital to the smooth running of the society, so as a result of this it can be a difficult one to fill. This difficulty should not cloud the judgement of those making the appointment; the volunteer should be carefully briefed to ensure that he understands the duties involved. Those giving the briefing should take care to ensure that the individual concerned has the time to complete his tasks properly, without either taking unnecessary shortcuts or putting the society's financial interests at risk. As we will see later on, the majority of the compliance work carries stiff penalties for non-compliance. For example a company limited by guarantee must submit its financial statements to Companies House no later than 10 months from the end of its accounting period. Failure to do so will render it liable to a minimum fine of £100 and, if the breach continues, the directors may become personally liable. Finally, those recruiting a treasurer should ensure that the considerable

time and effort they put into the process, is not wasted by poor selection; leading to either an early resignation or chaos within the organisation.

JOB DESCRIPTION

8. The duties of the treasurer are in 3 parts:

- maintenance of records,
- compliance work (that is, dealing with those tasks needed to comply with the laws and regulations governing a society's financial affairs),
- presentation of information.

This chapter assumes that the society is a company limited by guarantee. This type of organisation has the highest level of statute governing it: compliance with these standards will amply cover other types of organisation.

Records and Administration

- Keep a full record of all the society's transactions.
- Receive and bank all receipts of the society (a Membership Secretary may bank subscriptions).
- Receive details of all requests for funds; carefully review the request, checking to source documentation. Having obtained the necessary authorisation, prepare the cheque and forward, together with supporting documentation to the required cheque signatories.
- Operate the society's Covenant Income Tax recovery and Gift Aid scheme.
- Oversee the operation of funds held by sub-committees and individual branches on a quarterly basis.
- Maintain records of gifts/donations for specific purposes (restricted funds) and ensure that the funds are 'ring fenced' from the society's general funds.

Compliance

- Ensure that the society complies with charity and companies legislation (where registered).
- If the company employs staff, ensure that the correct PAYE and National Insurance deductions are made and subsequently paid over to the Inland Revenue.
- Ensure that financial statements are prepared and, if necessary, audited within the necessary time-frame, presented to the members at the Annual General Meeting (AGM) and filed with the relevant authorities.
- Ensure that the organisation operates within the appropriate VAT and Corporation tax legislation (if necessary with professional assistance)
- Ensure that the Income Tax covenant scheme rules are obeyed and that the tax recovered is maximised.

Presentation of Information

- Provide timely and relevant information to the managing committee, including regular statements of affairs.

- Prepare budget and cash-flow forecasts where practicable.

- Keep and make available records of individual budget holder's budget and expenditure against that budget.

9. A volunteer considering the job of Treasurer should also enquire whether there will be assistance within the society from:

- a Membership Secretary (to keep track of annual subscriptions and any donations which come with them)

- a Covenants Secretary (to keep track of covenanted subscriptions and to reclaim tax on them and on Gift Aid)

- a fundraiser, either paid or unpaid, who can research into which grants may be applicable and who can deal with the variety of application forms that the grant-making bodies require – a very time-consuming task. The fundraiser will also check that the grant conditions are met, including the rendering of follow-up reports by the organisation and, if appropriate, by external auditors.

- an Appeals Secretary to organise, operate and maintain the records of an appeal to members, which may be a one-off for a specific purpose or be part of an open-ended appeal for, say, a Restoration Fund.

- a Sponsorship Secretary, or Group, where sponsorship is obtained and maintained. Sponsors are essential to a waterway society, need work to find them and follow-up work to keep them interested. No sponsor lasts forever - the skill is to keep them supportive as long as possible.

As a rough guide, a waterway society with an annual turnover of £100,000 (plus sponsorship of £50,000) takes its Treasurer, not an accountant by training, an average of an hour a day to administer, even with the help of all the five officials listed above. This includes compliance work, preparing for audit and dealing with the average of 350 Payment Vouchers and 250 Receipt Vouchers each year. It would take longer without a PC and suitable software, particularly at audit time.

10. Clearly it is not possible to prepare a job description that will be completely relevant for every situation but the above list is a useful starting point to assist volunteers considering the job.

BOOKKEEPPING

12. The Inland Revenue will require the same standard of records as the Companies Act.

13. The basic records which should be kept and that will meet the above standards are based upon the traditional cashbook, although nowadays this can be either paper or spreadsheet based. If the latter approach is adopted, the spreadsheet should be designed so that it is not too idiosyncratic. It should be based closely upon a traditional paper based book. In particular it should be able to be printed on A4 without having to join up separate pieces with sticky tape. However, if the treasurer has no experience of cashbooks then it is advisable to start with a manual book.

14. Cashbooks are sold with a referencing system, which refers to the number of receipts (credit) and payments (debit) columns, e.g. a 3/9 cashbook will have 3 income columns on the left-hand page with 9 payments expenditure columns on the right hand page. This will be in addition to a date and narrative column. When selecting a book it is important not to underestimate the number of columns required. It is much easier to add columns together than to separate a column. The best example of this is the sundries column. There is a great temptation to have 4 or 5 headings with a final catch-all sundries one at the end. The effect is that this becomes the most used column, which then has to be carefully re-analysed, when the end-of-year accounts are prepared.

15. If the society has significant cash transactions (and this is to be discouraged) then a separate cashbook will be required for these transactions. It is important that bank and cash transactions are not mixed. [It is possible to use the back of the cashbook to record cash entries].

16. Practical tips

- Cashbooks can be expensive to purchase, therefore a treasurer should consider using a proprietary loose-leaf system. This is slightly more expensive initially but should in the long term be cheaper.

- If using bound books then have 2, one for the 'odd' years 97,99,01 and one for the 'even' years 98,00,02. That way the treasurer can give the books to the auditor and not fall behind with regular bookkeeping.

- To save re-writing the column headings, the treasurer should write them on the first and last page and then cut the tops off the pages in between, (make sure you're certain about which headings you require before doing this).

- The column headings should not be changed during a financial period.

- Each new month should be put on a new page, unless there are less than ten transactions per month.

17. The key with book keeping is two-fold; the first is to ensure that the books are kept up to date and the second is to ensure that just enough work is done on a daily/weekly basis to ensure that year end work is kept to a minimum. When writing up a cashbook care should be taken to ensure that each entry is accompanied by sufficient detail to enable it to be identified at a later date. When the book is being completed each entry will seem as clear as day, but, 3, 6 or 18 months later the mists of time will have descended and it will be much more difficult to remember the detail.

18. Appendix A contains a basic sample of a cashbook for one month. Each entry should be given a folio or index number cross-referenced to the invoice; for payments the cheque number can be used. The date recorded should be the date on which the cheque is written. The total expenditure should obviously be entered into the total column with the expenditure then being transferred into the relevant column. It may of course be that a transaction has been raised covering a number of different headings, this is perfectly acceptable, but the allocation should be clearly identified on the supporting documentation.

19. It is advisable to enter cheques and receipts on a regular basis. This will both ensure that the cashbook is kept up to date and that the writing up of the book does not become too much of a task, which is then put off.

20. At the end of the month, or perhaps quarter if there really are very few transactions, the cashbook should be completed for the period. The first part of this process is to obtain the relevant bank statements. When discussing the provision of statements with the organisation's bank the treasurer should arrange for the statements to be drawn up to say the 3rd of the month so that the statement

arrives by the 10th and therefore the cash book can be kept up to date.

21. Once the statements have been received the entries should be checked to those in the cashbook. The best approach to this is a systematic one, marking off the payments first. Each entry on the bank statement should be marked with a tick, and then the corresponding entry in the cashbook alongside the entry in the total column should be ticked. When the payments have been marked and any standing orders/direct debits entered the receipts can be entered.

22. Having completed the entries for each month the book should then be cross added; that is each column added down and the total of the breakdown columns agreed to the TOTAL column. This may sound like very elementary advice, but simple techniques like this will ensure that accounts can be drawn up very quickly. If a professional firm is being paid for this work, then any time that can be saved for them will reduce your bill.

23. When the addition and cross-addition have been completed the receipts and payments should be reconciled to the bank account. This is the one most important step to be completed, for without this the book cannot be guaranteed to be complete. Once again if this is not balanced then year-end professional costs will be much higher than needed. The first step is to produce a summary of the cashbook for the month. A typical example will look like this:-

	£		£
Opening balance	1012.50		
Receipts	2345.78	Payments	1278.35
		Closing balance	2079.93
£	3358.28	£	3358.28

N.B. The receipts and payments amounts should agree to the respective total columns.

The closing balance will then need to be reconciled to the bank statement. All non-cleared (unticked) items should be recorded as follows: -

	£	£
Balance per cashbook		2079.93
Less uncleared cheques		
15.11.X8 Postage	100.00	
23.11.X8 Materials	230.92	
		330.92
		1749.01
Add uncleared receipts		1254.32
Balance per bank statement		3003.33

24. Before leaving the cashbook it is important to ensure that the supporting documentation is in place. In a ‘charitable’ organisation, whether registered with the Charity Commission or not, it is extremely important to maintain good documentary evidence to support all income and expenditure. This and other aspects of internal control will be covered in greater detail further on in this chapter.

PETTY CASH - THE IMPREST SYSTEM

25. Inevitably a treasurer will be required to hold a small cash balance. This will be used to reimburse members of the society for such things as postage and stationery. In order to avoid the need for a substantial balance an upper limit of say £20 should be placed on petty cash reimbursements.

26. The recognised way to operate a petty cash system is the "imprest system". Under this system an

initial float is set up, out of which all payments are made. Thus, at any time, the cash balance plus payments vouchers will equal the initial float. When the float needs replenishing, a cheque should be drawn for the value of payments made since the last "top-up" and thus restore the cash to the initial level.

27. As with the main bank account a petty cash book should be kept. The book is written up in a similar manner to that described in the previous section. The main difference being that the only receipt will be cash top-ups from the man bank account. At each month end an account should be drawn up as described in paragraph 23. Vouchers should be kept for all petty cash transactions and should be referred to the petty cash book.

OTHER RECORDS

28. In addition to the cashbook it is recommended that the following files be kept:-

- Paid expense invoices, cross-referenced to the relevant cheque/cash payment.
- Unpaid expense invoices.
- Income documentation, cross-referenced to the cashbook and paying in slips.
- Such computer printouts as are appropriate.

USE OF COMPUTERS

29. As the computer age progresses more and more people are purchasing home computers and particularly those people involved in voluntary activities such as waterway restoration. It is only natural that the question of using computers to record a society's transactions should be raised. Paragraph 13 discussed the use of a spreadsheet instead of a paper-based cashbook. This is a perfectly acceptable idea provided the user is reasonably familiar with spreadsheets.

30. In common with most activities, it is important to select the right tool for the job. When considering whether to use a computer the first item on the agenda is the number of transactions. If, there are fewer than say 30 per month then a paper based cash book would be recommended. For between 30 and 75 transactions then a spreadsheet would be suitable (unless there are a large number of restricted fund transactions, see paragraph 34).

31. It is unlikely that a new organisation will exceed 30 transactions per month and even less likely that it will exceed 75 transactions, although it should be pointed out that these numbers are for guidance only and should not be taken too literally. If, however there were more than 75 transactions then it would be worth considering the use of a proprietary software package. Given the expected life of this publication it would not be appropriate to recommend a particular product. The most important aspect of a purchase is to identify your precise needs before purchasing.

ADMINISTRATION

32. The largest part of a treasurer's role is taken up by routine administration. The following section gives some practical tips based on experience, the implementation of which will ensure that the time taken is kept to a minimum:

- Society officials should be encouraged to render their claim forms promptly. All claims should be properly completed on a form such as that in Appendix B. It should be made clear that a jumble of till receipts stapled to a piece of scrap paper is not acceptable. The act of

returning unsatisfactory claims will soon encourage proper completion of the forms.

- The treasurer should aim to be known to pay claim forms equally promptly. Members will not expect claims and other correspondence to be dealt with promptly unless the treasurer does the same.

- The treasurer should try to keep up to dale with the routine administration.

- All members frequently involved in correspondence should keep a detailed record of postage expenditure.

- Travel expenses are frequently a thorny issue. If all members were reimbursed for their travel expenses the society would simply fold. The general rule must therefore be that no expenses are paid. The only exceptions to this rule will be paid staff in the pursuit of their duties and members required to attend a meeting at some distance from the normal meeting place

RECORD RETENTION

33. The Inland Revenue requires that, in addition to the current financial period, 6 full years of records should be retained. While it is acknowledged that storage of records can become a problem it is recommended that all records be kept for at least 20 years. There are two reasons for this recommendation: the first is that in the event of legal proceedings they could potentially form part of the defence. In the case of damages, a case can be heard anything up to 20 years after the event. Secondly and on a more pleasant note, it is clearly hoped that the scheme will be a success and accordingly the early records may well become of interest at an historical level. Waterway restorers are always very pleased to be able to review the original Company records. Who knows who will want to look back at the restoration records in the next century - or the one after.

MANAGEMENT INFORMATION

34. The controlling committee of the society will require timely and relevant information on a regular basis. As was discussed earlier, the restoration of a waterway inevitably becomes an issue of finance. The directors, as members of the board or council of management, need good quality information to assist in the decision making process.

35. There are two different types of information required by the directors for decision making. This is because they have two distinct roles to play. The first is as overall custodians of the assets belonging to the organisation, the other is that of steering a course towards the group's overall aims.

36. The historical information presented to the meeting (both verbally and in writing) should give details of all transactions or a minimum of the key transactions, since the last meeting. This should start with the funds available at the end of the last meeting and, after detailing the transactions during the period conclude with the balance at the current date.

37. If there are what are now called 'restricted funds', i.e. amounts provided for specific purposes, then these should clearly be differentiated from the normal funds. The transactions on this account will need to be shown separately.

38. Having a large number of 'restricted funds' can cause additional record keeping problems for a treasurer. This may occur because a number of specific donations have been received or that there are a large number of enabled fund-holding committees within the organisation e.g. geographical branches, fundraising or machinery maintenance committees. If this is the case, then separate fund records will need to be kept, the total available funds should be divided into the individual

accounts with each transaction recorded on its own record sheets. If there are any more than say 4 funds, then such an approach should be adopted.

39. This approach means that instead of just the restricted accounts having specific funds records, the general account will require a separate record. The total funds available will then be reconciled to the individual accounts.

40. Aside from the historical information, a treasurer should if necessary provide cash-flow forecasts and budget reports. The organisation should ensure that it only spends the funds that are at its disposal. A budget report will give monthly or quarterly comparisons of income and expenditure compared to budget.

BUDGETING

41. The operation of a budget system is regarded as best practice. Two or three months before the start of the financial year a budget should be prepared. This budget is the society's plan for the forthcoming year and will include virtually all key activities; this is because most parts of the society's plans will need money. The budget therefore plays a key part in the society's strategic planning and should be handled with care: the inclusion or exclusion of projects can have an effect on the motivation of volunteers. The preparation of the budget should not be delegated to the treasurer alone, ideally a sub-committee should produce the document which is then considered by the board.

EMPLOYING STAFF

42. This a common issue for waterway organisations, with the staff likely to be either project officers or construction industry professionals. Before looking at the practicalities of employing staff, e.g. deduction of PAYE and National Insurance, it is important to consider whether an individual is employed or self-employed. This is a topic that is often raised, as many people are aware that it is cheaper to 'employ' a self-employed individual as opposed to an employed one. This disparity is due to Employers National Insurance, which for employees earning over £210 per week (1998/99 rates) is 10%. For an employee with a gross wage of £250 per week the organisation would be required to pay £25 National Insurance per week to the Inland Revenue, together with the income lax deducted from the gross wages.

43. The question of whether an employee is self employed or not has occupied the minds of professionals, Inland Revenue Officials and Judges for many years. Many thousands of words have been written on the subject, hence it is only possible to give brief guidance; the Inland Revenue produce a useful leaflet, which is available from all tax enquiry centres - 1R56, beyond which professional advice should be sought.

44. In order to decide whether an employee is self-employed the following factors need to be considered.

For employment

- There is control by another over the manner in which the work is performed.
- The person performing the work is restricted from delegating his work.
- The person performing the work does not bear the losses or keep the profits.
- The person performing the work does not provide tools.

- The person is required to work set regular and defined hours.
- Holiday and sick pay are paid.

For self-employment

- There is no control over the manner in which the work is done.
- The work may be delegated.
- The person bears all losses and keeps all profits.
- The person provides all tools.
- There are no fixed hours.
- No holiday or sick pay is paid.

An individual will be deemed to be self-employed if on balance the majority of answers point to self-employment. Rarely will the result be so clear-cut that all of the answers point one way or the other.

45. If there is any doubt then the Inland Revenue enquiry centre may be able to offer guidance. However, a professional's opinion should be sought.

46. Assuming that the employee is to be taxed as an employed individual, the society will need to register as an employer with the local Inspector of Taxes Office unless the employee earns below the National Insurance lower earnings limit - currently £64. If this is the case and the employment is the individual's only job, then it is not necessary to open a PAYE scheme. In order to protect the interests of the society a form P46 should be obtained from the Inland Revenue enquiry centre and completed by the company and employee.

47. The operation of a PAYE scheme can be complex and initially daunting. The pack supplied by the Inland Revenue is approximately 1.5 inches thick. This includes a basic guide to operating a PAYE scheme which is reasonably well written and can be supplemented by specific guidance from the enquiry centre.

48. It is to be stressed that, if there is any difficulty with the operation of the scheme, professional help should be sought. Many accountancy practices operate a PAYE bureau and will work on fixed fee basis. Incorrect operation can render the society liable to substantial penalties. For example incorrect submission of the end of year summary carries a penalty of up to £3000. Against this an accountant may charge £150 p.a. plus VAT to operate a one person PAYE scheme.

CORPORATION TAX

49. An organisation's chargeablity to corporation tax is discussed in the 'Waterway Societies and their Constitutions - the Legal Perceptive' chapter.

VAT

50. VAT may have very wide implications for any waterway body especially when it becomes involved in major expenditure on restoration. The field of VAT legislation has become particularly complicated and the discussion of VAT treatments for large projects is beyond the scope of this

chapter. However, in line with the aim of providing sound initial advice the following paragraphs give preliminary guidance.

51. An entity is required to register for VAT if its annual taxable turnover exceeds the current registration limit (available from HM Customs and Excise). Broadly speaking taxable turnover will be the provision of goods or services, such as the operation of a tea-room or trip boat. Therefore the receipt of donations and gifts are outside this definition. Sponsorship can be a difficult area as the term is applied to many different transactions. If the sponsorship merely involves the attaching of a name to an item such as a lock or bridge then this is more in the nature of a donation with an acknowledgement of thanks. But, if the sponsoring organisation receives services or goods as a result of the sponsorship then this may be a taxable receipt. As always, if in doubt seek professional advice.

52. The most important aspect of VAT compliance is to monitor taxable turnover (on a 12 month rolling basis) and ensure that registration is completed as soon as it is required (there are strict penalties for late registration) and, in any case, within 30 days of reaching the registration limit.

53. HM Customs and Excise provide several useful publications:
The VAT Guide (Notice 700)
Charities (Notice 701/1/95)

These are available free of charge from the local VAT offices.

54. A frequently asked question is whether the organisation should suffer VAT on its purchases. Unfortunately the basic answer is yes: unless the society is registered for VAT it cannot recover any VAT charged to it. A small minority of transaction may be zero-rated, typically these would involve either listed buildings or the disabled. The local VAT office will provide further details.

INTERNAL CONTROLS

55. The board of directors is responsible to the members for the funds of the company. Clearly the board does not have the time to approve each and every transaction; it must therefore establish a framework for the financial operations of the company i.e. internal controls.

56. A key part of these controls is the provision of information to the board; this has already been covered under the management information section.

57. The authorisation of orders and the making of payments must be adequately controlled. It is important that all costs incurred must be correctly authorised. In order to avoid unnecessary requests to the board a 'de minimis' level should be set for routine expenditure such as office costs and plant repair. These transactions will of course be reported to the board within the management information.

58. If the organisation operates a budget system then the board should consider appointing budget holders, who will be able to use the budgeted funds without referring the matter to the board. Unless such a scheme is in operation all orders should be approved by the managing committee and minuted as such.

59. The payment of cheques should be authorised by 2 directors: any more than this will cause administrative difficulties. **UNDER NO CIRCUMSTANCES SHOULD BLANK CHEQUES BE SIGNED.** This may seem like obvious advice, but this practice is rife within the charitable sector and is not acceptable under any circumstances. It is often tempting to sign say 5 blank cheques for the treasurer to use between meetings; this completely defeats the objective.

60. If the time taken to obtain a second signature causes problems them it is possible to agree with a

bank that the treasurer alone can sign cheques up to a pre-set value - say £100. Whilst not ideal this is preferable to the signing of blank cheques. Any cheques signed in this manner should be reported to the next board meeting.

61. The maintenance of adequate documentation has already been discussed; this documentation should be given to the cheque signatory prior to signature. **CHEQUES SHOULD NOT BE SIGNED WITHOUT THE APPROPRIATE DOCUMENTARY SUPPORT.**

62. The use of cash should be discouraged as this gives an additional control risk. Any cash that is received should be banked intact and not used for expenditure. Wherever possible the provider of the cash should provide a document to accompany the cash, which can then be filed by the treasurer.

63. If the society receives a large volume of donations by post, consideration should be given to making arrangements for all post to be opened by two people. This will reduce the exposure to risk.

BRANCHES/SUB COMMITTEES

64. There may be occasions where geographical branches or sub committees are allowed to operate independent bank accounts. In these circumstances the same controls should be applied as to the central organisation. The only amendment to the system should be that, in addition to providing management information to its own controlling committee, regular information should be passed to the overall board of directors. This would normally be on a quarterly basis and should be strictly adhered to.

ANNUAL ACCOUNTS

65. Having dealt with the appointment of a treasurer and the first year of duties, the final part of this chapter looks at the year-end procedures. Included within this section is practical guidance on how to reduce professional costs, consideration on whether an audit is required and the deadlines to be adhered to.

66. The preparation of annual accounts is perhaps the most daunting aspect of the treasurer's role. It should be said that unless the treasurer has some form of formal accountancy training or experience then professional help will be required for all but the smallest of societies. If the group has a turnover of less than say £15,000(this again is only a guide) and is an unincorporated organisation then a simple income and expenditure statement reconciling opening and closing bank balances will suffice. But, if the society is a company limited by guarantee and or a registered charity then accounts must be drawn up using the normal accounting conventions. Additionally for companies limited by guarantee the accounts need to be presented in Companies Act format and in accordance with SORP 2 - Charities (Statement of recommended practice). Hence the suggestion that professional help is virtually unavoidable.

67. If professional assistance is required then the treasurer can do a lot to ensure that the time taken by the accountant, and hence the bill is kept to a minimum.

- The records should be clear and neat with all supporting documentation logically and accurately filed.

- The monthly cashbook pages should be correctly completed, cross added and balanced to the bank account.

- An annual summary should be prepared giving the total income and expenditure divided

between the cash book headings. A summary bank account should be prepared, showing the opening bank balance, income and expenditure and balance at the year-end.

- A breakdown of important cashbook headings should be produced, suitable headings being sundries - both receipts and payments, repairs and restoration costs and capital expenditure.

- A list of outstanding income and unpaid invoices should be prepared, supported by the appropriate documentation.

- A list of all equipment held.

- A list of all directors who served in the year, giving dates of appointment and resignation.

68. Clear and succinct information will greatly assist the professional accountant.

69. When appointing an accountant it is important to obtain a quote in advance and in order to do this all the relevant information will need to be presented. Failure to do so may lead to additional charges. It is well worth asking for a discount on the normal rate as many accountants undertake a small number of assignments on an honorary basis.

AUDIT - IS ONE REQUIRED?

70. There is a common misconception when it comes to the word "audit". Many people believe that the checking of an income and expenditure account by an unqualified but respectable volunteer is an audit. This is not the case. An audit is defined as "an independent examination and expression of opinion" and must be carried out by a registered auditor. [Under current regulations an auditor must be a member of either the Institute of Chartered Accountants or the Institute of Certified Accountants and authorised by them to carry out audits.]. The difference between this and the former example is that the examination by an auditor will look at all aspects of the financial statements, including the internal controls and prospects for the company. The auditor is certifying that not only has the information held in the cashbook been carried into the accounts correctly but also that the information in the cashbook is complete i.e. there are no omissions. However, there are many circumstances where an examination as opposed to an audit will be perfectly acceptable.

71. A formal audit is only required in the following circumstances:

- Where a company limited by guarantee has an annual turnover in excess of £350,000.

- Where a company limited by guarantee has assets exceeding £1,400,000.

- Where a registered charity has a turnover in excess of £250,000.

- Where the constitution of a trust or unincorporated group requires an audit.

- Where an audit is requested by more than 10% of the members of a company limited by guarantee.

- Where the directors voluntarily opt for an audit.

72. If an audit is required there are certain formalities that must be adhered to with regard to the appointment of an auditor. In the first year of operation the board may appoint the auditor. But, thereafter the appointment will need to be made by the AGM, unless the auditor resigns during his term of office - in which case the board may once again appoint.

73. Unless a formal audit is required there is only one occasion where an examination is needed, that is for registered charities with a turnover between £90,000 and £250,000.

74. However, there is a common expectation within members of an organisation that the accounts should be checked by someone other than the treasurer. Accordingly an examiner should be appointed to check that the accounts are in accordance with the records presented to him. The examiner should if possible be professionally qualified but this is not a formal requirement.

75. The examiner should be asked to plan his work in order to be able to sign a report as follows:

"I have examined the accounts of XYZ canal restoration society for the year ended 31st March 19X8 and confirm them, to be accordance with the books and records supplied to me. I have not carried out an audit."

The final sentence is important to ensure that the reader has a full understanding of the work carried out.

PRESENTATION OF THE ACCOUNTS

76. Having either completed the accounts or arranged for a professional to do so they should first of all be presented to the board for approval. Following this they may need to be returned to the auditors for their final signature.

77. The accounts should be sent to all members (free of charge) at least three clear weeks before they are presented to the AGM.

78. The final part of the treasurer's role for the year is to present the accounts to the members at the AGM. The treasurer should provide a brief five-minute synopsis of the year's transactions and invite questions from the floor. Following this the accounts should be formally approved by vote.

79. Providing more detailed information than contained in the formats laid down by statute may assist the presentation to the members of a company limited by guarantee.

DEADLINES

80. Unincorporated bodies do not have any legal deadlines but again best practice should be seen as following that set down by statute for companies limited by guarantee: that is, the accounts must be approved by the members and filed with Companies House within 10 months of the year-end. One salutary warning, if accounts are prepared to the 28th February you must file by 28th December not 31st. Similarly if your accounts are drawn up to 30lh September you will need to file by 30th July not the 31st.

81. Late submission will incur a time-based penalty of a minimum of £100.

82. Companies have the option of filing a much reduced set of accounts called abbreviated accounts; if a society would like to reduce the amount of information available to the public then its accountant will be able to prepare these. This will incur additional costs, hence many groups choose to file the lull accounts, as they take the view that the accounts are available to all via their society magazine.

APPENDIX A CASHBOOK EXAMPLE

Receipts

Date	Narrative	Ref.	Total £	Subscriptions £	Donations £	Other £
06.01.X8	Membership	230	15.00	15.00		
16.01.X8	Donation - M. Smith	231	25.00		25.00	
17.01.X8	Talk fee - given by P. Duncan	232	20.00			20.00
23.01.X8	Income from canal day	233	145.90			145.90
			205.90	15.00	25.00	165.90
			(1)	(2)	(3)	(4)

N.B. (1) = (2) + (3) + (4)

Payments

Date	Narrative	Ref.	Total £	Office £	Restoration £	Other £
08.01.X8	Postage	162	23.20	23.20		
12.01.X8	GM Stores - 3 Tons aggregate	163	125.00		125.00	
19.01.X8	Office World - printer ribbon	164	5.29	5.29		
25.01.X8	Companies House - annual return fee	165	15.00			15.00
			168.49	28.49	125.00	15.00
			(1)	(2)	(3)	(4)

N.B. (1) = (2) + (3) + (4)

APPENDIX B EXPENSES CLAIM FORM

THE LOAMSHIRE & MIDDLESHIRE TRUST LTD

To: The Hon Treasurer

From:

Please repay me for the following expenses incurred and/or items bought on behalf of the Trust.

Date of item	Budget	Details/Description	Amount

TOTAL £

Cheque No …… issued on (date) ……

Received £ …… Signature …….

L&MCT Form PDI

Use and Benefits of Waterways for Recreation

by
Tony Harrison
CEng, MICE

INTRODUCTION

1. The purpose of this chapter is to provide information about the use and benefits of waterways which may be used to justify restorations or to assist funding agencies considering applications for funding of restoration projects.

2. Great Britain has a wide variety of inland waterways, i.e. navigable rivers, canals and drainage channels. These have been recognised for over 25 years as having an important recreational role. There are about 8640 km (5370 miles) of waterway [1] which are, or were, navigable by craft of at least 7 ft (2.13 m) beam. The 2790 km (1734 miles) system of navigable waterways managed by British Waterways (BW) - mainly canals but including a few rivers - is now seen as primarily a recreational resource, although the system also has drainage and water supply functions and still carries some commercial craft. A further 860 km (535 miles) of navigable rivers managed by the Environment Agency (EA) and 160 km (100 miles) by the Broads Authority are used for leisure purposes although all such rivers have major water supply and land drainage functions. There are also 885 km (550 miles) of inland navigable waterways managed by other bodies, 100 km (62 miles) with no controlling authority and 600 km (373 miles) of estuaries linked to navigable waterways. Finally, there are a further 3250 km (2021 miles) of waterways which are derelict or only partly navigable, of which 430 km (265 miles) are managed by BW and 165 km (104 miles) by EA. A large proportion are canals and rivers where navigation has been abandoned in the past 100 years; many of these are now the subject of proposals to restore navigation and a number of restoration projects are well advanced.

BACKGROUND

3. The operation and maintenance of the BW system cost £100.8 M in 1997/8 [2]. This was balanced by income of £8.2 M from leisure boating, £0.7 M from angling, £3.4 M from sales of water, £19.6 M from property, £0.9 M from freight tolls, £17.6 M from other sources and by government grants of £50.4 M. The navigation function of EA [3], which excludes expenditure on fisheries, recreation and conservation, cost £6.8 M in 1995/6 out of a total operational expenditure of £603.4 M; income from navigation was £2.7 M. The navigation function for the Broads Authority [4], which excludes expenditure on fisheries, recreation and conservation, cost £1.2 M; income from navigation was £1.2 M.

4. It is clear from these figures that income from navigation can only finance a proportion of the cost of operating a waterway for recreation. To justify the retention of a navigable waterway or the restoration of a derelict one, other benefits must be identified and quantified; these may not provide income to the navigation authority but can persuade bodies such as central government, local authorities and funding agencies to provide funds for restoration or improvement and to support the operational costs. For the BW system the Board states [5] that "it is unable to levy direct charges for protecting the waterway environment and heritage or to charge most of those who use the waterway network for informal leisure, as a drainage facility, or whose property is protected from flooding. The cost of maintaining the network for these purposes has been estimated at £60 M a year." The major beneficiaries are the millions of "informal visitors": people who visit waterways to walk, to watch the boating activity, to see the wildlife and to enjoy the waterways scene.

USE OF WATERWAYS

5. The Countryside Commission, BW and five other agencies commissioned the UK Day Visits Survey in 1994 [6]. Information was collected about leisure day visits from home and holiday bases; this included the main activities undertaken, the expenditure incurred and the general destination, i.e. town, countryside or coast. These destination categories also included the subsets of wood/forest and canal/river for which details of leisure and non-leisure day visits were also collected.

6. An analysis of the data relating to inland waterways has been undertaken by the Market Research Unit of BW [7]. The overall estimate for the annual number of visits for all purposes by adults and children is 408 million. Of these 159 million were to BW waterways, 29 million to EA rivers, 77 million to estuaries, 45 million to other navigable inland waterways and 98 million to non-navigable waters. For non-estuary waterways this represents an average of 49,000 visits per km per year; the average for BW waterways is 57,000 visits/km/year. The visits to BW's navigable waterways have been estimated in Reference 7 and are shown in the following table to which the average visit rate has been added for each activity:

Visits to BW navigable waterways

Activity	Visits (millions/year)	Visit rate (number/km/year)
Holiday hire boating	0.2	72
Private powered boating	0.9	322
Restaurant/trip boats	1.5	536
Canoeing/unpowered boating	1.5	536
Fishing	2.6	930
Cycling	7.2	2570
Other informal leisure trips	67.5	24100
Non-leisure trips	78.0	27900
TOTAL	159.0	57000

7. The above figures are dominated by the informal visitors who make up 91.5% of all visits to these waterways and 83.3% of leisure visits. However the distribution of use on a visitor-hour basis would give somewhat less emphasis to informal users: the average informal visit lasts a few hours whereas all other activities are of longer duration; a holiday hire cruise, for example, typically lasts a week. Excluding non-leisure trips, the overall average visit duration was 3.75 hours.

8. The Survey shows that visits to waterways occur all year with the highest numbers in early summer: May, June, July and August receive 16%, 11%, 13% and 7% respectively of annual visits. These figures are of course dominated by the informal visitors. The distribution of boating use is more concentrated in summer: based on a sample from 35 locks throughout the country in 1992 [8] the same months see, respectively, 12%, 11%, 16% and 18% of annual boat movements.

9. Informal visitors tend to be concentrated at "honey pot" sites whereas other types of users tend to be more evenly spread. The visit rate to a particular waterway will vary according to its attractiveness and the population within its catchment. For example, the Kennet & Avon Canal (139 km in length) has well-developed trip boat businesses with 550 visits/km/year in 1990, higher than the average BW figure of 460 visits/km/year in 1989 [9]. However other boating use was lower than average because the canal was not fully restored at the time of the survey [10].

10. Some evidence of the catchment area for informal visits to waterways is given by the distances visitors travelled from home in the 1994 Day Visits Survey. The average round trip distance travelled was 32 km (20) miles, with 50% travelling less than about 10 km (6 miles) and 9% travelling more than 64 km (40 miles). A BW survey in 1995 [11] gave an average distance of 30 km (19 miles) with 41% travelling less than 10 km (6 miles) and 9% travelling more than 64 km (40 miles). Both surveys give similar results although based on slightly different samples: the former excludes non-leisure visitors and visits by holidaymakers but includes leisure day visitors, boaters and anglers; the latter excludes boaters and anglers but includes leisure day visitors, non-

leisure visitors and holidaymakers. Both results emphasize that waterways are largely local recreational resources for informal visitors - as are most public parks. BW point out [12] that about half the country's population lives within 8 km (5 miles) of a BW waterway.

11. The analysis in Reference 7 shows that 53% of all visits from home to waterways are made by car, demonstrating the need to provide car parking facilities, especially at honey pots. 34% travelled by foot and 6% by bicycle, again indicating the local nature of the majority of visits.

12. The numbers of boats licensed in 1997/98 by BW on its canals and rivers, and in 1997 by the Broads Authority on the Broads, and EA on the non-tidal Thames are shown in the following table. Short-term licenses are excluded so the figures are a good measure of the numbers based on the various waterways. On the Thames, exempted craft and crown vessels are also excluded.

	BW Waterways		**Broads**		**Thames**	
Length of waterways (km)	2790		160		202	
Boat type	**Nos**	**No/km**	**Nos**	**No/km**	**Nos**	**No/km**
Powered: private	20402	7.31	7527	47.0	9640	47.7
Powered: hire	1514	0.54	1914	12.0	498	2.5
Business	622	0.22	16	0.1	54	0.3
Unpowered: private & hire	512	0.18	3715	23.2	5290	26.2
TOTAL	23050	8.26	13172	82.4	15482	76.6

The table shows that there are over nine times more boats per kilometre on the Thames than there are on the waterways of British Waterways which are generally narrower and have water resource limitations.

13. It is particularly difficult to measure the rate of growth in recreational use of waterways because of the dominant effect of weather on outdoor activities and the margin of error in the survey data. Comparing the 1984 and 1989 figures in a survey commissioned by British Waterways [9] gives an approximate annual growth rate of 2.5%, but it should be remembered that this was a period of strong economic growth when personal incomes were rising relatively rapidly. Considering other related activities, those walking a distance of 2 miles or more at least once a month increased by 1.2%/year between 1977 and 1986 and have continued to grow by 1.3%/year since then [13]. A consultant's forecast [14] is that sightseeing visits will increase by 2.1%/year and walking trips by 1.3%/year in the decade from 1990. It may be concluded that informal visits to waterways are probably increasing at 1.5% to 2% year.

14. Since the early 80s the number of licenses for privately owned powered boats on BW waterways has increased by about 2%/year [15], although better enforcement accounts for some of the growth. Licenses for private boats on the Broads have increased at about the same rate. Licenses on the Thames and EA Anglian region rivers also increased but more recently licence fees have been increased by significantly more than inflation and the number of licensed private boats has fallen to levels below those in the early 80s. Numbers of licensed hire boats have remained about constant on BW waterways and the Anglian rivers but have reduced on the Broads and the Thames. Taking account of the greater use made of hire boats it is likely that there has been an overall growth of boat movements on BW waterways of about 1%/year but none on the other waterways.

15. The rate of growth of informal use of waterways and boating use of BW waterways is greater than the rate of restoration of waterways [16] which in Great Britain averages 13.5 km (8.4 miles) per year, a growth rate of 0.25% per year.

16. An interesting comparison can be made between the informal use of waterways and the use made of urban and country parks. According to evidence reviewed in 1982 [17], the annual number of visits to parks totals 94 million, but a survey commissioned by the Audit Commission in 1992 suggests that the figure is around 350 million. However the expenditure on parks [18] (after subtracting income from users) in 1998/99 was £561 M, many times BW's net expenditure on its waterways. For English heritage the net expenditure (government grant) is £42.1 M on its historic properties which receive 11.5 M per visit year [19[. It is possible that the figures may not be entirely comparable because of different methods of estimating visitor numbers; nevertheless the differences between the net costs per visit for waterways, parks and historic properties are substantial, as shown in the following table:

	Waterways	**Parks**	**Properties**
Net expenditure	£68M	£561M	£42.1M
Visits	159M	350M	11.M
Cost/visit	£0.43	£1.60	£3.66

VALUING THE BENEFITS

17. It is very difficult to place an exact value on the benefit received from an activity for which a charge cannot be made, such as an informal waterway visit, since it is usually not possible to quantify the effects of all the relevant factors. Nevertheless it is worth trying to assess the non-financial benefits of a project because it helps to clarify the issues and to assist in making choices: for example between funding one waterway restoration project and another, or between a restoration project and a non-waterway project.

18. There are a number of different ways of valuing benefits. The system currently favoured in academic circles for estimating the social benefits to the individual is the Contingent Valuation method [20]: this consists of asking people, usually by means of a questionnaire or survey, what they would be willing to pay to receive a particular benefit. A survey of informal visits undertaken by British Waterways in 1989 [21] at sixteen waterway sites gave average values at 1996 prices ranging from 25p at Gas St and Tardebigge (Worcester & Birmingham Canal) to 97p at Anderton (Trent & Mersey Canal), with a mean figure for all sites of 48p. Recent research [21] also shows that the value of a visitor's experience can be increased by over 60% if there is an opportunity to see boats. The Contingent Valuation method has also been used [23] to estimate the "existence" value of inland waterways as about £145 M. This is the cultural, heritage or environmental value that people place on them even though they do not intend to use them, reflecting a wish that they be conserved to pass on to future generations.

19. In seeking funds from a funding agency, applicants need to understand the criteria of the funding agency and to demonstrate that the project will produce benefits which meet them. Different agencies emphasize different benefits to the community within the economic, social and environmental mix. In the economic area, for regeneration projects, the most significant benefits generally relate to the employment created but other measures may also be important such as

private sector investment levered by the agency's expenditure, area of derelict land restored, number of training opportunities created etc.

20. Early studies [24, 25] of community benefits estimated the additional income from visitors that was retained in the local economy when a restoration project was implemented and attempted to show that there was a net benefit after the capital and future operating costs were taken into account [26]. The method is expensive if properly undertaken and is open to some doubt; in particular the proportion of additional income retained is difficult to estimate, the method takes no account of the value of informal visits to local people who do not increase their expenditure as a result, and much of the calculated expenditure may in fact be "displaced expenditure", i.e. money that would be spent elsewhere if the newly restored waterway did not exist.

21. In deriving the benefits of a waterway restoration or development project BW economists currently apply a displacement factor of 35% to the estimated expenditure by informal visitors. This assumes that only 35% of the visitors make the visit solely because of the existence of the waterway and therefore bring additional income to the local area; alternatively, 35% of local residents visit the waterway rather than going elsewhere, thus retaining expenditure locally. For boating it is generally assumed that boat running costs and boaters general expenditure accrue to the local area but capital or depreciation costs do not.

22. The following table gives average expenditures for boating, angling and informal visitors at 1996 prices. The figures for powered boating are based on those given in the Kennet & Avon study, Reference 10: those for angling and informal visitors are based on a 1995 BW survey [27]. Those in unpowered boats are thought to spend the same as informal visitors; their equipment costs are ignored. This information is regularly updated by BW's annual programme of visitor surveys.

Expenditure by waterway visitors

Private powered boats	£3100/boat/year
Hire boats based on waterway	£23000/boat/year
Trip boats	£27500/boat/year
Anglers	£3.09/visit
Informal visitors	£3.53/visit

23. An extension of the expenditure assessment method measures the impact - in terms of local jobs and income created - that restoration of a waterway may have on businesses in the local area directly dependent on the waterway, such as marinas. The method [28] also takes account of indirect impacts such as the local expenditure of the waterway-related businesses and the expenditure by informal visitors, for example in local shops and pubs. An additional "multiplier" factor takes account of "knock-on" effects such as the spending in local shops by employees of the waterway-related businesses. The method also considers the potential, in terms of jobs and income, of property developments within the waterway corridor with no direct relationship to the waterway. These developments may to some extent be dependent on the general environmental improvement achieved by the restoration. It remains a matter of judgment as to the proportion of these development outputs which can be counted as benefits in justifying the restoration project.

24. Most restoration schemes also generate a number of social benefits for the local community which can be difficult to quantify. These may include: a focus for special events and festivals; recreational opportunities and links with other recreational resources in the area; integration of recreation with the natural environment; development of enhanced recreational facilities for the disabled; and opportunities for: education initiatives, health and fitness schemes, community involvement in restoration and subsequent management, employment training, and walking and cycling, off road, to and from work.

CONCLUSIONS

25. Estimates of future recreational use and benefits can be helpful in convincing residents, local organisations and funding agencies of the value of restoring a waterway. In order to obtain an accurate estimate professional consultants specialising in recreational economics should be employed to undertake the necessary surveys and analysis. This may also include specific boating demand analyses, based on the catchment population and use of a boat traffic model, to estimate the distribution of boats and their movements. This work is often undertaken for a project in conjunction with an engineering feasibility study and an assessment of environmental impacts and mitigation measures. However a preliminary, approximate estimate can be made using the information in this chapter.

26. The table in paragraph 6 gives the average visit rates to canals for different activities. These can be applied to the length of waterway under consideration with estimated adjustments to take account of partial or full restoration, the nature of the waterway and its relative attractiveness, the presence or otherwise of boats, the size of the local population and so on. The number of boats likely to be based on the restored waterway should be estimated from the average boats per km figures in paragraph 12 taking account of the above factors and other aspects such as the width of the waterway, availability of water supplies for lockage, popularity of other waterways that it will connect to and the availability of mooring and marina sites.

27. Estimates of annual income from boats and anglers can be based on the average figures for BW waterways, based on paragraphs 2 and 3, of £2940/km and £251/km respectively; the recreational value of informal visits can be estimated from the figures in paragraph 18. Estimates of expenditure by informal visitors, anglers and unpowered boaters can be obtained from the average figures given in paragraph 22 multiplied by the number of estimated visits and, in the case of informal visitors, by the displacement factor of 0.35. Estimates of expenditure by those on private and hire boats can be obtained from the average figures in paragraph 22 multiplied by the estimated number of boats based on the waterway. In all these cases adjustments need to be made to the average expenditure values to take account of local conditions.

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Waterside Properties

By

David Robert Fisher BSc, FRICS
Property & Development manager, British Waterways

with assistance and contributions from

Ian Valder MCIM, Commercial Director and
Glen Miller BSc, MSc, Research Manager,
British Waterways

FOREWORD

1. The development of Britain's inland waterways in the late 18th Century provided the catalyst for the industrial revolution. Factories and warehouses were developed to serve industry, and ale-houses, hotels and cottages provided to serve the needs of the carriers and canal workers. The transfer of freight to railways did not only bring about a decline in the waterways, but also a decline in districts surrounding them. New industrial needs and a decline in manufacturing accelerated the process. However, with 50% of the population living within five miles, waterways have taken on a new role - as a tourism and recreation resource, and as a focus for both urban and rural regeneration. In both waterway restoration and property regeneration, British Waterways (BW) has acquired an enviable depth of experience.

2. Established in 1963, British Waterways' now own and manage 2,012 miles, representing over 50% of the UK's inland waterways. The property associated with these waterways is extremely diverse: a historic legacy (over 2,000 listed structures and ancient monuments) [1] passing through some of the most beautiful countryside in Britain. Conversely, large tracts of unused, often derelict land adjoins many inner urban canals. Today BW's investment property is valued at £177 million and provides annual revenue to the waterways of £21.6 million [2].

3. There is a paucity of academic research into waterside property values and this paper will largely reflect the British Waterways experience. No doubt the experience acquired and the lessons learned can be applied to navigations owned by others.

INTRODUCTION

4. The Author was invited to write definitively upon the influence of a waterway on the value of land and property in its vicinity and the effect on property of restoration of a waterway. In addressing this subject it is equally necessary to turn the questions on their head and look at the effect on the waterway and its value as a consequence of the uses to which adjoining property is put. Property regeneration goes hand-in-glove with restoration, and whilst a synergy exists they have different objectives. Regeneration means to breathe new life into, to change and to invigorate. It is associated with the providing of a new economic life. Restoration suggests more that the objectives are to reconstruct, recover and repair, to bring back and re-establish. In other words a return to a past life which historically proved commercially uneconomic in later years. In reality, a balance has to be drawn between the two. If future sustainability is to be achieved a waterway owner has to secure new and growing income from the building blocks provided by waterway restoration. Long term revenue and sustainability are essential to funding the asset.

5. With this in mind it is important to be aware that, whilst property development and regeneration can take place profitably without being beside water, it is difficult to conceive how a restored waterway can be sustained without development. How could it be cared for into the future without capturing some of the adjoining property values? Income from property assets accounts for over 40% of British Waterways' self-generated income (excluding Government Grant and third party funding). Without this BW would have £22 million a year less to apply to the maintenance and improvements of its waterways. It is critical to a waterway owner that the potential for property value enhancement is identified ahead of a restoration scheme so that some of that value can be secured. There is no doubt that, in the past decade in particular, there has been a waterway renaissance borne from a need and desire to balance both the objectives of regeneration and restoration, a balance which gives returns to both the waterway and property owners. "There is a good deal of commentary about 'authenticity' or the lack of it along today's waterfront that is idle romanticism. These critics are not dealing with the reality of abandoned factories and power plants, rotted piers and decaying wharves and weedy wastelands that constitute many waterfronts. The trick is to retain as much of the original character as possible".[3]

6. Property and its active management has to be part of any business. Waterways are not unusual in this sense. This is important to the future sustainability of the British inland waterways network. Railways, around the world, use their major stations as retailing and profit opportunities to subsidise the trains running on the track and airports use duty free shopping areas to keep down the costs of aircraft landing fees. Similarly British Waterways needs to use

its property to generate income, to become the focal point and catalyst for the regeneration of urban towns and other centres, and to create and add value to the waterways.

7. If waterway restoration is to be the catalyst for development or vice versa then the owner must give equal attention to both a conservation plan and a property investment and development strategy: the former to protect value, the latter to capture it. The waterway owner must look at the whole corridor of ownership and not simply his own property. The strategy will identify the actions and investment required of the waterway owner whether it is developing buildings, buying new development sites, forming joint ventures with adjoining owners, influencing the content of structure/local plans with local authorities, or providing well thought out responses to other parties planning applications. In turn, new neighbours can potentially turn into new users and customers of the waterways and, in so doing, more directly improve the waterway revenues as boaters, anglers etc. How this is created depends upon many varied factors and there is no stereotype answer.

8. To explain this in more detail it will be necessary to examine how different types of property uses interact with the waterway and how new property uses and new values are introduced to the waterways. This can be referenced by way of practical examples and, to a limited extent, some academic research. This gives substance to new property expressions BW has introduced to the market vocabulary in recent years, namely - "Water: The Added Value"[4] and "The Ripple Effect".[5] The reader will note from the case examples that in some instances waterway restoration is the promoter of property development; in other instances development brings about improvements to waterways. Increasingly, as the importance of one to the other is recognised, waterway restoration, regeneration and development operate side-by-side.

THE WATER AND DEVELOPMENT VALUE INTERPLAY

9. "Because of the range of geography, population and types of waterfront projects there can be no single set of criteria for success. Each project will be individual with their own characteristics of public access to waters edge, the civic contribution, the scale, material and style, be it bold, modern or an adoptive reuse of a former warehouse".[3] Property value enhancement is often put forward as the reason why developments are more likely to take place if there is a water component, rather than elsewhere. It is often said that properties located alongside waterways can command higher values than equivalent properties elsewhere. Waterside locations are promoted to developers and occupiers as the place to live, work and play. The reasons why are best addressed under these broad headings, albeit it is now becoming very common to see waterside developments mix these uses to provide a continuous clock of life and vitality that produces a highly marketable product adding yet further value. Unused waterways can provide both a hostile and unsafe environment shunned by local people. "The key to reducing fear of crime is the presence of other people, lots of other people, doing many different things".[6] "That the inherent magic of water will draw people together at certain places or for special events is proof that the growing sense of isolation in our cities does not have to be".[3]

A place to live

10. A study [7] carried out by Newcastle University into residential property values in 1992 confirmed that it is, in fact, the case that water adds value.

11. Two environmental economics techniques were employed in the Newcastle study:

- a contingent valuation approach (CVM), based on the expert judgment of a random sample of members of the Royal Institution of Chartered Surveyors throughout the country on the premium associated with residential properties adjacent to and close to waterways, and

- a hedonic house price model (HPM), based on actual sales of (1) waterside properties, (2) other houses near waterways, and (3) houses at some distance from waterways. The model sampled properties in the London and West Midlands areas.

12. The main conclusions from the study were:

- Both models found a positive premium associated with the proximity of residential properties to canals and navigable rivers. This premium was not confined to houses which were actually waterside, but extended to properties at some distance away from the water.

- The expert judgment CVM approach found that the average premium associated with properties with a water frontage, compared with those at some distance from the canal or river was 19%. The premium of other properties in a waterside development compared with those at some distance away from the water was 8%.

- The premiums derived through the HPM method were considerably lower than those obtained using CVM. For the London area, the location of a property on the waterside added a premium of about 3% to house prices compared with those away from waterways. The equivalent figure for the West Midlands sample was 5%. In the London sample, properties close to, but not beside, the waterway commanded a premium of about 1.5%.

- At first glance the results from the two methods appear to differ widely. However, it is important to note that the methods actually value different types of property. The CVM results relate to new property developments in a pristine waterway environment, with superior water quality. These are the types of location that would be favoured by developers. The HPM approach relates to the existing waterside property stock and includes properties in older, more run-down areas, where environmental and water quality would be below that which would be acceptable for a modern development.

13. The Newcastle study does not address development cash flow. A frequently used developer expression is "Cash is King". This underlines the importance of cash flow and can be more important than any 'premium' value. The profitability of a residential development can be severely reduced as a consequence of a low sales rate against development costs expended. A developer wants a scheme that will sell fast and ideally off plan even before he has incurred development costs. British Waterways has experienced this itself on joint venture developments at Woughton, Milton Keynes, at Limehouse Docks, London and at Fazeley near Tamworth. Moreover, all the housebuilders with whom BW come in contact stress the importance of finding an attractive waterside location for accelerated rates of sale. Speaking as the Chairman of St George plc about the Limehouse development, Trevor Osborne, FRICS, FRSA, makes the point that "canalsides make for faster sales, at better prices. We sell the view. Regeneration is about confidence. The first project that is done in a run down city area is much more likely to succeed if against a water area. To build here has a marvellous ripple effect. If you look up here, it is all sold, and we haven't finished building it yet." [5] However, we should not delude ourselves that water in itself is the creator of value. The other ingredients of good design, location, market, economy etc. are just as important. In 1994 the Piccadilly Village development at Manchester not only funded a rebuilding of a length of the adjoining waterway but also secured the homes a shortlisted nomination in the MIPIM Awards in praise of excellence for Euro-class buildings.

A place to work

14. No research similar to the Newcastle report exists for the workplace. However, other developments do benefit from a canal location. The Ecotec study [8] found that canalside sites provided a focus and integrating factor for regeneration schemes, although how this actually operates varies from case to case. Features of such schemes include:

- the creation of a good quality water environment to support development opportunities, e.g. Gas Street Basin and Aston Science Park, Birmingham.

- the development of pedestrian movement corridors within sites, e.g.: Merry Hill, Dudley; Brindley Place, Birmingham; Victoria Quays, Sheffield.

- the linking of separate sites along a development corridor, using the improved canal environment as an integrating factor, e.g. Blackburn.

Talking about the mixed leisure, office and retail development at Gloucester Docks on behalf of the developer, Crest Nicholson, Carolyn Puddicombe, their Development Executive says: "whether they are visitors or workers they all come to the water at some point in the day."

15. Ecotec suggests that there is little evidence to show that other commercial property values (e.g. offices, manufacturing industry) are generally enhanced by a waterside location. However, there is evidence that waterside commercial properties are more marketable than those that are not waterside. The take-up of space in such developments tends to be faster. Therefore, the value of the property can be realised quicker than would be the case if it wasn't waterside. As stated previously: 'Cash is King'. Further evidence of this is the increasing and deliberately planned integration of the waterways into the business and shopping centres of towns. Camden Lock proved to be the catalyst and remains at the heart of a retailing boom in Camden High Street, London. It has proven one of the Capital's major tourist attractions, but would not perhaps be appealing to boaters and other waterway users who are looking to get away from the crowded high street. An extension of Walsall town centre has introduced major retail development to the edge of Town Wharf and the restoration of the Walsall Arm. The redevelopment of Victoria Quays, Sheffield has led not only to the restoration of the Tinsley Canal and its reclassification as a Cruising waterway, but it is also playing a major part in the redevelopment of the town centre. The city fathers' strategy [9] calls for the total integration of the canal into the traditional retail and market area.

A place to play

16. Restoring waterways increases their use which in turn creates demand for moorings, marinas, boatyards, tea rooms, visitor centres, camping and caravanning sites etc. Calculation of visitor numbers, off-site tourism effects and total development potential and values is an essential ingredient to successful funding bids.

17. When asked to report [10] upon the canal improvement proposals for the Kennet & Avon Coopers & Lybrand stated : "We have assessed the economic impact of the Canal in terms of its:

    a. direct benefits ..... for example, the income and employment associated with the operation of marinas and boat operators or the direct spend of visitors to the canal corridor attractions such as local tourism and heritage features;

    b. indirect benefits, i.e. income and employment from companies which supply those companies which are directly dependent on the canal or from visitors to the canal spending money locally in pubs, restaurants and shops;

    c. development benefits, arising out of, for example, the construction of new hotels, marinas or industrial floorspace;

    d. multiplier effects i.e.: the knock-on effects of local sourcing of goods and services to canal related business."

18. Only circumstantial evidence exists to show that the values of leisure-related developments, such as pubs/restaurants, are enhanced by a good quality canal environment. This is reflected in the willingness of developers to capitalise on the features of the canal e.g. Wharf Inn (Eanam Wharf) and Hemms Inn (Bottom Lock) at Blackburn; Stanley Ferry, Wakefield and Cuckoo Wharf, Worksop.

19. Brewers and pub operators say they would expect up to 25% greater turnover from a pub or restaurant located on the waterside, than that from a similar operation without a vibrant water frontage. A Bradford University study[11] carried out on the Kennet and Avon Canal is relevant to such operations when viewed as visitor destinations. In placing a value on visitors' enjoyment the study found that the proportion of visitor enjoyment associated with seeing boats pass through the Caen Hill locks was of the order of 40%. From the perspective of the

waterway visitor/onlooker, the presence of boats transforms them from being mere water channels into waterways with movement, interest and colour.

20. BW's experiences show that, as with other types of leisure use, water adds value. The £40m Royal Armouries development would not have relocated from the Tower of London to Clarence Dock, Leeds had it not been for the major amount of water space. Chris O'Boyle, Chief Executive of Royal Armouries International says: "We have come to Leeds because we have a wonderful setting, bounded by water.[5] Water events are critical to success." Waterways are visitor destination places and leisure operators can capitalise upon this by putting their own operations in close proximity e.g.: National Waterways Museum, the Package Museum and Antiques Centre at Gloucester Docks; Sea World, National Indoor Arena and International Convention Centre, Hyatt Hotel at Birmingham. Owners of leisure outlets frequently specify sites with waterside location and historic buildings.

Property returns to the waterway

21. Having considered what water can do for developments, what can the waterway get back in return? Apart from the obvious higher rentals and sales values flowing to the waterway property owner there can be many indirect benefits. Developers and occupiers, as we have seen, want to sell and buy into good locations. To do this they look for a quality of environment. If it will create or add profit they are prepared to invest in resurfaced and new footpaths, new or repaired waterway walls, toilet facilities, landscaping (hard and soft), restored canalside artefacts, and historic buildings, new lay-bys and mooring rings/bollards, e.g. Granary Wharf, Leeds. The developer may even include a substantial marina within his development. This could provide private moorings for residents, e.g. Pennylands at Milton Keynes; a commercial marina business e.g.: Woughton, Milton Keynes and Hayes, Southall; a mix of both as at Trowbridge, Wiltshire, or a visitor attraction as at the Stoke Garden Festival Site. The occupier at Pennylands pays BW a rent for the moorings. In the case of all the other mentioned marinas the developer did not want to retain ownership or the long-term management and gave them to British Waterways at no cost, complete with support buildings. Having leased them out they now provide their waterways with long-term revenue as well as the facilities themselves.

22. A developer may be fortunate enough to find historic docks and restore them as at Piccadilly Village, Manchester. In all such cases the developer sets these as a cost against his development for the added value achieved. Footpath, cycle and road links to surrounding areas are improved, hitherto inaccessible canal frontages opened up, e.g. Bellway proposals for waterfront at Thorne, South Yorkshire, and tourist attractions, shops and other facilities provided. Even industrial property owners will contribute to waterway improvements if this gives them a more prestigious address, and a safer and more pleasant working environment with relaxing lunch time sit-out areas and walks.

23. If a waterway owner is to capitalise upon the success of a waterway restoration project it is essential that he has a property strategy and identifies as part of the project appraisal those lands and buildings that will appreciate in value. Having identified them and measured the potential this can be put to advantage in different ways. The ability of the project to trigger economic, social, environmental, heritage, educational and training gains can all be important factors in attracting financial grant assistance to the project. Moreover, the restored waterway will need long-term revenue to enable the restoration to be sustained. Income potential of the water space is not enough. The owners of the navigation should secure a direct involvement in the property development opportunities arising either as a sole owner or partner with others. In this way new capital and revenue receipts can be generated. The revenue generated from the properties owned by British Waterways at Gloucester Docks contribute to the maintenance of the Gloucester and Sharpness Canal. By a joint venture with the private sector at Milton Keynes and following an initial equity investment BW secured a greenfield site which was developed for a 100 berth marina and chandlery, pub restaurant and hotel, 50,000 sq.ft. of offices and a large number of apartments. The development provided British Waterways not only with a very acceptable capital return upon its investment but also secured the ownership of the marina at no cost and a rental from the operator. Again, these receipts go towards the upkeep of the Grand Union Canal.

24. It is absolutely vital that a property strategy is based on a full corridor study undertaken at the outset by those with appropriate architectural and professional knowledge, e.g. BW's Waterway Environment Services at Hillmorton. A strategy document that embraces the whole corridor of opportunity, not only property development issues, but also environmental, heritage, ecological, hydrological, recreational, tourism, conservation and local planning issues, will prove a valuable document in more ways than one. It is essential to the optimisation of waterway value. It will be used to persuade planning authorities to adopt the waterway requirements within their Local Plan. Planning conditions attached to subsequent planning consents will then enhance the use of the waterway rather than detract from it, e.g. landscaping and footpaths, design guidelines. In the same way the waterway owner can use the document to approach adjoining owners and developers to persuade them to revise their development plans or improve their existing use for the benefit of themselves and the waterway.

25. Individual perceptions of the value of development will vary and on occasion lead to a nimby attitude which may or may not be justified. Take the Trowbridge marina and housing development for example. Many may have preferred it to remain a greenfield site, albeit it was occupied by a battery chicken farm. However, growing boat numbers demanded new and modern serviced moorings. The whole of the Kennet & Avon Canal route is planning sensitive but the local authority at Trowbridge wanted a tourist/visitor attraction. The developer was prepared to finance and build a marina at this location and gift it to BW. It is all a question of balance and measured judgement. An overall strategy is essential to the achievement of balance.

Waterway restoration as a catalyst for regeneration and development

26. The new role for inland waterways over the past 10 years or so has led to an increasing recognition of their importance in the property world. There are a number of reasons for this:

- The leisure and tourism use of waterways forms an important base for developing other activities around it, particularly retail, catering and office developments. Waterways provide a lively and interesting background for these developments and a ready market for the retail and catering sectors;

- The linear nature of waterways means they provide a natural linking feature between individual developments, helping integrate schemes;

- The attractiveness of the waterway environment means that developments become more marketable and property values are often enhanced in waterside schemes;

- Waterways provide green corridors, linking urban areas with the countryside and bringing nature into the heart of towns and cities;

- The buildings surrounding waterways, together with canal structures such as locks and bridges, provide historic links with our industrial past. Buildings and structures often need to be conserved in many developments.

27. From the point of view of local authorities, and funding agencies, waterside regeneration schemes are intended to deliver a number of outputs, including:

- Economic development, generating income within the local economy and providing employment;

- Clearing up derelict land and bringing it back into economic use;

- Enhancing the environment and conserving heritage;

- Providing tourism and recreation opportunities and acting as a focus for community development.

28. Implementation of projects has been helped by the availability of grants to support the funding provided by local authorities, other public agencies (such as British Waterways) and the private sector. Schemes have been funded through grants from UK government sources (such as the Single Regeneration Budget), the European Structural Funds (particularly the European Regional Development Fund - ERDF) and the National Lottery. Access to some of these funds, especially ERDF, is restricted to specific geographic areas. However, there is no doubt that the availability of such funding has enabled many redevelopment schemes to be implemented faster than would otherwise have been the case.

29. The development process can take place in a number of ways but these can broadly be covered under three types:

- Single locational opportunities
- Comprehensive and incremental - the ripple effect
- A Corridor of Opportunity

These can be illustrated by way of examples.

Single Locational Opportunities

30. Large or small, rural or urban, the intention is to secure value from the development of a single site or building.

Gloucester Docks

31. One of the most difficult sites with which BW has had to deal: 25 listed structures, covering 14 hectares of redundant docks in a conservation area where up until about ten years ago public access was prevented by dock police. Just to keep the buildings wind and weatherproof alone was in excess of £5 million. Working with the City Council a strategy was devised to turn the water space and dockland into a major tourist attraction. BW conveyed to the Council for £1 the North Warehouse with an obligation upon them to spend some £3 million in renovating it for the Council Offices. BW expended £3.5 million on converting Llanthony Warehouse into the National Waterways Museum Trust and regional offices.

32. Having 'book-ended' the site a development agreement was drawn with Pearce Developments. Further warehouses were converted into Council Offices and a shopping mall by Pearce and the Council. Other warehouses have subsequently been restored and occupied with new businesses. With about 50% of the docks now developed BW no longer has a liability but a location which attracts one million visits per annum, a waiting list for moorings and an income of £500,000 pa contributing both to the sustainability of the dock and the waterway. This was a development led project that brought about a re-use of the previously redundant dock areas.

Victoria Quays, Sheffield

33. As recently as 1993 Sheffield Basin, at the end of the Remainder Tinsley Canal, was a liability amounting to several million pounds for BW. But that year saw the signing of a development agreement with Sheffield Development Corporation. The Agreement was based upon a strategy that would take advantage of the waterside location to turn this not only into a new business centre but in particular a visitor destination. Tens of million of pounds of private investment and grants have been expended in restoring listed buildings for new office, residential and leisure uses. The canal, docks and swing bridges have been renewed. New office buildings, a public house, four-star Hotel and a multi-storey car park have been provided. Three boating businesses have been established at Victoria Quays, Tinsley and Rotherham. BW's investment was just over £1 million in refurbishing the listed Straddle Warehouse for which it now has a newly classified cruising waterway, a destination point with modern moorings and facilities and an annual income of over £200,000. Without this seedcorn investment by BW and encouraging others nothing would have happened. A commitment to restore the waterway to Cruising status was a pre-requisite for investor

confidence and preceded the property development. Regeneration of Sheffield Basin and restoration of the canal went hand-in-hand.

Startops Tea Rooms, Tring Reservoirs

34. A derelict cottage producing no income a couple of years ago gave BW the opportunity to invest £140,000 in conversion to a shop, tea rooms and general provisioner. With attractive canalside cruising and walks, extensive rambling and angling around the reservoirs, this waterside location attracted tens of thousands of visitors every year and created the value and opportunity for this investment. Our visitors now have a managed car park and a place to refresh. BW now has an annual income of over £17,000 to go towards the waterway upkeep.

Comprehensive and Incremental

35. Some developments that start as a single location subsequently ripple out to become part of comprehensive regeneration e.g.: Gloucester, Sheffield. Some start life with the intention of growing and rippling down the waterway and into the hinterlands. Using the canal as a thread, pearls are continuously added to it until a fine and valuable necklace has been created. This is a relatively new phenomenon on the inland waterways and the point at which growth stops has yet to be determined.

36. This approach will lead to renewal of waterways over extensive lengths as investors demand a quality environment. It can also lead to management agreements with investors and local authorities whereby service charges are made towards the upkeep of the waterway e.g.: Sheffield Basin, or towpaths are maintained by others, as in Birmingham.

37. It is important, however, that the development drive does not become a victim of its own success by subsuming all that was inherently good in and around the waterway environment. Long lasting success and value will be more easily achieved if planned and progressed within "the context of strategical local development control".[12]

38. Good examples of this approach are found:

Birmingham Waterfront: In the mid to late 1980's the Gas Street Basin development was the first mixed-use development on the central waterside converting a run down timber wharf into homes, offices, a Beefeater bar, hotel, night club and the James Brindley pub. This was followed by the International Conference Centre and National Indoor Arena development, the Hyatt Hotel and then the mixed-use development at Brindley Place/Symphony Court. Growth continues to ripple out along the central canal network and through the City. By 1996 the scheme had attracted over £300 million of investment. The initial stimulus to this development was £2.3 million of canal improvement works to provide an integrated footpath system, clean attractive water space and safe colourful moorings, and trip and restaurant boats for the many visitors. Of the development Councillor Stewart Lacey, Chair Planning Committee, Birmingham City Council says: "The Council decided to locate the International Convention Centre next to the canals to give a lift to the whole area and to use the canal to spread the benefit out to the surrounding derelict areas. This has worked exactly as planned and it is now a place to which people want to come". [5]

39. **Leeds Waterfront**: a strategy developed between the Development Corporation, the City Council and BW has opened up what had, until the late 1980's, been a property graveyard. As with Birmingham, a strategy was determined to use the waterspace as a place to live, work and play and this has, in less than ten years, led to hundreds of millions of pounds of private and public investment giving Leeds a new leisure and business centre. Waterside locations now attract premium rates and the mix of uses now extending into the City Centre is helping Leeds become a 24-hour City with many bars, restaurants, hotels, homes and offices in close proximity to the water. A key ingredient to this success was connecting the development opportunities with new waterside footpaths and roads and integrating these to the established City Centre. Ease of access is now guaranteed to destination points such as the Royal Armouries and Granary Wharf and new moorings at Clarence Dock and Granary Wharf.

40. This continues to be very much a development led scenario with individual developments providing the funds for waterway improvements e.g.: The Royal Armouries development

funded the restoration of Clarence Dock and the Granary Wharf development provided new waterside walks and moorings. Having been directly involved in the development of Leeds Waterfront, Ian J Todd, Director, Allen Todd Architecture Ltd has said: "From an architects point of view people like being by the river. The first group of houses put on the market sold over a week-end. Mix is important - the riverside makes it happen. Asda, Yorkshire Water, leading accountants and solicitors have all taken space. The cleaning up of the waterway enabled people to see it in a different light".[5] Talking of the same development Sir John Harvey Jones remarked : "it has the best hotel and the best restaurant. It's just a miracle, there is no question that waterside locations offer enormous potential for regeneration."[5]

Corridors of Opportunity

41. The action plan [13] for the full restoration of the Forth & Clyde and Union Canals - the Millennium Link, describes the potential value as a "corridor of opportunity - for tourism, business sites, enterprise, regeneration and employment." This is different from the ripple approach in that it is not primarily development led. Instead it seeks to demonstrate the value of a full waterway restoration package - only one aspect of which is the added value to property, new development opportunities and the potential to 'ripple'. Increasingly other schemes such as this are being brought forward, e.g. Huddersfield Canal and Kennet & Avon Canal. These three restoration schemes are expected to attract over £600M of private sector investment, create over 6000 jobs during construction, and create or safeguard over 27,000 permanent jobs.

42. Impacts of large-scale restoration projects are more difficult to assess, since none of the larger schemes has been implemented yet and it is too early to assess the impact of recently completed smaller schemes such as the Ripon or Bridgewater and Taunton Canals. However, management and economic consultants have estimated that substantial benefits are likely to arise from property developments on restored waterways.

Negative Impact of property on canal users

43. The relationship between canals and surrounding property is two-way. The existence of the canal can enhance property values and the marketability of development schemes, through the attractiveness of the waterside environment and the creation of a leisure and tourism market for surrounding developments. Equally certain types of land use have a potential negative impact on visitors to canals. Again research [14] by Newcastle University provides evidence of this.

44. The value people place on visits to canals is likely to be diminished by negative features of the waterway environment, such as pollution, dumped rubbish, potential conflicts with other users and the presence of visually unattractive features, such as run-down derelict areas and poor design. The Newcastle University research investigated one of these effects: how the value of recreation may be diminished by the presence of service structures - high level electricity pylons, low level telegraph posts and wires, and pipe bridges.

45. The study looked at how different negative attributes of the canal environment affect the enjoyment of visitors. Of the attributes included, enjoyment was adversely affected to the greatest extent by the presence of litter, rubbish and graffiti. Power lines and other overhead cables had a moderately adverse effect, while the adverse effect of pipe bridges was somewhat lower (on a par with poor path surfaces). The factor causing the least detriment to enjoyment (perhaps surprisingly) was interaction with other waterway users.

46. The mean willingness to pay for a 1% reduction in the number of service crossings, expressed in terms of an annual additional payment on utility bills was:

Electricity pylons	£0.09
Other cable crossings (low level)	£0.10
Pipe bridges	£0.04

47. These figures can be grossed up using annual visitor figures for BW waterways. This gives the following estimate for the total value of reducing service crossings by 1% throughout Great Britain:

Electricity pylons	£290,601
Other cable crossings (low level)	£308,287
Pipe bridges	£147,587

48. It was estimated that the value of removing service crossings entirely is:

Electricity pylons	£14.5 million
Other cable crossings (low level)	£15.4 million
Pipe bridges	£ 7.4 million

49. This shows that canal users experience great disbenefit from the presence of service structures. Other negative features of the canal environment, such as the effects of industrial dereliction, would have similar impacts. Either people do not visit these particular canalside areas or, if they do, they express a willingness to pay to improve the area. A conclusion to be drawn from this study is that utility services should be planned for replacement underground, rather than overhead, such that waterway restoration and the waterside can maximise their recreational and property values.

50. The design of buildings and structures is an important consideration in enhancing peoples' enjoyment of the waterside environment. As part of the service structure research mentioned above, a contingent valuation technique was used to look at peoples' willingness to pay to preserve and maintain traditional road bridges across canals. (Contingent valuation is an environmental economics technique, which involves asking people how much they would be willing to pay for specified environmental goods and services).

51. The research [15]was based on a case study whereby there was a hypothetical proposal to replace an existing traditional canal bridge with a more modern design. It was found that most people interviewed preferred the traditional bridge design as opposed to the modern replacement. 58% of people said they would be willing to pay (through additional Council Tax) for the retention of the present bridge. When aggregated over the number of visitors during the year to canal, the minimum total annual willingness-to-pay to retain the existing bridge would be between £5,100 and £11,600 per year, dependent upon the assumptions made.

52. This is a minimum figure, since it is based on a valuation made by visitors to the canal. Non-users may also value the existence of the bridge, which would be additional to this. Assuming a life of 20 years for the replacement bridge, the capital sums involved would be of the order of £100,000 to £230,000.

53. One could conclude from the study that there is conflict between recreational and property values since the developer will suffer increased costs leading to reduced profitability. However, if the developer is required to conserve the environment with improved design he may find the public's willingness to pay will lead to a higher sales return.

54. Whilst this academic research has confined itself to utilities' apparatus and bridges the nature of land use and development can in itself add to or detract from the value of the waterside to both those using the water and land. Surveyors are often quoted as saying the root of all value is location, location, location! Magical as it is, water is only one ingredient and in itself does not guarantee success. Unplanned, uncontrolled, poorly designed, ill-conceived, unmanaged and unmarketable property development will not attract the added value and, moreover, may be a poor substitute for greenfields or an historic urban environment. A trip down many canals will reveal numerous examples of development that have failed to identify the opportunity of a planned integration of water and land: houses turning their backs with fences and walls obstructing view and encouraging an unmanaged waterside; offices and industry shunning the opportunity to provide an attractive landscape to the waterway and making no attempt to provide waterside recreational space for their employees and visitors.

55. It is an absolute essential to the value of both water and land that the use of the water and the waterside spaces is considered from the very start of the development process and integrated

throughout. They are going to be neighbours for a very long time: the art in adding value is to make them good neighbours. BW are at last being helped in this planning connection by becoming a statutory consultee.

Other Waterside Property Value

56. There are an increasing number of other ways a restored waterway can provide value to property:

- Notwithstanding the negative impact on the environment utilities have statutory powers to install their equipment on waterway property. There are tens of thousands of such uses with utilities such as BT, Transco, Electricity and water companies using BW property for the installation of their apparatus. Modern omnibus agreements ensure that BW not only recover losses and costs but receive considerable payments to enable waterways to make improvements to at least offset some of the negative impact.

- There will be an increased use of the waterways as a regional/national grid to transfer water for navigation and companies.

- There are many more similar arrangements with private landowners and with the water companies for clean surface water drainage from developments into the waterways.

- The towpaths are now being used to carry the next generation super highway with fibre optic cables through a joint venture with Fibreway to produce long term income.

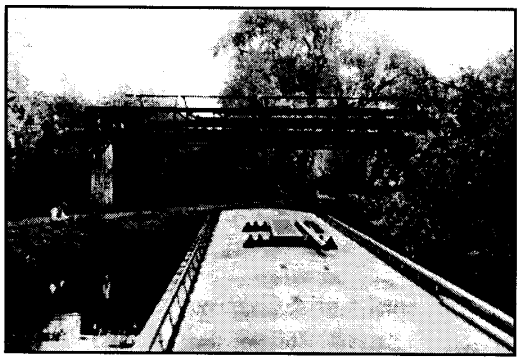
- BW sell surplus water for a whole variety of uses: irrigation, cooling and even drinking water supply with, for example, 20 million gallons of raw water a day being pumped to Bristol Waterworks to provide the City with over 30% of its supply.

Conclusion

57. Property investors create new "water features" in developments away from the canals. Why do they do that when they can have the real thing? People do not visit large expanses of unused water: what they want to see is colour, boats moving about, life, vitality and somewhere to spend their money. It is on this latter point that BW and its tenants are now closely focusing their attention: to maintain the infrastructure BW has to ensure that those places where visitors naturally congregate contribute to their upkeep and general expenditure. It is vital that the inland waterways network does not become a corridor of wall-to-wall houses but maintains a balance of high quality mixed use and working heritage.

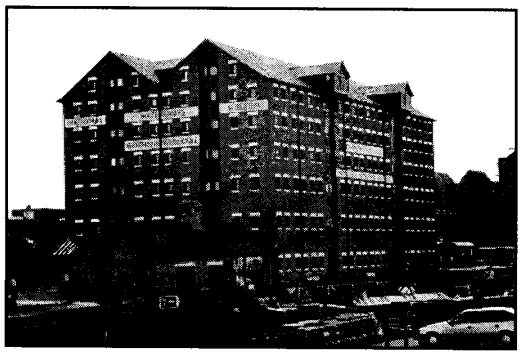
58. Most new development now faces onto and integrates with the water space, no longer turning its back and using the waterway for refuse disposal. BW's integrated management ensures that this vital attitude is maintained by the private sector to avoid a reversion to the past.

59. New developments place new demands on the waterways, but bring with them new business and income. Income will increase, but should not be the sole criterion. Using the appropriate expertise, a balance between restoration, development, heritage and the natural environment must be drawn. Waterway development should bring together the community needs for recreation with an opportunity to experience and understand the historic waterway environment and open up new places for jobs and homes in a package that meets the aspirations of sustainability.



Utility apparatus depreciating waterway value

Paper Mill at Kings Langley, Herts, provides landscaped waterside walk and leisure area for employees

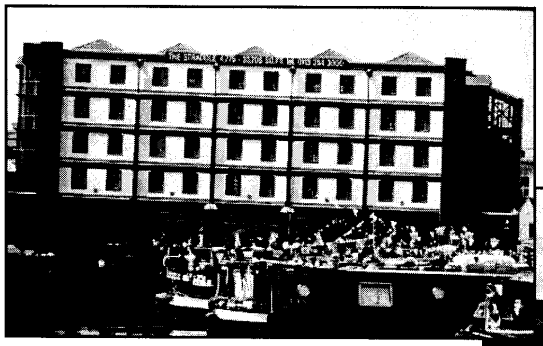


Waterway Museum, Gloucester Docks
Catalyst to regeneration

Previously contaminated site. Waterway Housing, Harefield, fully integrates waterspace takes full added value and provides new moorings

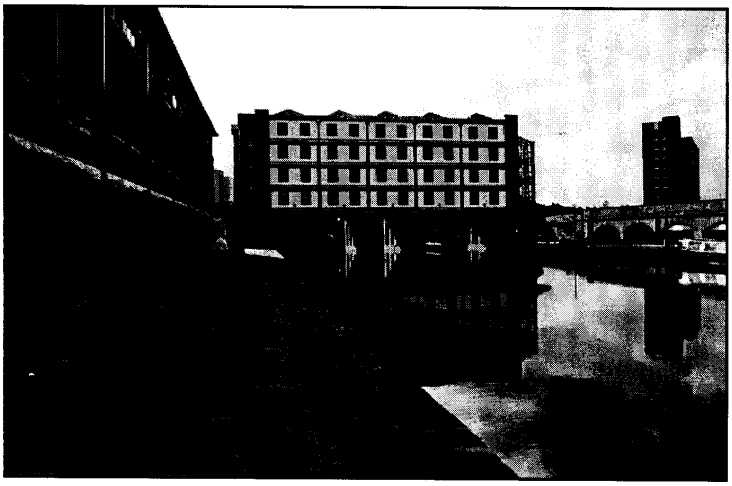
Wet Dock at Sheffield Basin restored at cost of development and with grant aid

Derelict Sheffield Basin prior to redevelopment



Straddle Warehouse restored and converted to office unit

Investment by BW and grant aid



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Some Legal Aspects of Restoration

by
Nicholas Q. Grazebrook, Solicitor
Consultant, Shakespeares, Birmingham

INTRODUCTION

1. Restoration of waterways frequently brings the restoration promoters - which may be unincorporated or corporate bodies, and may also be registered charities - into contact with statutory bodies such as British Waterways (BW) and the Environment Agency (EA) as well as local authorities. Conflicting views may arise, inevitably leading the restoration promoters into contact with the law, both civil and criminal; this will extend to common law developed by the courts over the centuries and to statutory law, being the law contained in Acts of Parliament.

2. It is hoped this chapter will help to bring these various aspects of law into perspective and to assist restorers by engendering an awareness of the principal issues that most frequently arise in waterway restoration. Not every aspect of law that may be encountered in a restoration project has been covered in the chapter. Restorers may also find themselves involved in Health and Safety law, negligence, employment and aspects of criminal law not covered here.

3. There are two principal areas of law that relate to legally (as opposed to physically) navigable waterways and there is a third area that impinges on waterways of all types.

4. First, BW have their own complete self-contained regime comprised entirely of statutory law (i.e. enacted by Parliament).

5. Second, Non-BW navigable waterways have their own dedicated regime, but more disparate than that for BW. These waterways are governed by numerous private Acts dating back at least to the 13th century and by common law (law developed by the Courts).

6. The third area is not waterway-specific. It comprises general law, mainly but not entirely statutory, which impinge on waterways and includes planning law, law protecting the environment, land drainage law, water resources law, property law, the law of nuisance and highway law.

7. The expression "waterway" encompasses a variety of meanings. In most contexts, including this chapter unless otherwise stated, it is used to mean a watercourse, whether artificial or natural, which is or at some time has been legally navigable. "Navigable" can mean, according to the context, physically navigable (whether legally navigable or not) or legally navigable (whether physically navigable or not).

8. A disused canal can cease to be even a watercourse. It would be straining the language to describe the Leominster Canal as a waterway or as a canal. Yet the so-called Lichfield Canal, comprising the Ogley Branch of the Wyrley and Essington Canal, is similarly waterless and yet is under active restoration. The distinction between a waterway and a watercourse, and the existence or absence of water, are particularly important in relation to highway crossings.

9. BW owned waterways are in three statutory categories, Commercial, Cruising and "the remainder", now know colloquially as Remainder waterways. Remainder waterways (which category can include those which have ceased to be watercourse) can be upgraded to Commercial or Cruising status. The category of Remainder waterways includes some unnavigable waterways, such as the unrestored sections of the Montgomery Canal and some odds and ends of the BCN. BW have power to dispose of Remainder waterways.

10. Artificial waterways should be distinguished from natural waterways for legal purposes. In the case of artificial waterways BW, or other navigation authority, will generally, as successor to the company that originally purchased the land and constructed the waterway, own the banks and bed. The entire waterway will therefore for legal purposes be private property in the ownership of one body. In the case of natural waterways, i.e. rivers, the water in its current location flows over land which is in the ownership of an identifiable person or persons. There may well be public rights of navigation along the river which will follow any natural changes in its course. There may be public rights of way alongside the river. It may be that there is or has been a towpath company owning or having rights to use the towpath.

LEGISLATION AFFECTING BW WATERWAYS

11. Prior to nationalisation on 1st January 1948 BW waterways all had their own statutory history. Most were artificial navigations and the construction or development of all of them had been authorised by one or more Acts.

12. The Transport Act 1947 swept them all into the British Transport Commission (BTC), leaving the earlier private Acts substantially in place whilst superimposing a layer of administrative and financial provisions. Between 1947 and 1962 the BTC promoted a series of private Acts - there was one nearly every year - and nearly every one provided for the closure and abandonment of one or more arm or section of canal or complete canal. This was done simply by extinguishing any rights of navigation and also the duty of the BTC to maintain the waterway in question.

13. The Transport Act 1962 established the British Waterways Board, imposed upon it a duty to review the manner in which their waterways might be put to the best use and empowered BW to charge for "services and facilities" provided by them.

14. By the time the Transport Act 1968 was enacted the earlier change of public opinion had penetrated Parliament and the Act, revolutionary in its day, contained the following provisions:

    it abolished all rights of navigation;

    it divided the majority of the waterways into categories - Commercial and Cruising;

    it imposed a quite relevant maintenance duty upon BW in respect of the two categories respectively;

    in respect of all those not categorised ("the remainder") it imposed an obligation to deal with them in the most economical manner possible "consistent with the requirements of public health and the preservation of amenity and safety"; there was power to manage, develop, eliminate or dispose of such Remainder waterways;

    it made provision in section 114 for Local Authorities to assist in maintaining any waterway (not restricted to BW waterways);

    it made provision in section 109 for Local Authorities and certain other bodies to take over or manage any Commercial or Cruising waterway;

    it provided in section 104 for the Minister to approve the transfer of waterways from one category to another subject to appropriate advertising and consultation.

15. This Act, together with the 1962 Act, remains the principal Public Act governing BW waterways.

16. BW themselves have promoted a number of private Acts. As a matter of constitutional law these cannot amend public legislation (i.e. the Acts of 1962 and 1968). These private Acts control construction, equipment and use of vessels, their registration, charges for their use and their removal. There are also various administrative provisions relating to certificates, etc.

17. The most significant of these private Acts was the British Waterways Act 1995 ("the 1995 Act"), which included the following provisions, among others:

    it introduced the Boat Safety Scheme;

    it provided for all boaters to be required to have third party insurance and an available mooring (unless "continuously cruising");

    it provided BW with powers to enter third party land in order to carry out maintenance;

it imposed upon BW in section 22 some important general environmental and recreational duties, including duties:-

> to take natural beauty and environmental matters into consideration whenever exercising its powers;
>
> to have regard to the desirability of protecting and conserving buildings, sites and objects of archaeological, architectural, engineering or historic interest;
>
> to take into account any effects on beauty or amenity of any rural or urban area or on flora, fauna, features, buildings, sites or objects;
>
> to have regard to the desirability of preserving public access to towpaths and open land;
>
> "to take into account the desirability of protecting for future use as cruising waterways, or as areas appropriate for other public recreational use, Remainder waterways with potential for such use" (subsection 2(d)).

18. EA legislation can have an impact on non-EA navigations in a variety of ways. The EA has a fishery role nationwide in that it can impose levies on fisheries (although none has yet been imposed); the EA is the pollution authority for all inland waters, including BW canals, and is responsible for enforcement of pollution controls; the EA is empowered to authorise abstractions and, whilst a navigation authority can generally transfer water from one place to another, e.g. from reservoir or river to canal, this can be prevented or controlled by a drought order.

WATERWAYS UNDER THE JURISDICTION OF THE ENVIRONMENT AGENCY (EA)

19. These waterways are those of which the former Water Authorities, and subsequently the National Rivers Authority (NRA), were the navigation authority. They comprise a number of rivers in East Anglia, principally the Nene and the Great Ouse, plus the non-tidal Thames and the Upper Medway.

20. As is the case with all non-BW navigations, most of the ancient legislation is still on the statute book with the role of the EA, as the successor to the earlier authorities, overlaid. The earlier, dedicated, legislation imposed the focused duty of a navigation authority on the EA, but this is now but one of a number of duties, sometimes conflicting with one another, which must be considered at the same time.

21. These include general recreational and environmental duties expressed in section 7 of the Environment Act 1995, which created the EA, in terms similar to those imposed upon BW in the British Waterways Act 1995 (see paragraph 17 above).

22. Where there is no active navigation authority for a navigable river the Water Resources Act 1991 as amended by the Environment Act 1995 allows the EA to put forward to the Secretary of State for confirmation byelaws relating to a variety of matters which can give it effective control of the use of the river. Similarly, the EA has power to apply to the Secretary of State for an Order empowering it to charge tolls. Such byelaws or Order can only be made under procedures which give objectors a right to have their views considered by the Secretary of State. With such powers the EA is capable of becoming effectively the navigation authority for such a river.

23. The EA legislation is quite different from that of BW. BW legislation was addressed to BW waterways (mostly canals built to be used by vessels) as such and only in the 1995 Act were environmental and other considerations introduced. EA legislation has its origins in water supply and management, with navigation having no supremacy and, in the case of some

navigations with no strong historic legislation, being but a small part of the undertaking as a whole. The result is a degree of inherent conflict, viz:

conflict between the ancient, navigation-orientated legislation, mostly still on the statute book, drafted to reflect the exclusively commercial role of the waterways, and the superimposed provisions making the EA effectively a modern navigation authority;

conflict between the navigation-orientated provisions and the EA's general environmental and recreational duties (now partly replicated in relation to BW waterways by the 1995 Act);

conflict between land drainage, flood defence, water resources and fishery functions on the one hand and navigation interests (including instances where another body is navigation authority) on the other.

OTHER WATERWAYS

24. These include the following:

the River Wey - governed by the National Trust;
the Broads - governed by the Broads Authority;
the Middle Level - governed by the Middle Level Commissioners;
the Lower Avon Navigation Trust, the Upper Avon Navigation Trust, the Rochdale Canal Company and other single navigation authorities;
navigable waterways with no navigation authority.

25. All navigable waterways in this category are likely to have their own dedicated ancient statutory legislation, sometimes, as in the case of the Broads and the Upper Avon Navigation, supplemented by modern enactments.

26. The navigations with no navigation authority, e.g. the Wye and the Severn above Stourport, have ancient statutory provisions establishing navigation rights but either the body promoting such Acts never proceeded with the envisaged works or charged the tolls or, having operated for some time, ceased to exercise its functions.

TRANSPORT & WORKS ACT 1992 (TWA)

27. This Act broke new legislative ground. It is a fundamental principle of law that only Parliament can enact laws. Whenever BW, or any other body, required some more law, therefore, they had to promote an Act of Parliament (called a "Bill" until it receives the Royal Assent and becomes law).

28. To promote an Act of Parliament is a long and expensive operation, with the result that organisations such as BW would "save up" their requirements for years so that they could all be incorporated in one Act.

29. In the late 1980s there had been a succession of applications for Acts dealing with light railway systems, and there had always been a trickle of waterways legislation. These applications were competing with government backed legislation for Parliamentary time so that Parliament were persuaded to empower Ministers to grant necessary powers.

30. The Act empowers the Secretary of State to make Orders encompassing the following:

the construction, maintenance and repair of waterways including the acquisition of land;

the creation and extinguishment of rights of navigation;

the making of byelaws;

the transfer, discontinuance and revival of undertakings;

the charging of tolls;

the application, modification or exclusion of any statutory provision in connection with the above.

31. There are provisions to ensure that the consultative and other provisions relating to reclassification and similar matters in the Transport Act 1968 are not circumvented by a TWA Order.

32. The Act constitutes both a threat and an aid to restoration. Those opposed to navigation can use it to extinguish rights of navigation and close canals. Those who support navigation can use it to overcome defects in ancient legislation, create rights of navigation and introduce modern and workable provisions for the construction and maintenance of navigations.

33. It should not be thought that the TWA provides a quick and easy route to new legislation. The procedure mirrors that for a private Bill, but operates outside Parliament.

34. The procedure is broadly as follows:

the Order is drafted and, where physical works are involved, an environmental statement is prepared;

consultation takes place with the local planning authority;

the application is made, a fee is paid and the application is advertised in the press and notified to owners and occupiers;

objectors register their views; if there is to be an inquiry the Secretary of state identifies the matters on which he needs information;

the Secretary of State decides whether the matter is to be dealt with by way of written representations, a hearing or an inquiry (in ascending order of importance and cost); a hearing is less formal than an inquiry;

the Secretary of State makes his decision based on written representations, or on the basis of the Inspector's report in the case of hearings and inquiries.

35. The whole procedure is lengthy, legalistic and expensive, especially if a hearing or inquiry is involved. Nevertheless it represents a substantial improvement over the Parliamentary process both in terms of cost and time, and does not have to be synchronised with the Parliamentary timetable.

36. The costs of the application and the hearing or inquiry are met by the applicant. However, either the applicant or any objector may have to pay costs to the other parties if they have behaved unreasonably.

37. A "TWA Processing Unit" has been formed at the Department of the Environment, Transport and the Regions (DETR). This Unit not only receives and processes all applications for Orders, irrespective of which Secretary of State will make the Order or refuse the application, but also informally guides and assists prospective applicants. A most helpful guide is obtainable from this unit at the DETR, TWA Branch, Room 2/22, 76 Marsham Street, London, SW1P 4DR (tel: 0171-271-5000).

HIGHWAY CROSSINGS

38. If a proposal is put forward to construct a highway across the line of a waterway, the rights and obligations of the proposed highway authority in respect of keeping the waterway open depend on the nature of the waterway.

39. If the waterway is a Commercial or Cruising waterway under the provisions of the Transport Act 1968 then there is an obligation on the Minister under section 107 Highways Act 1980 "where the proposals provide for a bridge over navigable waters to take into consideration the reasonable requirements of navigation over the waters affected by the order or scheme".

40. In practice this has proved to mean that adequate provision for navigation is made without question.

41. If the waterway comprises "waters or a watercourse over which a public right of navigation exists" then the same obligation is imposed upon the Minister as in the case of a Commercial or Cruising waterway.

42. There is no definition of a watercourse in the Highways Act, but the definition in other water legislation includes "rivers, streams, ditches, drains, cuts, culverts, dykes, sluices, sewers and passages through which water flows".

43. Whether or not a public right of navigation exists is a matter of law, and the most likely source of such a right will be the ancient statutes under which the navigation was established, but it should be noted that all rights of navigation relating to BW waterways were repealed by the Transport Act 1968.

44. A public right of navigation can be created by the owner formally dedicating his land to the public for navigation purposes in perpetuity.

45. There is thus the possibility of the owner of the land, which may be, for example, the course of a former canal, carrying out sufficient works to make it a watercourse or "waters" and then to dedicate it for public navigation with the result that provision for navigation can be required as a legal right by the owner in the event of a road scheme affecting the land.

46. Section 110 Highways Act 1980 - which gives a highway authority power to carry out works on any watercourse, such as derelict, abandoned or otherwise unnavigable waterways - empowers a Highway Authority "to carry out any ... works on any part of a watercourse, including a navigable watercourse, if in the opinion of the Authority the carrying out of the work is necessary or desirable in connection with ... the construction of a highway".

47. Furthermore section 282 Highways Act 1980 states that a Highway Authority may carry out "works for mitigating any adverse effect which construction ... of a highway has or will have on the surroundings of the highway".

48. It has been argued by highway authorities on a number of occasions, but without much conviction, that sections 110 and 282 do not empower a highway authority to provide a navigable crossing for a disused waterway. In practice there have been a number of occasions where highway authorities have provided navigable crossings, even in cases where waterways did not physically exist at the crossing locations, usually following recommendation in the reports of the inspectors conducting public inquiries.

TOWN AND COUNTRY PLANNING

49. A basic principle of planning law is that, whilst it is not unlawful for the owner or occupier of land to carry out building or engineering operations on the land or to change the use to which it is put, a person who does so without express or deemed planning permission renders himself open to enforcement action by the local planning authority, possibly obliging him to restore the land to its original state by demolishing what is new and reconstructing what has gone or to return to the original use.

50. Where the line of an abandoned or disused waterway is under threat from development the contents of the relevant local policy plan can be crucial. If the plan provides for the route to be preserved then this creates a presumption against damaging development.

51. Local Policy Plans comprise the following:

Structure Plans:

Prepared by county planning authorities these set out the strategic policy for the area;

Local Plans:

Prepared by the district planning authorities these set out the detailed local policy;

Unitary Development Plans:

Prepared by London Boroughs and Metropolitan District Councils these combine the concept of the structure plan and the local plan into one plan.

52. Central Government exercises considerable influence over planning policies and the main instrument of such influence is Planning Policy Guidance Notes (PPGs), which are taking over the role of Circulars. PPGs of particular interest to canal restorers, with publication dates, are:

PPG 9 Conservation (October 1994)
PPG 13 Transport (March 1994)
PPG 17 Sport and Recreation (September 1991)
PPG 21 Tourism (November 1992)

These and other guidance notes may be obtained from Her Majesty's Stationery office.

53. It is important to monitor the local policy plans for changes and to make representations to the appropriate planning authority against any proposed change which may have adverse implications for the integrity or restoration of the waterway for which restoration is sought.

54. Turning a disused and derelict waterway into one capable of accommodating traffic can constitute a material change of use requiring planning permission.

55. There are certain time limits designed to protect lawful development which has taken place in the past and has not been challenged for the appropriate period. Operational development, such as building and engineering operations, becomes immune from enforcement proceedings four years after completion of the development.

56. Change of use becomes immune from enforcement proceedings ten years after the change occurred.

57. Section 106 Town and Country Planning Act 1990 as substantially amended by the Planning and Compensation Act 1991 gives effect to the concept of "planning gain" by making it possible for a developer to incur a "planning obligation" to the local planning authority by which the developer promises to carry out, in addition to the development for which planning permission is sought, work of public benefit which is neither necessary because of the nature of such development (often highway improvement) or meets some other objective of the authority's approved local policy plan (see paragraph 51 above).

58. Most of the reported cases have involved supermarkets, where highway improvements, provision for the disabled, the provision of waste-recycling facilities - even an art gallery display and a bird-watching hide in one case - have been funded by the applicant.

59. This has led to the widely held view that in some cases planning permissions can be bought, but the relevance, and potential benefit, to canal restoration is clear. Guidance on the proper use of planning obligations is given in DoE Circular 1/97.

CONSERVATION

60. In addition to the general protection afforded certain endangered species under the Wildlife and Countryside Act 1981, which is dealt with in the chapter on Wildlife Conservation, there

are various categories of statutory designation which can be relevant to waterway restoration. These include:

> a Conservation Area designated under section 69 of the Planning (Listed Buildings and Conservation Areas) Act 1990 (the 1990 Act);
>
> a Listed Building under section 1 of the 1990 Act;
>
> an Area of Outstanding Natural Beauty (AONB) designated under section 87 of the National Parks and Access to the Countryside Act 1949 (the 1949 Act);
>
> a National Park designated under section 5 of the 1949 Act as amended by section 61 of the Environment Act 1995; it should be noted that the Broads have similar status to that of a National Park, under the Norfolk and Suffolk Broads Act 1988. One of the Broads Authority's purposes is to protect the interests of navigation:
>
> a Site of Special Scientific Interest (SSSI) created under section 28 of the 1981 Act;
>
> a "Super SSSI" created under section 29 of the 1981 Act;
>
> a National Nature Reserve (NNR) created by a declaration of English Nature pursuant to section 15 of the 1949 Act in respect of land over which it has control or pursuant to section 35 Wildlife and Countryside Act 1981 (the 1981 Act) where the land is of national importance and is being managed by a voluntary conservation organisation;
>
> a Special Area of Conservation (SAC) created under the Conservation (Natural Habitats &c) Regulations 1994 which implement the European Community Habitats Directive 92/43.

61. Designation of a Conservation Area is the responsibility of a local planning authority, and is applied to an area where it is considered desirable to preserve or enhance "the character or appearance" on account of its special architectural or historic interest.

62. There are restrictions on the demolition of buildings and damage to trees in Conservation Areas.

63. Designation as an AONB or as a National Park (including the Broads) brings with it a special measure of planning protection. This includes a requirement for planning permission in many cases where no permission would otherwise be required. Detailed guidance on the special planning considerations that apply in these areas is included in Planning Policy Guidance Note 7 on the Countryside. There is no distinction in landscape quality between the two, but National Parks must also provide significant recreational opportunities.

64. SSSIs, by far the most pervasive designation as far as waterway restoration is concerned, are designated under section 28 of the 1981 Act. They are "notified" by English Nature, Scottish Nature or the Countryside Council for Wales (referred to below as "the relevant conservancy"), and apply to land considered to be of special interest by reason of its flora, fauna or geological or physiographical features.

65. Notification is the act of notifying the owners and occupiers of the land in question, the Local Authority and the Secretary of State of the intention to restrict certain damaging operations. "Owners and occupiers" includes only those with a legal interest in the land, i.e. freeholders, leaseholders or those with a tenancy. It does not include licensees such as users of a canal or persons or bodies carrying out restoration work with the permission of the land owner.

66. The notification itself operates to give immediate protection to the site, and must provide for a three month period within which representations and objections can be made. However the notification frequently does not come to the attention of users and bodies representing users sufficiently promptly to enable them to make representations despite the importance to them.

67. The relevant conservancy must confirm or withdraw the notification within nine months from the date of service upon the Secretary of State.

68. A notification lists what are considered “operations likely to damage” (OLD). Once the SSSI has been notified the listed operations can only be carried out with the written consent of or in accordance with an agreement with the relevant conservancy or in any event after the expiry of four months from the giving of notice by the owner or occupier of his intention to carry out the operation. The notification therefore effectively imposes a four month delay.

69. The status of an SSSI does no more in the great majority of cases than give the relevant conservancy breathing space within which to apply pressure on the owner or occupier to make a voluntary agreement with the conservancy. Restricted operations are those which in the opinion of the relevant conservancy may damage the special interest for which the site was notified. A typical operation affecting a waterway is expressed in terms such as "boat movements which may cause damage to the aquatic environment". Such wording appears to thrust upon the owner or occupier the burden of establishing whether the actual boat movement is a damaging operation in which case it is thought to be invalid and unenforceable as not complying with the Act. The actual wording of the notification should therefore be studied with care.

70. All NNRs are SSSIs and comprise land managed to provide opportunities for study and research into flora, fauna and geological and physiographical features of the area or for protecting or preserving them. Generally NNRs are managed by the relevant conservancy under agreements with owners, and the relevant conservancy is empowered to promote byelaws affecting NNRs.

71. If notification as a SSSI does not achieve the protection required by the relevant conservancy - and it has been noted above that SSSIs do not prohibit anything, they simply impose a delay in the carrying out of OLD - declaration of a "super SSSI" is the next logical step for the relevant conservancy, although it is one that is taken reluctantly and rarely as it involves public expense.

72. A "super SSSI" is an area subject to a Nature Conservation Order under section 29 Wildlife & Countryside Act 1981. They are rare (only some 50 have been made) and involve prohibition of potentially damaging operations for 3 months with the ability to extend this up to 12 months, and with provision for compensation. The criminal offence of carrying out a potentially damaging operation can be committed by anyone so that it can catch restorers or visiting members of the public such as boaters. In addition to the notification requirements for an SSSI a Nature Conservation Order has to be publicly advertised.

73. A Special Area of Conservation (SAC), also known as a "European Site", is designated under the European Habitats Directive and the Conservation (Natural Habitats, etc) Regulations 1994. These graft onto the existing SSSI mechanism the additional protection required by the Directive. The existing SSSI protection applies but the relevant conservancy is able to amend the list of damaging operations, must decline to give consent if any plan or project may affect the integrity of the site and may amend or withdraw any consent without compensation. Furthermore the Secretary of State has power to make a special nature conservation order which is stronger than a Super SSSI as any ban on operations is permanent, although compensation is payable.

PROPERTY OWNERSHIP

74. As a general rule water is disregarded when it come to property law. Planning permission, for example, for a mooring will relate to the bed of the waterway.

75. Owners of land bordering a natural watercourse generally own the bed up to the centre of the watercourse (*the medium filum*) and this is assumed to be the case in the absence of evidence to the contrary (the title deeds will not necessarily show the bed of the watercourse as being included). However it is quite possible for ownership of the bed to come into separate ownership - an example being the Warwickshire Avon below the head of Tewkesbury lock which is owned by the local authority. If a river becomes diverted into a new course which is

over land which is already owned then such landowner will be the owner of the new bed and some land on each side of the new course.

76. The land comprising the site of a disused artificial waterway (which will include the embankments and cuttings) may remain in the ownership of the former navigation authority (example - the Rochdale Canal), possibly BW; it may have been conveyed to owners of adjoining or neighbouring land (example - Ogley Branch, Wyrley and Essington Canal) or it may have been transferred in its totality to a local authority (example - Droitwich Canal).

77. Ownership of land can be lost by adverse possession - colloquially known as squatters' rights. If a person occupies land of another, and does so exclusively, without stealth, without permission and without the use of force for a period of over 12 years this may give him ownership (particularly if he fences it off). Each case depends on its own facts and claims are not easily substantiated, but if it appears that canal lands are being adversely occupied the rightful owner should immediately eject the squatter to stop time running against him.

78. A similar doctrine (termed "prescription") applies to the acquisition of rights over land - the most common being rights of way. In this case the rights acquired must attach to land in one ownership (the dominant tenement) over adjoining land in another ownership (the servient tenement). The right may be claimed as a legal right of the dominant tenement over the servient tenement if the activity in question has been carried out over the servient tenement continuously, without stealth, without force and without permission for upwards of 20 years. A right of way or access (an easement) can, of course, be granted specifically by deed and by the consent of the owner.

79. The public may similarly acquire public rights of way and similar rights by long user, but prescription in this form does not apply to the acquisition of navigation rights over land covered with water (established by the Derwent case).

80. Discovery of the identity of an owner of land can present a problem. If the land is registered the identity can be ascertained from H.M. Land Registry by making a search (an "index map search"). This is done by obtaining Land Registry form 96 from a law stationers, completing it and submitting it to the Land Registry. If this reveals that the land in question is registered then application can be made for a copy of the entries on the register. This is done on form 109 for which a fee of £4 is payable, plus a further £4 if a plan is required. This will reveal the name and address of the legal owner and the extent of his ownership.

81. If the land is not registered - and whilst most urban land is registered much of the countryside is not - although the Land Registration Act 1997 will speed the process by bringing about compulsory registration on the death of an owner or the creation of a mortgage there is no official machinery for discovering who owns land. Local inquiry is usually the most effective approach.

CONCLUSIONS

82. The law will have a profound influence on any restoration project from its inception to its completion. Restorers who do not recognise and respond to the importance of the subject are likely to pay a high price sooner or later. The adage "Don't spoil the barrel for a ha'porth of tar" is appropriate. Timely consideration of legal matters and effort spent in establishing suitable legal structures, whilst possibly appearing to absorb time and resources that would yield more immediate and visible results if applied to physical restoration, is likely in the longer term to pay dividends in its contribution to the restoration effort.

83. Every subject in this chapter has, of necessity, been covered superficially. It is hoped that the chapter will impart sufficient understanding to equip restorers to take such advice and to make such detailed investigations as may be required to secure a project free from legal problems.

Waterway Societies and their Constitutions – the Legal Perspective

by
John M. Fryer LL.B., LL.M, A.L.C.M.
Partner, Ramsdens and Hardcastle, Solicitors, Huddersfield

INTRODUCTION

1. Waterway restoration and maintenance is "big business". It is therefore of prime importance that any waterway society is properly constituted in law from the outset. This chapter concentrates upon the different types of legal framework that are available for setting up and running any form of organisation but in particular those that are appropriate for waterways societies. Irrespective of the type of organisation that can be set up it then looks at whether or not such an organisation can be charitable in law and tackles the drafting of the constitution and its subsequent registration. It then deals briefly with the on-going administration of an organisation after it has been legally constituted.

2. Finally the chapter considers the relationship of waterway societies with the public, national and local governments and with the various sources of funding available to help them achieve their objects.

TYPES OF ORGANISATIONS IN LAW

3. Any group of individuals wishing to pursue a common goal will soon realise that they need some form of rules to govern their activities and to set out their proposed objectives and the powers that they need to achieve such objectives.

4. There are a number of types of organisation available irrespective of whether it is intended to pursue charitable objectives or not. The main types are as follows:

   (a) An unincorporated association
   (b) A trust
   (c) A company

Unincorporated associations

5. An unincorporated association is one which is based simply on a constitution, that is a set of rules setting out briefly the objects of the organisation and the constitutional or organisational framework governing the members.

6. This form of organisation is generally thought to be appropriate for a new small body with limited objectives with little likelihood of holding or dealing with substantial funds or with land and buildings, and whose objects have little or no risk attached to them.

7. It is quick and relatively cheap to set up a fledgling organisation as an unincorporated association; when established, it may then transfer its assets and liabilities to a company (see below). Common examples are societies and clubs, such as a railway club or the local sub-aqua society. Most waterway societies have started in this way and remained so for varying lengths of time.

8. The unincorporated association is run by a committee. Whilst the committee can operate a bank account, problems can arise where a lease or freehold property is acquired. As the committee members change frequently they are inappropriate as lessees or holders of freehold title. In such circumstances the association will appoint trustees (for whom there should be provision in the rules) who will hold the property on behalf of the committee who, in turn, will be answerable to the membership. Such trustees can only deal with the property they hold in accordance with the directions of the committee or as directed by a court of law.

Trusts

9. Trusts have been a principal component of the British legal system for centuries. A trust itself normally establishes a legal relationship between three individuals or bodies of individuals: a donor who agrees with trustees to transfer money, property or other assets to the trustees to be held by them for the benefit of a third party (the beneficiary). So far as affects the current subject matter the beneficiary would be the public as a result of the restoration, maintenance, etc of a particular waterway.

10. Many trusts are created for the benefit of specific individuals, that is for private purposes rather than public or charitable purposes. An example is a family settlement where grandfather puts money or assets into a trust for the benefit of his grandchildren at a specific age. Nonetheless trusts are also created for public or charitable purposes. A common example is a trust to establish and maintain a wing or department of a hospital.

11. A trust should not be confused with a company which uses the word "trust" in its title. Such companies are not pure trusts but generally contain the basics of a trust in that the company will hold assets with a duty to apply them for the benefit of the public.

12. A trust requires a "constitution" setting out the duties and obligations of the trustees and the objectives of the trust. Legal advice is essential where trusts are concerned.

Advantages and disadvantages of unincorporated associations and trusts

13. The main disadvantage of establishing an organisation as an unincorporated association or a trust is that both types of organisation have trustees or a group of individuals who hold the money and assets and as a result such "trustees" have unlimited personal liability.

14. Where property is concerned the trustees will, on behalf of the organisation, personally enter into any contracts and will sue and be sued in their names. If as a result of being sued damages are awarded against the organisation then the trustees will have to pay. Generally the trustees will however be entitled to be reimbursed out of the assets of the organisation but, if the organisation simply does not have sufficient assets, the trustees will have to contribute out of their own resources.

15. Most trustees would be prepared to accept such risks but the potential liability will always remain and the risks of acting as a trustee can be insured against.

16. In matters other than property the committee are likely to sue or be sued in a representative capacity on behalf of the members.

17. Unincorporated associations and trusts are not well regulated in law: the constitutions are brief and there is an absence of any external statutory authority to control or indeed support them. There is a recurring expense in transferring assets from a retiring trustee to a new trustee; there may be difficulties in raising funds on loan and the trustees will be liable for the repayment of loans if the organisation is unable to pay.

18. However, unincorporated associations and trusts do have a role to play and are quick and relatively cheap to set up without reference to any outside body. There are no fees or registration procedures.

19. They are also fairly simple to operate and the constitutions can be easily amended. Furthermore, as a result of there being few statutory requirements there are few continuing formalities or expenses of running them.

Companies

20. For more mature organisations the preferable form of legal framework, particularly for waterway societies, is that of a company.

21. Companies are bodies formed in accordance with the requirements of the Companies Acts. There are generally two types of company. The first is a company limited by shares such as Sainsbury's or ICI. The second is a company limited by guarantee and not having a share capital.

22. Both types of company have limited liability. They are a legal person in their own right and do not need trustees as such although they do have a "committee" to run them, known as a Board of Directors, Board of Governors or Council of Management, together with a Company Secretary.

23. The company sues or is sued in its own name and, unless there is fraud, a third party can only take away the assets that the company holds. The liability is limited by shares or guarantee.

24. A person who buys a share in a limited company has no liability other than for fully paying for the share. The shareholder can only lose the amount paid for the share.

25. In companies limited by guarantee rather than having shares the members (as opposed to shareholders) undertake that if the company is wound up they will contribute to its assets to the extent of a particular limit as set out in the company's constitution. The limit is normally £1.00 but can be fixed at say £10.00 per person for example.

26. A company limited by guarantee is the suitable format to adopt where the objects are charitable rather than commercial. Share capital companies are generally set up for commercial purposes.

27. There are two elements to the constitution of a Company - the Memorandum of Association and the Articles of Association. The Memorandum sets out the company's name, its objects and powers for achieving those objects. The wording of objects is crucial and legal advice should be taken in their preparation.

28. The Memorandum for a share capital company sets out the amount of shares that are available; for a company limited by guarantee it sets out the amount of the members' guarantee.

29. The Articles of Association set out the constitutional or administrative framework for running the organisation. The Articles specify details regarding membership and the framework for meetings of the Directors or Council of Management and for meetings of members or shareholders amongst other things.

Advantages and disadvantages of a corporate framework

30. As mentioned above the members or officers of a company generally have limited personal liability. Company law, whilst being complex, is well developed to run and control both commercial and non-commercial organisations. Companies are more expensive to set up and run but are likely to find favour with outside bodies who deal with them, particularly the large grant-giving bodies.

    A company limited by guarantee is the recommended framework for all waterway societies.

CHARITABLE STATUS

The four heads of charity

31. Irrespective of the type of organisation in law if the objects of such an organisation are charitable then it is beneficial for it to be registered with the Charity Commission as a charity whether on a compulsory or voluntary basis.

32. There are four heads of charitable purpose in law: the relief of poverty; the advancement of education; the advancement of religion; and other purposes beneficial to the community not falling under any of the preceding heads. Waterway societies which restore and maintain waterways generally fall within the last category although of course there is an element of education.

Matters affecting charitable status

Public benefit

33. For an organisation to be charitable in law its objects must confer an exclusive benefit upon members of the public. Some organisations however have been granted charitable status

where their objects benefit a section of the public or are limited in geographical location.

Non-charitable activities

34. An organisation must be exclusively charitable in law to qualify as a charity and to be registered as such. It cannot mix charitable and non-charitable objects: there must be public benefit and no element of private benefit. The position of a trustee or director or company secretary of a charity is an honorary one: they cannot generally be remunerated to cover their work other than by the reimbursement of out-of-pocket expenses.

35. The funds of a charity cannot be channelled into private hands. It cannot collect money from the public and then utilise this to restore a building in private ownership which when restored will remain in private ownership without any form of public benefit.

Political activity

36. Of prime importance to a charitable waterway society is the fact that it must not have political purposes. However a charity can engage in political activity if its views are based on a well-founded and reasonable case and the activity is expected to further the objects of the charity.

Advantages of charitable status

37. The prime advantage of an organisation being registered as a charity is the effect of such registration on members of the public and grant giving bodies. When registered the charity is of course given a registration number which it then includes on its letterhead with a note that it is a registered charity. Members of the public are more likely to be persuaded to donate to such an organisation.

38. Registration as a charity also opens up the opportunity to apply to other charitable organisations or grant giving bodies for funding and most grant givers will only be prepared to consider an application for funding by a registered charity. Charitable bodies can only use their resources for charitable purposes. These can include other charitable organisations as well as the direct furtherance of the charitable object. Any properly drafted charity constitution will include the power to benefit other charitable organisations whose objects are consistent with that of the organisation in question.

39. Charitable organisations are also treated favourably for taxation purposes including income tax, corporation tax, capital gains tax, inheritance tax, stamp duty, value added tax and rate relief. This subject is dealt with in more detail later.

40. Just because an organisation is not registered as a charity does not however mean that it is not charitable in law but registration dispels any doubt. The Inland Revenue (for the purpose of claims from taxation by charitable organisations) generally regard registration as conclusive evidence of charitable status and are reluctant to accept a claim from an organisation that is not registered with the Charity Commission.

41. Some may argue a charity is at a disadvantage in that there are further rules to comply with as set out in the Charities Acts and that the activities of a charitable organisation are more liable to public scrutiny.

42. It should be noted in particular that the Charities Acts impose duties and obligations and liabilities upon "charity trustees". The phrase "charity trustees" is defined as meaning the persons having the general control and management of the administration of the charity which of course includes the Board of Directors so far as a charitable company is concerned.

SETTING UP PROCEDURE

Drafting

43. When a group of individuals have decided that they will form a new organisation they need first to consider what type of organisation in law may well be suitable for their activities and then whether or not it should become a charitable body, which of course will be determined by the objects they wish to pursue. At that stage they need to consider how to draft the 'constitution' for the organisation.

44. Whether or not a new organisation is set up as an unincorporated association, a trust or a company its constitution will be referred to as a 'governing instrument'.

45. Whilst it is not essential it is preferable for the group to take advice at this stage, probably from a solicitor. The choice of a particular solicitor is also important as only a few solicitors deal with this type of work and even fewer in number have knowledge and experience of charity law. The choice will therefore influence the cost and the efficiency with which the matter is dealt with. A local Law Society will have a list of what areas of law the local solicitors specialise in. A personal recommendation is however preferable.

46. It is important to ensure that the governing instrument is correctly drafted at the outset as this forms the framework for its activities over future decades. This does not mean that it cannot be altered at a later date but it is of course preferable to "get it right" from the beginning.

47. Drafting requires creative ability: the governing instrument should allow the organisation to pursue objects in the future which may not be contemplated by the promoters of the organisation at the outset.

48. The internal constitutional framework of an organisation, providing for the appointment and retirement of officers, meetings of officers and members and dealing with the financial side and accounting, usually follows established precedent.

Model documents

49. There are of course basic blank governing instruments available for an unincorporated association, a trust or a company. Some solicitors may be prepared to provide these and so far as companies are concerned models can be acquired various law agents throughout the country. Companies House provide guidance notes on this topic.

50. However, if it is proposed that the new organisation should become registered as a charity then the first step is to apply to the Charity Commission to obtain a registration information pack on starting a charity and applying for registration. This pack is available free of charge from the Charity Commission at St. Alban's House, 57-60 Haymarket, London, SW1Y 4QX or Woodfield House, Tangier, Taunton, Somerset, TA1 4BL, or 2nd Floor, 20 Kings Parade, Queens Dock, Liverpool, L3 4DQ.

51. The registration pack is very comprehensive and somewhat daunting; it includes a great number of booklets, information notes and models governing instruments for all different types of charitable body.

Registration

52. The type of governing instrument will determine registration requirements. If the organisation is an unincorporated association or a trust with non-charitable objects then there are no registration formalities whatsoever. However, if the organisation has charitable objects then it is likely that the organisation will need to be registered as a charity with the Charity Commission; if the organisation is to be set up as a company it will need to be registered at Companies House.

Companies House

53. Companies must be registered with the Registrar of Companies at Companies House in Crown Way, Cardiff, CF4 3UZ, who provide assistance with registration requirements. When the Memorandum and Articles of Association of the company are settled and on the basis that the company is to be a company limited by guarantee without a share capital, the promoters – i.e. the first members of the company - need to sign the Memorandum and Articles of Association and complete a company form 10 "First Directors and Secretary and Intended Situation of Registered Office". The form asks for the registered office of the company. That is an address where anyone wishing to contact the company can do so. A fairly permanent address is preferable such as that of a solicitors or accountants office, but a private residential address will suffice. The form also asks for practical details regarding the first directors and the company secretary.

54. If the organisation is to be a registered charity with charitable objects then in law it can dispense with the word "Limited" as the last word of its title. Form 30(5)(a) has to be completed and a statutory declaration made in front of a solicitor or Commissioner for Oaths where the individual making the declaration declares that the organisation is entitled in law to dispense with the word "Limited". It should be pointed out that in addition there are various rules governing the choice of name generally. The Registrar of Companies can advise on this aspect.

55. Company form 12 "Declaration on Application for Registration" also has to be formally declared in the same manner as form 30(5)(a), stating that all the requirements of the Companies Acts so far as registration are concerned have been complied with.

56. When all these papers have been prepared they need to be submitted to the Registrar of Companies for incorporation together with a cheque made payable to Companies House for the current registration fee. Registration will probably take about two or three weeks to complete provided that the documentation is in order; following this the Registrar of Companies will issue a Certificate of Incorporation confirming that the company is registered, giving the date upon which it was registered and setting out the company's registered number. The company can then start to trade and open a bank account.

The Charity Commission

57. Generally registration is compulsory for charities with an income exceeding £1000.00 per annum, for most charities which use or occupy land, and for those having a permanent endowment where some or all of its assets are required to be held permanently as capital and can never be spent as though they were income. For other charities registration is voluntary.

58. The following documents will be required:

    (a) a completed application form (APP1) to be found in the registration information pack;

    (b) two copies of the governing instrument which in the case of a company will already have been incorporated at Companies House or otherwise two copies of the signed or adopted Trust Deed or constitution with evidence that your organisation has been set up; the evidence required is set out in one of the booklets in the pack entitled "Registering a Charity" (booklet CC21(b));

    (c) copies of financial accounts for the last three years if there are any; and

    (d) a completed Declaration Form (DEC1) which is included in the registration pack.

    At present there is no registration fee.

59. If the stated objects of the organisation are charitable in law the Charity Commission have a statutory duty to enter the organisation on the central register of charities and advise by letter giving the registration number and a photocopy of the entry in the register.

60. The Charity Commission can ask for the name of the organisation to be changed or may advise that registration will be subject to making certain changes to the governing instrument.

61. The Commission can refuse registration and if so they will advise accordingly and explain why. The applicants have the right to seek a review of their decision.

62. The registration procedure can be lengthy and complex and organisations are generally recommended to seek advice.

ANNUAL ADMINISTRATION

63. After an organisation has been formally set up and registered there are of course continuing matters which must be dealt with either as set out in the governing instrument or otherwise as prescribed by general law.

Meetings

64. The organisation will have to have regular meetings of its Committee, Board of Directors or Trustees as the case may be with the proceedings of such meetings being duly minuted and kept in a minute book. If the organisation is a company then it will need a set of "statutory books". These books which are available from law stationers include amongst other things a register of the directors and secretary, a minute book, a register of members and membership certificates, a register of mortgages and a register of sealings. As a company is a legal person in its own right it normally signs by way of a seal with the seal being attested by two directors or one director and the secretary.

65. The organisation will usually need to hold an Annual General Meeting of the members every twelve months. At that meeting the formal agenda will include the approval of the annual report and accounts of the organisation, the appointment or re-appointment as the case may be of an accountant/auditor to the organisation, the appointment or re-appointment or indeed removal of a director, trustee or member of the management committee and of course any other business. This last item gives the wider membership of the organisation the opportunity to voice their concerns or to debate a specific issue or topic of interest to the whole membership.

Accounts

66. All organisations need to keep accounts of their income and expenditure (or receipts and payments) and capital assets; the governing instrument will generally specify this. A trust or an unincorporated association will probably appoint a treasurer to manage the finances but the legal responsibility falls upon the "Trustees".

67. Most organisations will probably find an accountant or book keeper who is willing to be a member of the organisation and carry out the accounting function. At the financial year end the annual accounts will then have to be prepared, undergo independent examination as to their accuracy (commonly known as auditing) and be formally approved, commonly at an annual general meeting. However, smaller organisations may be exempt from audit.

68. Books of account will of course have to be set up at the outset as will a bank account. The Inland Revenue will have to be advised and it may be necessary in certain circumstances to register with H M Customs and Excise for Value Added Tax purposes.

69. In addition if the organisation has any paid employees then it will have to operate a PAYE system. Help, advice and information is available from the Inland Revenue and H M Customs and Excise. It may also be necessary to consult a qualified accountant.

70. The annual accounts for a company limited by guarantee can be quite complex and their format and content is generally prescribed by company law.

Filing requirements

71. A company is required to file its annual accounts with the Registrar of Companies together with an annual return. The annual return is a form sent out to the company by Companies House and asks for such information as the registered office of the company and the place where its books are kept, details of the directors and secretary and a membership list or list of shareholders if appropriate. There is an annual fee for submitting the return. There are statutory time periods for filing accounts with late filing penalties imposed.

72. In addition if the organisation is a charitable body then it will probably have to file its annual accounts with the Charity Commission and also complete an annual questionnaire and prepare an annual report.

73. Any changes to the governing instrument can only be carried out if the instrument so permits and generally with the approval of the Charity Commission, where the organisation is a registered charity. The alterations have to be filed with the Charity Commission and also with the Registrar of Companies for a corporate organisation.

74. An annual Tax Return will have to be sent to the Inland Revenue; VAT Returns are generally submitted on a quarterly basis.

Tax

75. If the organisation is a charitable body then generally it will be exempt from most types of taxation but not universally so.

76. There are exemptions from income tax in respect of the rents and profits of land vested in the charity, and of interest, dividends, distributions or annual payments provided that they are applied for charitable purposes.

77. Any income derived from trading is not generally exempt from taxation in the present context, e.g. of sales of books and pamphlets, badges, caps, canal earthenware, etc. Exemption is only allowed if the profits are applied solely for the purposes of the charity and either the trade is exercised in the course of the actual carrying out of a primary purpose of the charity or the work in connection with the trade is mainly carried out by beneficiaries of the charity.

78. As a general rule of thumb trading activities should only form a small part of a charitable organisation's activities. If the trading activity becomes significant then generally the charity should set up a trading company wholly owned by the charity; this then pays Income Tax on its profits but covenants all its net profits on an annual basis to the charity thus enabling the charity to reclaim Tax under the deed of covenant. This is how the well known high street charity shops generally operate.

79. An annual covenanted donation to a charity capable of lasting for four years or more enables a charity to reclaim basic rate income tax deducted by the donor on such donations.

80. In general income tax principles also apply to the computation of income for corporation tax purposes for incorporated charities, and the income tax exemptions apply also to corporate tax.

81. If a charity makes a capital gain which is applied for charitable purposes it is not chargeable to capital gains tax; nor is capital gains tax chargeable on a gift to a charity.

82. Transfers of value (gifts) are exempt from inheritance tax to the extent that the gift is to a charity or to be held for charitable purposes only.

83. Charities are generally exempt from Stamp Duty; Value Added Tax is only chargeable on the supply of goods and services by a charity where the supply is in the course of a business carried on by the charity.

84. Apart from Value Added Tax paid on goods or services supplied to a charity for the purposes of its business a charity is unable to recover by deduction or otherwise the input tax on goods

or services supplied to it. The supply by a charity of goods donated to it for sale is generally zero-rated with further exemptions in respect of fund raising by charities and export of goods.

85. Finally where non-domestic premises are used wholly or mainly for charitable purposes rate relief is available. 80% mandatory relief applies where the charity is in occupation with the rating authority having a discretion to increase the relief to 100%.

86. Waterway organisations may need to take legal or accountancy advice on specific matters referred to under this section.

RELATIONS WITH OTHERS

87. Of prime importance to the success of a waterway organisation will be its interaction with the "outside world", including the public generally, national and local government and funding agencies.

The public

88. If the organisation is a charitable body then the main purpose of its activity is to benefit members of the public generally. The Board will probably need to encourage membership of the organisation or otherwise to involve the public in specific activities. Restoration work can be arduous and time consuming, and needs an element of dedication. It is difficult to encourage voluntary effort of this nature and a lot of the work quite often falls upon a hard core of enthusiasts.

89. The public and in particular members of the press can be quite cruel and can bring about the downfall of an organisation or limit its success. It is important to spend time informing the public so that it generally considers that the work being done is a worthwhile activity and should be encouraged. It will be particularly useful if the local press are supportive.

90. There will always be criticism whatever is done. Certain individuals (specifically those living at the side of or close to a canal) may be totally against what the organisation is trying to achieve for reasons only known to themselves. There is a general resistance to change and restoration may be labelled "a complete waste of money". Some older members of the public will of course remember when a particular waterway was in operation previously and refer to its run down state prior to closure.

National and local government

91. This heading includes national and local government as well as various navigation authorities, such as British Waterways which is responsible for much of the inland waterways system.

92. It will be necessary to create a continuing dialogue with the local navigation authority officials having responsibility for the particular area and then with those at head office. Obviously proposals will have to be discussed with the navigation authority so far as such activities affect it. The routes of some former waterways are still in the ownership of British Waterways but some land of course is now in local authority or private ownership and it will be necessary to obtain the appropriate permissions for any work to be carried out.

93. The most difficult area is of course where parts of the line of a former waterway have been sold to private business and quite often land in question has been built upon or is otherwise used as part of a business site. In such circumstances there is likely to be a great deal of opposition to restoration proposals.

94. A Local Authority's Planning Department can be extremely useful in protecting the line of a former waterway in its local plan so as to preclude the granting of any consent for development which would be adverse to restoration. In addition the Local Authority's Leisure and Recreation Department will probably support a restoration project in the light of the success of other restoration work. A restoration project will need the support of local councillors, local MPs and Euro MPs and it is conceivable that it will be necessary to put together a professional presentation to the relevant MPs at the House of Commons.

Funding agencies

95. At the outset funding in its wider sense is likely to come from those who are prepared to give up their time and materials in support of a project and from membership fees, public collections and sales items. It will soon become apparent that, due to the scale of the project, it is unlikely that these sources will provide a significant proportion of the required funding which in most cases will run into millions of pounds.

96. If there is to be appreciable progress the organisation will need to look at the major players in the grant giving field. This is covered in the chapter on funding.

CONCLUSION

97. It is very difficult in a short dissertation such as this to cover a wide range of legal material but at least the reader will have a flavour of the subject as a whole. It cannot be stressed enough that it is important at the outset to research the subject and to take appropriate professional advice or to encourage relevant professionals to become interested in the subject matter of your project.

98. Advice can be expensive and is often ineffective; the advice of those who are experienced in the relevant problems should be sought.

Managing Consultancies on Inland Waterway Projects

by
Tony Harrison, CEng, MICE and
Roy Sutton, BA, MSc, CEng, MICE

INTRODUCTION

1. It is often necessary to employ a consultancy company or partnership (hereafter called a "consultant") to provide engineering, environmental or economic feasibility studies and to prepare detailed engineering designs for inland waterway restoration and development projects. Feasibility studies are often key elements in determining planning policies, identifying the major problems and obtaining funds for restoration. Effective, appropriate and economic engineering designs - and the associated contract and specification documents - are fundamental to successful construction work, whether done by contractors or voluntary bodies.

2. The quality of either feasibility studies or engineering designs is, to a great extent, dependent on adequate initial definition by the client of what the consultant is being employed to do, and on the client selecting a suitable consultant.

3. This chapter provides advice on the management of professional services contracts with consultants. It covers the tasks of defining requirements, preparing contract documents, selecting and inviting suitable companies to tender, evaluating tenders, letting and managing contracts and reviewing draft reports.

DEFINING THE REQUIREMENTS

4. The Client organisation proposing to commission the work must initially set up a small committee to define what work is required. This will involve:

   (a) Informal contacts with organisations which may have an interest in the work to obtain their advice and specifications, such as:

   - local authorities (planning, highways and leisure departments)
   - Environment Agency
   - English Nature (or the Countryside Commission for Wales)
   - The County Wildlife Trust
   - Inland Waterways Association (local branch and region, Restoration Committee, Navigation-Technical-Amenity Committee, Honorary Consultant Engineers)
   - Commercial developers
   - British Waterways (or other navigation authorities where relevant)

   (b) Contacting other organisations which have recently commissioned consultants for similar work.

   (c) Contacting potential funding partners to obtain their advice on what they wish to be done.

   (d) Setting a budget for all the work likely to be required; see also paragraph 9 (e).

   (e) Appointing a consultant to carry out an initial scoping study to see what data and information is available, but only if the committee feels that the scope of the work needed cannot be defined until some technical work has been done.

   (f) Preparing the Invitation to Tender (ITT) documents: for reasons of propriety, if this is not done directly by the committee no one employed by the consultants to be invited to tender should be associated in any way with preparing the ITT.

INVITATION TO TENDER

5. An ITT normally consists of:

   - general information about the client and the proposed timetable of activities,

   - the specification of requirements (or brief) for the work to be done,

- the contract conditions,

- the tender information to be provided by the consultants tendering.

6. An identical ITT should be sent to all the consultants being invited to tender. If any tenderer has an important question or points out an error or omission during the tender period then all tenderers should be circulated with the issues together with the Client responses. Tenderers must be allowed a reasonable time to prepare and submit their tenders. An example of an ITT for a feasibility study is given in the Appendix.

General Information

7. This part of the ITT should specify:

   (a) The name of the Client, which is the body commissioning the work. If the Client is the representative of a consortium then all the members of the consortium should be named.

   (b) Any general objectives of the Client, and any particular objectives of the Client in carrying out the work.

   (c) The name and address of the Client's Representative who will liaise with the appointed consultant, hereafter called the Consultant. The ITT should state that the Consultant will only report to and accept instructions from the Client's Representative. The Client's Representative will normally be a leading officer of the Client who will be able to meet the Consultant regularly. An integral part of the Representative's duty will be to ensure that all appropriate officers of the Client and the associated consortium, if any, are fully informed of all relevant matters, such as progress of the work and expenditure incurred. IWA may be able to assist an organisation seeking a suitable Client's Representative.

   (d) The submission time and date for the tender.

   (e) The expected award date for the contract.

   (f) The required completion date for the work.

   (g) The titles of any documents appended to the ITT.

   (h) The total number of consultants being asked to tender, normally three or four.

   (j) Any requirements about the staging of payments to the Consultant.

8. This general information should give each party a fair idea of the likely return for its effort in preparing a bid. In the long term it will provide a Client with better bids and better working relations with consultants. Shortlisting consultants before inviting formal tenders will ensure that only consultants likely to be capable of doing the work will be invited. Guidance on the selection of suitable consultants to be invited is given in paragraphs 12 and 13.

Tender Information

9. The ITT should request each consultant to provide the following as part of his tender:

   (a) A resume of capability which might include:

      - number of professionally qualified staff,

      - scale of work previously done, including references to actual work of this type undertaken recently,

      - annual fee income,

- relevant registrations to qualifying bodies such as the Association of Consulting engineers and Quality Assurance certification,

- the management structure of the company,

- the amount of professional indemnity insurance that will apply to the work.

(b) A method statement which will describe the way it is intended to carry out each part of the work and the management structure of the team doing the work.

(c) A programme that will define the timings of each part of the work showing the reporting stages and the completion date.

The interim reporting stages should be loosely defined by the Client with the Consultant being invited to define its own which may more closely suit its methodology. The ITT should state the scale of documentation and discussion that is expected at reporting stages and whether the Consultant is to suspend work at any of these stages and for how long. It is important that reporting stages are well defined before a contract is agreed. They should be arranged so that preliminary results and the quality of the work can be examined whilst there is still time to redirect the work if necessary. Requiring interim stages may increase tendered prices but will produce better communication and make later problems less likely and less expensive to resolve.

It is likely that an interim report on hydrology would: record the details of all the data identified and the results of fieldwork, define the further fieldwork and studies required and provide a methodology for the remainder of the study.

It is likely that an interim report on overcoming physical obstructions would define: the route options to be investigated and costed; the principal physical obstructions, with outlines of each of the options to be worked up to preliminary design (i.e. definition of dimensions) and costed; and a complete report, to the final standard, for one of the obstructions.

The completion date will normally be that in the ITT; but the Consultant may wish to offer an alternative date.

(d) Curricula vitae of the qualified staff who are to be principally engaged in the proposed work.

(e) A quotation (normally a fixed price) that will also define, for each interim stage:

- the number of hours of work by each staff grade,

- the cost of each hour by each staff grade (e.g. director, principal, technical, supporting),

- the likely cost of expenses such as equipment, travel, subsistence, etc. Such expenses should be defined as far as possible; an alternative is to apply a percentage to the staff costs to define a limit to the amount of expenses claimable,

- the fee for supervision or administration of prime cost items such as site survey contracts,

- the cost of any other item required to undertake the work.

The Consultant should be asked to provide this information, even though there may be a fixed price quotation, as it will allow comparisons to be made when the tenders are assessed and reduce any subsequent arguments about costs for additional work.

Prices should define VAT as a separate item.

Clients may wish to disclose their maximum budget for the work specified in order to indicate the scale of effort and extent of the work that is required. It is wise for clients to hold some funds in reserve in case additional work is found to be necessary.

For supervision of a large construction project the contract will require the contractor to provide site facilities for the Engineer (which is the title of the consultant during construction) and often this hidden cost may be taken into account by requiring the Consultant to specify what facilities are to be provided.

For detailed design work on large jobs a Consultant may be asked to quote its fee as a percentage of the construction contract cost. However, for waterways work a fixed price quotation or an hourly rate is more likely to be satisfactory.

The Consultant will normally state that its quotation includes all costs necessary for satisfactory completion of the work and that any costs not individually identified may be deemed to be included in the rates and prices that are given within the quotation. The Consultant will normally state a period of validity of the tender, often three months.

Specification of Requirements

10. This should include:

(a) A historical background which will outline what has been done in the past. It will identify and briefly describe any existing relevant publications or studies or other sources of relevant data that are known to be available, such as record drawings, utility plans, maps etc. It may provide names and addresses of utilities and relevant statutory bodies, e.g. highway authorities. It may also discuss access rights to land or state that the Client will provide a list of riparian landowners.

(b) A scope of work that will define the objectives of the work to be done (but not the methodology). In physical terms it might define the structures which are involved and what is to be done for each of them. In hydrological terms it might define the channels or sources to be considered. In economic terms it might define the scope of data to be recorded and existing surveys, censuses and records to be reviewed. It might define bodies whose views are to be sought or from which the Consultant is to seek advice and information (but not instructions).

(c) A statement of standards to be adopted or achieved. This might include:

- required craft dimensions, eg draft, beam, air draft, or waterway dimensions,
- anticipated level of use of waterway,
- limiting conditions for water levels, flows, currents etc,
- test discount rate,
- environmental constraints.

Contractual Conditions

11. These should include the following:

(a) The expected form of contract. Normally this will be the Association of Consulting Engineers (ACE) Conditions of Engagement, 1995, Agreement D (for report and advisory work) or Agreement A(1) (for civil/structural design work) but the Consultant may propose its own agreement/conditions of employment which the Client may wish to consider using.

(b) The required level of supervision by the Consultant of contractors.

(c) A requirement for the Consultant to work within statutory obligations and to inform the Client's representative of any statutory obligations which may for any reason be infringed as a result of any works proposed. For design work the Construction (Design and Management) Regulations 1994 require the Consultant to appoint a Planning Supervisor; all designers are required to produce risk assessments and submit them to the Planning Supervisor for review as the design work proceeds.

(d) A requirement that the Consultant will report only to and accept instructions only from the Client's Representative.

(e) The number of copies of interim and final reports and designs to be produced. If an unbound master copy is also provided the Client can reproduce additional copies as required. For this reason it is advisable to require that all reports can be legibly photocopied in monochrome.

(f) The extent to which interim work and related documents should be disclosed to the Client and its advisors.

(g) An embargo on publicity by either party except with the full agreement of the other party.

(h) Ownership of all work being vested in the Client. This would include interim calculations, records of surveys, interviews, plans, taking-off sheets, and any references or material purchased for the work under contract. Most items would in practice remain in the possession of the Consultant; but it should be stated that the Client has a right of access to its property during and after the term of the contract. This is contrary to Clause 7.1 of ACE Agreement D: this clause must be amended if necessary before a contract is signed.

(j) A requirement that all references made by the Consultant to publications or to the work of other bodies or individuals should be clearly identified and briefly described in the Consultant's report.

SELECTION OF CONSULTANTS

12. For any professional service associated with inland waterways there will usually be a large number of companies apparently suitable to undertake the work. For civil engineering most consultants are listed in "Consultants File", which is published annually with *New Civil Engineer* by Emap Construct. Possible criteria to use in selection are:

- experience of similar work
- proportion of company's activity in the relevant discipline
- proximity of Consultant's office
- size of company
- financial stability of company.

It will also be worth asking for recommendations from organisations which have recently employed consultants on similar work.

13. If these considerations are insufficient to narrow the field to three or four companies a pre-qualification bid procedure is suggested. Each consultant is contacted, given a brief description of the scope of the study and is asked to send the Client standard brochures and literature illustrating the consultant's recent experience in those disciplines particularly relevant to the proposed work. The three or four consultants which then appear most suitable are short-listed.

EVALUATION OF TENDERS

14. The evaluation of tenders is an important pat of the tendering procedure and it is essential that a clear audit trail is provided to justify the decision made. Evaluation should be approached with an open mind and complete impartiality. Normally a group of officers of the Client and its advisors would form a small committee to evaluate the tenders; no tenderer should have any part in the evaluation process. The evaluation would be done at a single meeting, which would lead either to an award of a contract or to a detailed definition of any matters requiring post-tender negotiation.

15. Before the tenders are opened evaluation criteria should be established. These will list the benefits required from the service to be purchased in order of priority and place a weighting against each item.

16. All tenders should be opened at the same time; any that are late should be returned unopened. Immediately after opening the tenders each should be checked for compliance with the requirements of the ITT: any tender that does not include all the information requested in the ITT should be rejected. The remaining tenders should then be subjected to a technical assessment against the evaluation criteria. These are generally quality judgements of the tender proposals against the headings in paragraph 9(a) to (d) and other aspects that are considered important. It is also worth trying to assess the degree of novelty in each tender.

17. There should then be a financial assessment of the tenders based on the information prepared in response to Paragraph 9(e). This should include comparisons of total cost, average cost per man-day and hours of effort proposed.

18. It is desirable though not essential to interview the tenderers to test the statements made in the tender and to see whether the Client is likely to be comfortable with the Consultant. There may also be a need for post tender negotiation with one or more of the consultants tendering. This is an acceptable practice but the Client must ensure that there is no discrimination against any of the consultants and price should not normally be the principal issue.

19. The tender evaluation board should ensure that its final decision is impartial and objective, fair and reasonable, and represents value for money; the reasons should be recorded in writing. The unsuccessful tenders should remain confidential documents.

LETTER OF ACCEPTANCE

20. The letter of acceptance should:

- confirm the Consultant's quotation and its assurance that its quotation includes all costs necessary for the achievement of the work and that any costs not individually identified are included in the rates and prices within the quotation,

- confirm who is paying for the work and at what stages,

- reach the successful Consultant prior to the award date,

- request acknowledgement by the award date.

21. After receipt of the acknowledgement, letters should be sent to the other bidding consultants advising them of the name of the successful Consultant and thanking them for their interest and efforts.

22. If a tenderer asks for an explanation of the outcome this should only be given verbally and after the award date. The purpose of such a debriefing is to explain politely the strengths and weaknesses of the tenderers bid and help improving its future competiveness. Details of other tenders should not be revealed.

MANAGEMENT OF CONTRACTS

23. It is essential that services contracts are actively managed. The role of the Client's Representative is to ensure that the Consultant delivers the work specified in the contract, to act as the official line of communication between the Client and the Consultant, and to maintain formal records providing a comprehensive account of performance and a full audit trail.

24. The Client's Representative should have regular contact with the Consultant. The Representative may also need advice from other persons with relevant knowledge, e.g. of planning, waterway engineering, conservation, user interests, economics etc. It may therefore be useful to set up a small advisory team which would discuss progress with the Client's Representative and the Consultant on several occasions during the contract, especially at the start, at interim reporting stages and to review the first draft of the final report.

25. The Client's Representative may have to redirect the work to a degree that falls outside the original scope or specification. In this event the Consultant may rightfully claim for increased remuneration for additional or abortive work. This can lead to conflict and should be avoided by ensuring that a clear scope and statement of standards is set out in the specification. A well-defined interim reporting arrangement will allow early redirection and minimise additional or abortive work. Formal records will provide essential supporting evidence if the Consultant seeks increased remuneration or if it proves necessary to determine the contract.

APPENDIX

[Address]
[Tel/Fax number]
[Date]

Dear Sirs

FEASIBILITY STUDY OF
RESTORATION OF THE BARSETSHIRE CANAL

I have pleasure in inviting you to quote for undertaking the study as detailed in the enclosed brief. The study period is expected to start in [month, year] and to extend for not more than [X] months. Fixed price quotations are being sought; the maximum total budget available is [£££] including VAT.

As part of your submission please include the following:

(a) a description of the ownership and management structure of your firm, details of your turnover in each of the past three years and confirmation that you carry professional indemnity cover of not less than œ5 million,

(b) a summary of your firm's capability, including the number of professionally qualified staff, and your firm's experience on studies of this nature,

(c) evidence that your expertise extends to all disciplines likely to be required in the course of the study or that you have arrangements to contract out certain activities,

(d) a method statement describing how you intend to undertake each activity envisaged in the study and how these activities will be co-ordinated,

(e) a programme defining when each activity would be expected to be carried out, the stages at which you envisage formal consultation with the Client, and the expected completion date, together with confirmation that your firm has the capacity to execute the work in the defined timescale,

(f) details, including curricula vitae, of the principal staff who would be assigned to the study, their responsibilities and assignment periods,

(g) a quotation that: defines for each activity the number of hours of work envisaged and the charge rate for each staff grade; sets out the likely cost of disbursements on travel, subsistence etc; and gives the total cost with the VAT cost as a separate item.

Although the contract for the execution of the study will be for a fixed price the above information may be used in evaluation of proposals and for costing any required modifications to the proposal of the successful firm before the contract is signed.

Prior to commissioning the study, the Trust may decide to interview some or all of the five consultants invited to make submissions.

Please send four copies of your submission to me by 4pm on [day, month, year] in an envelope marked BCT but not bearing any name or mark indicating the sender.

Yours faithfully

A Person
Study Manager for the Barsetshire Canal Trust

BARSETSHIRE CANAL TRUST

CONSULTANT'S BRIEF FOR A STUDY OF RESTORATION OF THE BARSETSHIRE CANAL

Client: Barsetshire Canal Trust

1.1 The Barsetshire Canal Trust is a private company limited by guarantee and not having a share capital with the object, *inter alia*, of restoring the Barsetshire Canal for the use and general benefit of the public. The Trust was set up in [month, year] by: the district councils of North Barsetshire, West Barsetshire and Barset Vale, and the Barset Canal Society.

Client's Representative

Mr A Person
[Address] [Tel/Fax number]

Background

2.1 The Barsetshire Canal extended from Barport Junction, on the Great Onion Canal to the River Fortine at Fortbury. The route passes through or near Great Barset, Little Barset and Forthampton. The main line of the Canal was built between 1796 and 1810. A branch, the North Barset Canal, was constructed in 1814-1819 between Great Barset and Howton on the Howchester Canal. A number of smaller branches were built from the main line to Barset Minor, Waytown and Chippley.

2.2 The Canal was built as a "narrow canal" to accommodate boats with maximum dimensions of 7ft 0in (2.13m) beam and 72ft (22m) length, and had a depth of 4ft 6in (1.37m) except on the summit level which was probably 7ft (2.1m) deep. Use of the Canal declined in the second half of the nineteenth century and navigation effectively ceased early in this century. The Canal was abandoned by Act of Parliament with the land reverting to the riparian owners. Most of the original bridges have been demolished.

2.3 The total route of the main line from Barport Junction to Fortbury is 83.9km; the North Barset branch is 14.5km and the other branches total 9.5km. There were 23 locks which climbed the 62.1m from the Great Onion Canal to the Canal's summit at Great Barset, and 18 locks which descended the 48.3m from there to the River Fortine. 11 locks on the North Barset Canal descended the 18.0m to the Howchester Canal.

2.4 The Canal was originally supplied with water from Barset Water and Waterham reservoirs and from a number of small streams; the reservoirs are now used for recreational purposes and may not be available to supply water to a restored Canal.

2.5 The Barsetshire Canal Trust's aim is to protect, conserve and improve the route of the Barsetshire Canal, and branches, for the benefit of the community and the environment, with the ultimate goal of restoring a continuous navigable waterway. The Trust believes that the Canal is largely still in restorable condition in rural areas, albeit silted up, overgrown and in places obstructed by road crossings. Along the lengths passing through towns the original line has been subject to much redevelopment, particularly in Great Barset and part of Howton. A total of 6.5km of rural lengths of the Canal have been restored by the Trust, largely using voluntary labour, for amenity purposes and to demonstrate the benefits of restoration to the community. The Trust has received increasing support for this work from the county council, the former National Rivers Authority (now the Environment Agency) and from a number of charities and other funding agencies. The Trust has now decided that the time has come to commission a study of the feasibility of restoration of the whole Canal.

2.6 A list of relevant studies and publications, which will be available to the consultant, is given in Appendix A.

Objectives of the study

3.1 The objectives of the study are to:

(a) review the principal difficulties to be faced in restoring the Canal and to consider how these difficulties might best be overcome,

(b) consider the best means and sequence of carrying out the restoration works and, where there is a choice, determine the optimum route,

(c) review the water requirements of the restored Canal and the best means of providing the necessary water resources,

(d) assess the benefits of restoration to the local community, as well as regionally and nationally,

(e) investigate the environmental impacts of restoration, assessing the environmental enhancements achievable and suggesting mitigation measures where an adverse impact is likely,

(f) provide an estimate of the cost of restoration for separate sections of the Canal.

Scope of Study

4.1 The study is to cover the main line of the Barsetshire Canal and the Chippley and the North Barset branches.

4.2 Where the Canal is obstructed by development the Consultant shall review various options for dealing with the situation; these shall include restoration along the original route, restoration along alternative route(s) suggested by the Trust and restoration along other routes which appear to the Consultant to be practicable.

4.3 The Consultant is not required to investigate land ownership. Where it is necessary to enter private land for the purposes of the study, the Consultant shall make his own arrangements with the landowner. Details of land ownership, where known to the Client, will be made available to the Consultant.

4.4 Water resources shall be reviewed in consultation with the Environment Agency, Anglian and Thames regions. This aspect of the study shall consider surface and ground water supplies, including runoff from major paved surfaces (e.g. the M1), reuse of treated effluents and possibilities for storage within or outside the Canal and of back pumping. The impact of restoration on water quality, land drainage and flood management are to be included.

4.5 The Study shall include sufficient engineering detail, including all critical dimensions and levels, to permit realistic estimates of the costs of the works proposed. All cost estimates shall be based on the assumption that the works will be carried out by commercial contract awarded through competitive tendering at prices current on the submission date of the final report of this study. The Consultant may indicate those works which could be undertaken by voluntary groups and the cost savings that would be achieved.

4.6 The assessment of the environmental impacts of restoration shall be based upon an initial outline baseline survey of the Canal route and its environs. The magnitude and significance of the impacts of the proposed works, including any major alternatives, shall be ascertained and the results presented in the form of an environmental statement.

4.7 Benefits shall be assessed in terms of user visits and enjoyment value, additional income attracted to the area, increased employment, enhancement of property values etc, so that the benefits of restoration can be compared with those of other public investments in the area.

4.8 The standards to be adopted in the study are as follows:

(a) Craft - maximum size:

length 22m beam 2.13m draught 1m

(b) Channel

bed width	14ft 0in (4.27m), or as original construction
minimum width at locks	7ft 2in (2.18m)
minimum width at bridges	2.4m or as original construction
towpath width	2m
depth	1.37m or as original construction
freeboard	0.3m
minimum air draught	2.3m over 2m width

(c) Level of use. This should be estimated from levels of use of similar British Waterways canals, taking account of any restrictions revealed by the engineering study, and of the levels of demand indicated by the benefits study.

(d) Water supplies should be adequate to cope with the effects of a 1 in 10 year drought.

4.9 The Consultant shall obtain information on all utilities crossing, or passing near to, the Canal and shall estimate the costs of rerouting them where necessary.

4.10 During the course of the study the Consultant shall consult the following bodies:

The Planning, Engineering and Recreation departments of NorthBarsetshire District Council, West Barsetshire Council and Barset District Council.

The Planning and Highways departments of Barsetshire County council.

The Water Resources, Land Drainage and FRCN departments of the Environment Agency, Anglian and Thames regions.

The Department of Environment, Transport and the Regions, Highways Division.

Railtrack.

The Barsetshire Wildlife Trust.

The Barset Naturalists Trust.

The Barset Canal Society.

Contract Conditions

5.1 The contract shall be carried out in accordance with the Association of Consulting Engineers (ACE) Agreement D, except where this conflicts with the clauses below.

5.2 The Consultant shall work within statutory obligations and shall inform the Client's Representative of any statutory obligations which may for any reason be infringed as a result of the work or any works that it might lead to.

5.3 The Consultant shall report to, and only accept instructions from, the Client's Representative. The Client's Representative will advise the Consultant on the extent to which interim work and related documents can be revealed to other bodies and persons.

5.4 The Consultant shall provide 6 copies of interim reports and of the draft final report, and 20 copies of the final report plus an unbound master copy of the final report. All reports shall be produced such that text and drawings can be legibly copied in monochrome.

5.5 There shall be an embargo on publicity by either Consultant or Client except with the full agreement of the other party.

5.6 Ownership of all work, including the utilities information referred to in paragraph 4.9, shall be vested in the Client; the Client will have a right of access to this property, if held by the Consultant or others, during and after the term of the contract; this clause replaces Clause 7.1 of ACE Agreement D.

5.7 All references made by the Consultant to publications or to the work of other bodies or individuals should be clearly identified and briefly described in the Consultant's report.

Managing a Dredging Contract

by
Marion Bidmead

INTRODUCTION

1. The method you adopt for your dredging operation will depend on local factors such as, width of waterway, location, surroundings and amount of debris. If you have a narrow waterway with little more than a couple of boat widths you will probably have no choice but to dredge the whole width. The assumption on which this chapter has been written is that dredging is needed over a substantial length of waterway.

ENVIRONMENTAL ISSUES

2. There is at present no legal requirement to undertake an 'environmental impact study' prior to carrying out works on waterways. In spite of this it would be foolhardy to ignore environmental considerations. A visual survey will be adequate for most purposes, especially in a highly contaminated built-up area.

3. Main considerations for evaluation are flora, fauna and fisheries, the local value placed on the site and its susceptibility to change in the water quality. The removal of contaminated and black organic sediments is likely to give long-term improvements in water quality. Dying weed reduces oxygen levels in the water, which may adversely affect any fish stock in the short term. Winter working will minimise the effects of any pollutant release caused by dredging and the spoiling of fish spawning grounds.

4. How far the investigations are taken may well depend on the budget. A full environmental impact study carried out by a suitably qualified person could cost approximately £3000. For this you can expect a map with vegetation marked, a report including suggestions as to what should be left at all costs and, if the surveyor understands you want to enhance the ecology and not to obliterate it, suggestions as to what can be sacrificed if necessary. Also included will be a list of species found. When commissioning your report ask for common English names to be given as well as the botanical name so that everyone can understand the content. It is also helpful to have a percentage indication of how widespread each species is over a fairly large local area; for example when dredging in East London I would define the local areas as Greater London.

5. If you do not know of anyone qualified to give you assistance, it is worth enquiring of your local authority planning department. Many local authorities have a running contract with a local ecology unit to provide surveys when required through their area. As this is already paid for, the survey may be free. It goes without saying that enquiries should be made at the local authority, British Waterways (BW) and Environment Agency (EA) as to whether the area has already been surveyed. Both BW and EA have conservation departments which could be useful to contact for assistance.

6. With the use of any heavy plant it is inevitable that some damage will be done to the ground: make sure any concerns you may have are included in the contract.

7. If the waterway has fish in it, you should consult the EA or BW fisheries departments for advice. Local angling consortia should also be advised well in advance of work starting, which will minimise potential conflict.

8. Re-instatement of any damage should be high on the list of things to do when the dredging work is completed.

SURVEYS & PROFILES

9. There are numerous companies who will carry out hydrographic surveys. Whilst carrying out this work they can also collect soil samples, if you require them, and draw up profiles.

10. Again it is worthwhile contacting the engineering department at your nearest regional office of British Waterways. BW have a computer package which draws profiles and calculates quantities of silt for removal; this would save a lot of surveyor time and reduce the potential for errors. BW may be willing to work on the survey data and print it out. This system makes fitting your silt removal to your budget easy, having obtained an estimated price per cubic

metre from your potential contractors. The package will bring up on screen cross sections of waterway with the surveyed existing profile shown as a solid line. From this you can add on your desired profile, be it taking the top off high spots or lowering the silt level over a large area. When the desired profile has been entered, the computer will calculate the quantity of silt to be removed, from which the work can be priced. If the cost is over budget, the client simply redraws the lines, or reduces the length of waterway to be dredged, to reduce the amount of spoil to be removed!

11. Commonly surveying is carried out by one of two methods: these are electronically (similar to sonar) or dipping with a blunt-ended pole. The latter is the most common because of price and accuracy - a person can tell the difference between debris and canal bed, which sometimes the 'gadgetry' mistakes. It is for each individual organisation to decide how much do-it-yourself you employ and how much you pay others to do it for you. Some funding bodies may require to see reports from professional organisations throughout the project.

12. To carry out a survey the length of the waterway is usually measured off in metres with distances being marked along the piling etc., using marking paint (this needs to be visible to the person doing the dredging). Suggested intervals of every 50 metres would suit most circumstances. The weir and datum levels need to be found and from these depths are measured. From the marks the surveyor can then start dipping across the canal/river bed at one metre intervals. This will give the information needed to establish the existing profile, from which the volumes of silt for removal can be calculated.

13. It should be borne in mind that the consistency of dredgings varies from waterway to waterway and slippage from the sides is likely to occur.

14. If any abstraction takes place on the waterway the client should check that the licensing body has informed the abstractor about the dredging works.

DISPOSAL OF SOIL

15. To establish where the spoil removed can be disposed of, evaluation of its content has to be made. The EA will be able to advise whether it considers that soil samples should be taken and give an indication of how many and where from. This decision will be based on local knowledge of pollution incidents, industrial discharges, fly-tipping, fish stocks and previous dredging.

16. As mentioned earlier, if there is a need to take samples the surveyors can collect these. Most water companies can carry out testing on sediment. Samples should be clearly labelled to identify where they were taken from. The client should allow approximately three weeks for a report to come back.

17. If the spoil is heavily contaminated the only choice is a landfill site. If it is not heavily contaminated there are two choices (1) tipping on the bankside or a nearby field (if the owner is willing) or (2) sending to landfill. If the quality is really good there is also the potential for selling it to mix with top soil.

Bankside Disposal

18. Bankside disposal has the advantage of an immediate saving transport and landfill costs. References to disposal can be found in section 35 to 44 in the Waste Management Licensing Regulations, which establishes the new Waste Management Licensing system. Make no mistake: the site will look like the biggest quagmire in the country and as a consequence may cause a great deal of hostility. A good year may pass before the area starts to regain an acceptable appearance. Considerations which should be made when deciding whether it is appropriate to use the bankside disposal method are:

    - landowner's permission

    - changes to habitat by nutrient rich silt

- avoidance of tipping on reeds and other flora
- visual impact - image and character
  - exposure of debris
  - change to bank profile
- physical dimensions of area to be tipped
- obstruction to towpath, warning notices
- drainage
- need to fence off area to prevent access until silt is dry and stable (this may take many months)
- re-profiling when silt is dry
- re-instatement of land with planting schemes.

Landfill Option

19. The landfill option is appealing due to the lack of eyesore on site at the end of the contract and, apart from a final clean-up (by the contractor), the work is 'instantly' finished. The Environmental Protection Act requires all waste to be securely contained (no slopping out of the back of the haulage vehicles), with transfer only to an authorised site via a carrier accompanied by an appropriate written description. Waste Management Licences are required and every handler along the line must be registered. The results of the soil testing will largely dictate which landfill sites the spoil can be taken to. Provided the contract is for the entire works your contractor will deal with all this, but make sure you know where it is ending up.

20. This is the most costly part of the dredging operation but generally presents fewer headaches, and the sight of a lorry load of silt disappearing from your waterway is hard to beat.

SITE ACCESS & LOADING

21. In this section there are no general solutions to the potential difficulties: these can only be sorted out locally. Below are some of those the author has encountered and a few hints on what can be done to eliminate problems.

22. If the majority of heavy plant can be brought to and from site by water a lot of access problems are immediately solved. The amount of plant will vary from contractor to contractor and site to site. Some will be one man and a dredger - others may bring a team of eight people (all with cars), one tug, one dredger, four mud hoppers and an excavator - not forgetting the fleet of muck-away lorries and the port-a-cabin.

23. Most likely the contract will be running for months rather than days. What is tolerable for two days quickly becomes the nub of dispute and discomfort over two months. Always think ahead: the client and the contractor will need to bring in some form of port-a-cabin or caravan for this team to store kit and have a break in; the client will need somewhere to layout/pin up copies of the profiles and to hold site meetings. Experience indicates that a shared facility, although having its drawbacks, generally proves invaluable in keeping the client informed as to what the contractor is doing (not always obvious) and saves duplicating other essentials like gas. The weather has a role to play here as well: rare is the person who is prepared to stay outdoors through rain, sleet and snow, so allow sufficient space in the port-a-cabin.

The Access Route

24. The site’s neighbours may support the project initially but having the muck-away fleet passing a hundred yards from their house several times a day, dropping silt for the children to walk through may well decrease their level of support. If the operational site and access route are

situated on either derelict land or in an industrial area it may increase security and lessen the dangers of the public strolling through the site.

25. It is advisable to walk the route which the plant, machinery and lorries will use and clarify any doubts regarding clearance through gateways or between buildings. Find out the dimensions needed from the various firms involved The contractor if faced with not passing through a gap is unlikely to think twice before widening it himself (usually with an excavator bucket). This is when they prove how fast they can work and the brick gate-post will be rubble before you can shout "No".

The Operational Area

26. Issues to consider are as follows:

27. What will be the space requirements? How will the dredger be brought to site? If it arrives on the back of a low loader a crane may well be needed to unload it and put it in the water.

28. Will the site office and porta-loo need to be fenced off? Is it safe to leave plant unsecured? Both public safety and vandalism will help to reach a decision. Floating plant: will ropes be good enough or are chains and padlocks needed?

29. If the operational area (unloading of hoppers and loading of lorries) is across or next to the towpath the client will have to take measures to control the public passing through the site. Large signs at either end of the site stating, "Please wait here to be escorted through this construction site", or similar, should be produced.

30. Is there adequate turning space for the bulkier lorries?

31. A copy of the Construction (Design & Management) Regulations 1994 (CDM) should be obtained. These regulations require safety issues to be included at the development stage of a project.

32. **Water point**. This is required not just for those cups of tea and hand washing but to wash off the bulkier lorries. The drivers can be pulled over and fined by the police if silt falls off the lorry onto the highway. The Environmental Protection Act requires waste to be securely contained. The client should watch the backs of the lorries as they drive away and, if there is any seepage from the rear tipping door, note the licence plate number, phone their office and tell them the door has a defective seal. The Company should then radio to the driver instructing him to call in when he has tipped to have the seal checked and replaced before taking another load. This is a frequent occurrence: seals flatten and wear very easily.

33. it is important to ensure that the area where the excavator is working is kept as clear of debris as possible. It will not only help reduce accidents but give the appearance of an efficient site.

34. Depending on the length of waterway being dredged the client may decide to move 'camp' part way through to be closer to the action.

35. Bridges over waterways tend to be low: will the dredger pass under? If not, the only solution is for it to be craned out and put back in, creating more access problems - unless the dredger is amphibious and can pull itself up the bank, along the towpath and back in the water. At this point it is also worth thinking about bridge strengths: will they support the weight?

TENDER DOCUMENTS

36. For a high value contract the client will normally invite tenders for the works from several companies. This will require preparation of a comprehensive set of documents which should be bound together and sent out to the to be invited to tender. Many of the large organisations which carry out deep water dredging, e.g. for coastal harbours, will be interested in tendering for the work. The client should not be put off from approaching them by thinking your works are too small for them to be interested in: many companies like these "smaller" works because they fit in well between their large contracts.

37. A 'standard' document, e.g., The Institution of Civil Engineers (ICE), 'Minor Works' or Edition V of 'Civils', is recommended.

Invitation to Tender

38. Below are a few clauses from past documents: these are only an indication of what to cover as it will be for the client to decide based on local knowledge and the aims of the works.

39. The document should start with a clause along the lines of, "Failure by a Tenderer to comply with this specification may invalidate his/her tender".

40. the client should insist on a conducted site visit and state this is given in good faith with a clause stating "the information given is as accurate as possible based on existing drawings and records". The client may also wish to add something similar to: "The Tenderer should note that because of the history of the waterway, records of the physical structure of the waterways are not complete and may not be up to date". Costs incurred attending the site visit will be solely the Tenderer's responsibility.

41. Other suitable clauses are as follows:

42. "Where sampling and testing for contaminants has been commissioned the results are enclosed. Any information shown in these documents and surveys is given without guarantee of sufficiency but what is given is believed to be accurate within the generally accepted limits of the procedures and tests. Interpretation of the information is entirely the responsibility of the Tenderer.

43. "The Tenderer is free to carry out surveys, sampling and analysis prior to submitting a tender. These or similar activities shall only be carried out with the prior permission of the Client. The issuing of permission shall not place any responsibility whatsoever upon the Client or any waterway authority (if appropriate) for the consequence of such activities by the Tenderer.

44. "Tenderers are reminded that many structures are very old and working alongside or around them can be hazardous. The Tenderer must make himself fully away of the safety measures and precautions necessary for him to fulfil his obligations under the contract before submitting a tender. In addition, due to the great age of many structures, particular care must be exercised to avoid damage to them". (Add here any particular structures you may have concerns over, e.g., weak bridges that plant should not cross).

45. "It is a condition of the contract that the successful Tenderer will be deemed to have visited the site prior to the submission of its tender and no claim against the Client based on the Tenderer's failure to do so will be considered.

46. "Information to be supplied by Tenderer. It is a condition of the contract that the Contractor shall transport and dispose of all wastes removed under this contract strictly in accordance with the requirements of the Environmental Protection Act 1990, the Waste Management Regulations and the Duty of Care Code of Practice.

47. "Acceptance of Tenders. The Client does not bind itself to accept the lowest or any tender, or to defray any expenses in connection therewith.

48. "Period of acceptance. The tender is to remain open for acceptance for a period of 30 days from the tender return date".

Schedule

49. This includes the description of the work to be carried out with details of discharge sites and permissions granted. If the waterway is navigable does it have to remain navigable during the Works?

50. Should the contractor use the works for his own publicity? Should he, or anyone acting for him be prevented from publishing any information, drawings or photographs, or allow any

journalist, photographer etc. to obtain any such information or material concerning the works without the client's written consent which would be subject to any conditions laid down? If so, a clause to prevent such publicity should be included.

51. On a similar note insist that the contractor has to seek the clients approval for any notices or hoarding at the site.

52. The contractor should provide continuous supervision of the works by a competent person. The supervisor may not be substituted or removed without the written agreement of the client. Details of the numbers and grades of all staff and labour, quantities and type of plant on site to be provided by the Contractor by a certain time each week for the previous week.

53. If a nearby drinking water tap is not readily available the contractor should be given the job of having a supply run to the site with necessary drainage.

54. The client should consider whether to make the contractor liable for providing any equipment for the client's use, such as a boat and sounding pole to enable checks of the work done.

55. If the client wishes the Contractor to submit a written weekly progress report, then this should be stated under the Specification.

56. **Materials and workmanship**. This section is where the client states that the dredging is to be carried out over the area specified on the drawings to the specified depth in material and to the slopes at the limits of dredging as shown on the drawings or as directed by the Client. "The works are to be executed in sections in such a manner that the work can be accepted within a reasonable time of its completion. The Client's representative will make their survey of each section as soon as possible after the contractor has advised him that, in its opinion, dredging of the section is completed. Should any high spots be found the Contractor shall return to remove them as instructed. All debris, solids and other materials arising shall be removed to a licensed waste disposal site".

57. It is also worth adding a clause to cover spots where the drawings show the existing level to be lower than the proposed new profile. The contractor will be earmarking these places to push silt into, hence saving him muck-away costs, a saving you will not benefit by. Any low spots should not be filled in in this way, as natural slippage needs a place to go and we are aiming to have as much depth of water as possible.

58. **Survey and soundings**. Specify that the works in each area prior to being signed off should be demonstrated by means of sounding across the required profile to have been carried out to the required lines and levels. It should specify at what intervals this should be done (usually those matching the profile marks, so you have something accurate to compare with). These should be carried out in the client's presence. The right to order sweeps or sounding at any time should be reserved.

59. Dredging should be measured in lengths of canal as shown in the bill of quantities.

60. The contractor should be required to execute a sweep and collect floating debris along the full length of the works before the issue of the final signing off certificate. The Schedule should note that the dredging will disturb debris previously buried in the canal bed which may subsequently float.

61. **Pollution**. The Contractor should be required to take all necessary precautions to prevent pollution to all rivers, streams, watercourses, drains etc. Anything, which has the potential to be damaged, should be described.

Form of Tender

62. This is simply a form on which all companies who are tendering for the works will enter the fixed price sum they will do the works for. By producing a form, rather than letting them write individual letters, essential wording can be included, e.g. that the price given is to remain open for acceptance for a given number of weeks.

Site Investigation Information

63. These enclosures are copies of the profiles, any written information from the Surveyor, soil sample results and a map identifying the location of the site.

APPOINTMENT OF THE CONTRACTOR

64. In their tender responses the contractors will have detailed how they will carry out the works. This will influence the selection decision together with price. The contractor winning the contract will be notified in writing and asked to provide written confirmation of accepting the work and confirm a start date.

65. When the client has the contractor's written acceptance and is satisfied with progress, he/she will then write to the other companies who tendered informing them of the tender decision.

66. Before the appointed contractor begins work the client should arrange a site meeting when you can discuss any further details and their plans for moving on site. At this time the client should obtain the office and mobile phone numbers of the contractor's staff responsible for the work.

67. The client should ensure that the firm being appointed will be the one doing the work. It is not unknown for a sub-contractor to be appointed and for no-one to mention it until someone queries why all the plant has another company name on it.

SUPERVISION OF WORKS

68. Ideally supervision of the site should be constant. However, if the client is restricted to short visits every day, the time of visits should be varied so they cannot be anticipated and any problems covered up.

69. The client should make sure a phone number where he/she can be contacted is displayed in the site office. He/she should decide if there is a time when he/she does not want to be contacted. For example, if the contractor is called out because one of their boats is on fire at 2.00am does the client want to be informed at the time or at 9.00am? Whatever is decided, it should be emphasised that if they have any queries or problems the client is only a phone call away and will help them.

70. It is inevitable that some problems will occur when the client is not around. This is when a good relationship with the people doing the actual work pays dividends: they will say if there have been any problems in the client’s absence.

71. Equipment breakdowns will probably occur at some stage; the contractor must make a note of when the plant goes down and for how long. If it is frequent you may be able to get some compensation for overrunning. This, of course, depends on there being a suitable clause in the contract.

Appendix A

Example of a Species List drawn from an Ecological Survey

English Name	Latin Name	% of London	
1 Annual meadow-grass	Poa annua	99.50	
d Annual mercury	Mercurialis annua	74.00	
1 Ash	Fraxinus excelsior	100.00	
1 Bittersweet	Solanum dulcamara	98.75	
1 Black horehound	Ballota nigra	98.50	
1 Bramble	Rubus fruticosus agg.	99.75	
d Bristly oxtongue	Picris echioides	34.25	
1 Broad-leaved dock	Rumex obtusifolius	99.50	
e Buddleia	Buddleja davidii	73.50	
e Canadian fleabane	Conyza Canadensis	88.50	
1 Cleavers	Galium aparine	93.00	
1 Cock's-foot	Dactylis glomerata	97.25	
1 Common chickweed	Stellaria media	99.50	
1 Common comfrey	Symphytum officinale	23.75	
1 Common mallow	Malva sylvestris	96.75	
1 Common nettle	Urtica dioica	100.00	
1 Common water-crowfoot	Ranunculus aquatilis	3.25	
Cotoneasters	Cotoneaster spp.		
1 Cow parsley	Anthriscus sylvestris	98.50	
1 Creeping bent	Agrostis stolonifera	89.00	
1 Creeping thistle	Cirsium arvense	100.00	
1 Cut-leaved crane's-bill	Geranium dissectum	67.25	
1 Daisy	Bellis perennis	99.50	
1 Dandelion	Taraxacum sp.	100.00	
d Dwarf elder	Sambucus ebulus	1.75	
1 Elder	Sambucus nigra	100.00	
1 False oat-grass	Arrhenatherum elatius	99.50	
e Feverfew	Tanacetum parthenium	73.00	
e Fig	Ficus carica	9.50	
e Flowering currant	Ribes sanguineum	2.25	c
1 Goat willow	Salix caprea	67.75	
1 Great reedmace	Typha latifolia	26.75	
1 Great willowherb	Epilobium hirsutum	99.25	
1 Greater plantain	Plantago major	100.00	
1 Groundsel	Senecio vulgaris	99.50	
e Guernsey fleabane	Conyza sumatrensis	0.00	
1 Gypsywort	Lycopus europaeus	44.00	
Hawkweeds	Hieracium spp.	g	
1 Hedge bindweed	Calystegia sepium	100.00	
1 Hedge mustard	Sisymbrium officinale	98.75	
e Horse-radish	Armoracia rusticana	92.25	
1 Ivy	Hedera helix	95.00	
1 Lesser burdock	Arctium minus	92.00	
e Lucerne	Medicago sativa	9.25	
1 Marsh foxtail	Alopercurus geniculatus	29.50	
e Michaelmas daisy	Aster spp.	86.75	
1 Mugwort	Artemisia vulgaris	99.75	
1 Oxeye daisy	Leucanthemum vulgare	83.00	
e Oxford ragwort	Senecio squalidus	99.00	
1 Pale persicaria	Persicaria lapathifolia	54.00	
1 Perennial rye-grass	Lolium perenne	100.00	
1 Red clover	Trifolium pratens	98.25	
1 Red fescue	Festuca rubra	75.00	
1 Reed sweet-grass	Glyceria maxima	27.50	
1 Ribwort plantain	Plantago lanceolata	100.00	

1 Rough meadow-grass	Poa trivialis	86.25
1 Scentless mayweed	Tripleurospermum inodorum	94.75
1 Shepherd's-purse	Capsella bursa-pastoris	100.00
1 Smooth sow-thistle	Sonchus oleraceus	99.50
1 Spear thistle	Cirsium vulgare	99.75
e Spotted dead-nettle	Lamium maculatum	37.25
e Sycamore	Acer pseudoplatanus	100.00
1 Wall barley	Hordeum murinum	98.75
1 White campion	Silene latifolia	76.00
1 White clover	Trifolium repens	100.00
1 White dead-nettle	Lamium album	99.50
1 White willow	Salix alba	22.50
d Wild radish	Raphanus raphanistrum	40.50
1 Yarrow	Achillea millefolium	100.00
1 Yellow iris	Iris pseudacorus	39.25
1 Yorkshire-fog	Holcus lanatus	98.50
1 Zigzag clover	Trifolium medium	26.25

The status of each species is:

1	=	native to London
d	=	doubtfully native to London
b	=	native to Britain but not London
u	=	doubtfully native to Britain
e	=	not native

The figures given in the column headed "% of London" are an indication of how widespread the species is in Greater London: the percentage of the 400 Greater London 'tetrad' recording units with records of the species in Burton's (1983) Flora of the London Area. The figures give an inflated indication of the distribution of all species, as a single record in one of the recording units suffices for the species to be counted effectively as if present throughout the entire four square kilometres. Some species are difficult to record through being inconspicuous, seasonal, or occupying a difficult habitat, like open water. Nevertheless the gross difference in the percentages represent real differences in distribution. No figure is furnished for plants not mapped in the Flora (such as species that were not fully identified 'g', and lower plants 'l'). Other species produced poorly, or not at all, in London but occur widely in cultivation or as remnants of previous cultivation 'c'; the percentage of these is low as Burton's atlas is confined to natural records.

Choice of Restoration Methods: Modern Versus Traditional Methods

by
Judith A. Grice, Head of Environmental Design and Planning,
Waterway Environment Services, British Waterways

INTRODUCTION

1. The waterways restoration movement in the United Kingdom has a long and distinguished pedigree. However, the rationale for restoration in the past was often a reaction to the prospect of loss or wholesale demolition of waterways rather than seen as a way of carefully conserving the historical fabric of navigations and their associated heritage, social and literary associations.

2. Much energy and effort was expended in bringing the waterways back into water and use for navigation as quickly and as cheaply as possible. Undoubtedly, in the process features of historical interest were lost, traditional techniques and methods of construction ignored or built across, local character and distinctiveness swept away by an often unskilled yet hugely enthusiastic and dedicated workforce.

3. Yet without this important volunteer effort and the motivation of a few waterway enthusiasts many canals would have been lost and the richness of our waterway heritage diminished as a result. Waterways like the Montgomery Canal, the Kennet and Avon Canal, the Pocklington Canal and the Ashton Canal would simply not be there now for people to enjoy for a wide range of leisure and recreational activities.

4. The importance of the inland waterway system as a recreational and heritage resource is now well recognised and the public campaigns of the past to save the waterways from demolition are consequently becoming fewer.

5. With the passage of time has come a growing recognition that there are other issues to consider alongside the wish to simply restore navigation. The heritage value of the waterways is increasingly protected through designation of waterways and their associated structures and buildings as Conservation Areas, Listed Buildings and Scheduled Monuments. Many waterway corridors pass through Areas of Special Landscape character and the ecology and nature conservation value of such waterways and their corridors is recognised through designation as Sites of Special Scientific Interest (SSSI's) and Local Nature Reserves.

6. Such designations highlight the requirement for special care and attention, promoting a change in approach to restoration that is now becoming widespread whether sections of waterway or features to be restored are statutorily protected or not.

7. With the benefit of hindsight too it has been possible to review the early restoration works and assess their effectiveness. Many early schemes simply re-built at a most basic level with materials that came to hand, begged or borrowed. Little consideration could be given at that time to the appearance of the end result or indeed the longevity of the repair. Consequently many works executed in the 1970's and 1980's now need re-doing and at worst may be actually damaging the original fabric of the waterways they were designed to save. There is now a growing understanding and respect for traditional materials, methods and techniques of construction that comprise part of our industrial heritage and have proved their value over the last 200 years which with modern adaptation can be used again to great effect.

8. However, restoration is not just about putting things back as they were. The waterways were robust features that have stood the test of time and seen many changes. The evidence of those changes is a fascinating part of our social history and it is not always appropriate to remove more modern additions and features. Further destruction and deterioration of the original fabric can occur if done badly.

9. The spectrum of potential use of the waterways has also widened. While undoubtedly important for leisure and recreation they also perform other functions such as land drainage, irrigation and flood defence. Constraints relating to such activities have strengthened over the years and the restoration and repair of traditional mechanisms and control structures, for example, may no longer meet stringent health and safety requirements.

10. We must also look to the future and anticipate the value of such waterway networks to a growing population, whether for transporting water and telecommunications, acting as an outdoor classroom or as a catalyst for widespread urban regeneration. All of these issues affect the choice of restoration methods and the extent and type of renewal.

11. A restoration project in the 21st. century is just as likely to be about building new waterways and water bodies to link, strengthen and make viable the current network as about restoring redundant arms and basins. The debate over the last 5 years has become much more strategic and considered in defining where the priorities for restoration lie to ensure that the national network is made secure.

12. We now know an awful lot more about our waterway heritage than in the past. British Waterways has completed its 8 year Architectural Heritage Survey of the 2,000 miles of waterways it owns and manages and is able to make strategic judgements as to what elements of its heritage are special and worth retaining and what are not. Other navigation organisations need to make similar assessments, balancing operational and heritage criteria, in order to be clear what choices to make.

13. The sections that follow do not offer a prescription for certain types of restoration work. Rather they serve to offer guidance on the overlying principles, culture and thought processes that should influence the planning and execution of any restoration project. It really is the case that each project must be judged on its merits.

Basic Restoration Principles

14. *Principle 1*: When working with historic environments a **conservation led approach** and culture needs to be adopted. The underlying history and heritage of the waterway is part of its value and this can be explained and used to great effect in the development of the waterway for leisure and recreation as well as provide an important archive. Research into the structure, its use, its historic setting and development and records of past repair can help in determining future methods and techniques for restoration.

15. *Principle 2*: **Problems and defects** should be identified and monitored before proposing remedies: this may save money and effort in the long run and avoid the unnecessary destruction of waterway fabric. Experienced staff and contractors are needed to inspect and undertake this task. There is no substitute for informed analysis.

16. *Principle 3*: Where waterway features are to be restored a process of **minimal intervention** should be adopted in order to conserve as much of the sound original fabric as is practicable. All sorts of issues affect this judgement which must be made by an expert in this field, balanced by wider business objectives. Opportunities may arise to remove past inappropriate repairs taking into account the desire to achieve a uniform appearance against the loss of historical integrity.

17. *Principle 4*: When preparing cost information for the restoration and repair of waterways, the maintenance and repair cycle of such features must be taken into account as part of the **'whole life costs'** of the project. Some conservation materials, methods and techniques may seem costly at the outset but can be cheaper in the long run requiring less maintenance.

18. *Principle 5*: Traditional restoration projects have been led by technical experts, often engineers, concentrating on the built fabric of the waterways alone. Modern restoration projects require a **multi-disciplinary professional team** including key personnel in heritage, planning and landscape design, architecture, ecology and environmental science, community use and involvement, PR, market research, water resources and development as well as engineering.

19. More often the restoration project is about the regeneration of a waterway **corridor**, of which the navigation is just one part involving the planning and design of land and water, services and facilities and new income earning opportunities that can enhance the local economy.

OPTIONS AND CHOICES

20. It is not possible to be specific about the options and choices of techniques to deploy on a restoration project. Each situation comes with its own unique history, making research and investigation important even for works that have already been 'restored' and where further work is planned. The following issues have an important bearing on decisions.

Status

21. Whether the structure or section of waterway to be restored is protected by statute or not, its significance should be checked. Many waterway structures are Listed Buildings or Scheduled Monuments. The former require consent from the Local Authority and the latter from English Heritage, CADW or Historic Scotland. The Local Planning Authority Conservation Officer should be contacted in the first instance. Permission will only be given if it can be demonstrated that the works are to be implemented to best conservation practice. Clearly, evidence of research, surveys, detail drawings and method of construction need to be described, together with proposals for future care. A planning consent may have to be negotiated, applied for and given before any works begin. It is worth remembering that any works 'that affect the setting' of a listed building will also need consent. Any unauthorised work is a criminal offence and could be subject to a fine or prison sentence.

22. In addition, a wide range of other statutory and non-statutory designations can affect the choice of restoration method. Many waterways are also Conservation Areas, occur within Areas of Special Landscape, over archaeological remains and within Sites of Special Scientific Interest or Local Nature reserves. The nature conservation interest of redundant waterways can be a difficult constraint to overcome without destroying the ecology of the waterway. Special techniques may be required to protect and conserve species, with new areas of conservation value developed in advance of the removal of any current interest. This applies to creation of new habitats for both plants and animals e.g. bats, voles, wetland etc.

23. Government guidance (PPG 16) makes it clear that archaeological evaluation and possibly recording may be required of restoration/alteration works in the historic environment. It is important to select a properly qualified archaeologist who is above all experienced in assessment of industrial archaeological remains. Such an approach is common in the USA and Canada in particular.

Character and Distinctiveness

24. The amount of the original fabric of the waterway that has survived intact, including frequently overlooked features such as paddle gear and bollards, gives the waterway its individual character and provides direction to the nature of the restoration and choice for re-construction.

Brynich Aqueduct, Monmouthshire and Brecon Canal prior to work taking place

Brynich Aqueduct, following completion of the works in 1997

If much of the original fabric has been destroyed and little remains then the opportunity may be taken to re-build in a modern idiom and create a new waterway character. Retention of the few original relics may be important however, as evidence of early historical waterway development. More usually, the waterway displays many original features. In such situations it is important to look at the whole waterway strategically and make a judgement, with the

support of the Local Authority Conservation Officer, as to which sections should be restored in a traditional manner and which could be reconstructed using modern techniques, methods and design. It is not always the case that reconstruction should be to a 'roughly traditional' design.

25. Similar judgements have to be made for individual features requiring restoration. For example, an accommodation bridge which has lost one parapet but is otherwise soundly constructed of early 19th century bricks will require the rebuilding of one parapet in an appropriately matching brick with a lime based mortar. A completely derelict bridge will need reconstruction to an approximately traditional design, probably using modern materials: a semi-engineering brick, a reinforced concrete deck, with possibly a 'compo' mortar mix, e.g.1 (lime): 1 (cement): 6 (sand). Similar assessment of, for example, a lock will need to be made and every structure must be judged on its merits, defects and circumstances. It is important that the design and materials of any new structure is of a high quality.

26. On balance, there should be a presumption in favour of the retention of historic fabric wherever possible although health and safety issues are always a prime consideration.

Condition of the Structure

27. A full assessment of the physical condition of a structure will need to be made before any works are planned. An understanding of how the structure was constructed and used is important in diagnosing defects. Periodic re-building and re-assembly may have taken place and this should be noted. The following criteria should be considered:

- What is the extent and historical value of the existing structure?
- What are the problems?
- What kind of interventions are necessary?
- Will temporary works be necessary?
- Does the structure stand on or contain contaminated matter?
- What kinds of repair/maintenance have previously been performed?
- What kind of demountable equipment (e.g. lock gates, paddle gear) survives and what will need to be returned to or replaced on the structure?

Location

28. The location of the restoration project and its accessibility will have a bearing on the choices of techniques and methods used. For example, in an urban location vandalism and damage will influence the phasing of works and choices of (quick setting) mortars. In an urban location also, issues relating to safety become more critical with potentially greater numbers of people to consider. The need for handrails is a common consideration. In an urban location a structure or site intended for restoration may stand upon or contain contaminants (e.g. a buried lock chamber). Due consideration must be given to this and site investigations may be necessary before works begin.

29. Costs may increase due to the need for double handling of materials if a site is remote from good vehicular access. Inaccessibility to large equipment may justify the need for hand work which could favour traditional restoration techniques. Some of these costs may be offset by the use of volunteer labour.

30. Removal of material from site can be expensive and difficult at remote sites. Legislation may require special disposal of contaminated material.

31. Sites which have been remote and undisturbed for many years may be rich in conservation value and their alteration may be greatly resisted by the local community and the Local authority.

Use and Prospect of Use

32. The best purpose for an historic structure is the purpose for which it was originally built. Where only partial restoration of a structure is carried out (e.g. a pumping station) regular maintenance and monitoring will be required. Where complete restoration is contemplated it should be remembered that the hidden parts of an historic structure are as important as its visible parts. Listed building protection covers the whole structure and its historical curtilage and setting, alterations or even 'opening up' of the structure. In restoration work the following criteria should be considered:

- What has the structure had to do in the past and how well has it survived?
- Are unnecessary changes of use being considered?
- Will proposed works involve removing historic fabric?
- Will restored elements or alterations alter load paths?
- Will new strengthening elements be necessary and how will these alter the appearance of the structure?
- Can major changes be avoided?
- Will the original character be maintained?

33. In addition, it is often overlooked that the waterways were not generally built for powered craft and that restoration will inevitably attract increasing numbers of such craft. While boating is not now considered to be the sole reason for restoration, the impact of increased numbers of boats on traditional bank protection, canal bank profiles, vegetation and other structures (requiring fendering and safety barriers etc.) needs to be borne in mind.

34. Health and safety requirements can have a great impact on the shape and character of original structures. For example, bridge parapets for pedestrian use may have to be raised and made solid to meet current standards, and bridge decks may have to be strengthened, altering the mass and appearance of a bridge.

35. Decisions have to be made as to how much access the public will be allowed to historic structures both during re-construction and after the work has been completed. A risk assessment should be part of the research and early survey work on the project.

36. Restoration of a structure often involves adaptation in order to gain satisfactory use and benefit. But alterations should always be in sympathy with historic fabric. Wherever possible, new elements should not replace originals and if they must, then they should follow the original pattern and design. Good practice requires alterations to be in character yet identifiable as part of the historical development of the structure.

Skilled Craftsmen and Professionals

37. Restoration work demands extensive planning and project management skills, given the unpredictable nature of works which are frequently below ground. Good preparation and investigative work helps in this respect. Experience and understanding of historic buildings/ structures and the way in which they perform is essential. Expertise is needed to decide whether distortion or cracking represents a current problem or not. Expertise is also needed to design and carry out sympathetic repairs to historic fabric. An ability with modern materials and boundless enthusiasm is not enough. In addition to a full historic assessment the following may be required:

- survey and monitoring of structural movement

- geophysical survey of local ground conditions
- archaeological and environmental assessment.

38. Equally important is the availability of craftsmen and contractors with proven skills in conservation techniques and methods of construction. Such skills should be verified and past experience and evidence of practice sought before they are deployed on sensitive tasks.

39. There is enormous scope for good conservation training courses and practical training workshops as part and parcel of restoration projects; the development of such skills can be a very rewarding output from the scheme, an investment that can benefit future projects. British Waterways is developing such practical courses throughout the country over the next 3 years.

Availability of materials

40. Careful survey and investigation should reveal a substantial amount of masonry material and original copings etc. in the bed of the waterways or buried beneath old fill material and dredgings. Such finds should be recovered and cleaned for re-use and only then new or second hand materials sought to effect the restoration. Volunteer labour can be a cost-effective way of recovering such valuable materials. For remote sites the transport of new materials into the working area can be very disruptive to the wider environment and cause almost as much damage as the works themselves. It makes sense to re-use materials recovered from the site itself.

41. Once such options have been explored, then careful selection of new materials is the next consideration. Where specials and other unique features are required these should be well researched and sourced where possible. While it is not the intention to replicate original materials (it is considered good practice to be able to recognise the original from the new in a repair or reconstruction), the quality of the new materials, and the construction must be to a high standard. Frequently the higher cost of quality materials can be justified on the greater longevity and performance of the work into the future, keeping maintenance costs to a minimum.

42. Compatibility of materials is extremely important, for example, incorrect mortar choice can result in accelerated decay of historic fabric, whilst some metals may cause chemical reactions upon adjoining materials. Any new detailing will need careful consideration so as to avoid unsightly staining or erosion of surrounding areas.

43. Researching suitable materials takes time with special or rare materials frequently having long lead in times for production and delivery.

Funding

44. Many early restoration projects were constrained by the limited money available to do the works and decisions often revolved around whether to spread the cash thinly and achieve as much as possible so that the work could be used as a visible model to attract further funding or concentrate on repairing the work substantially. Inevitably the former prevailed but the danger always existed that the work would deteriorate quickly and again fall into disrepair and long term damage could be the result.

45. With the advent of Heritage Lottery funding and other UK and European grant funds, it is now possible to include the cost of essential surveys and investigations within the overall budget for the works, appoint the necessary specialists, undertake training and properly plan for good conservation repair and restoration.

46. Such funding has necessitated the broadening of restoration projects beyond simply repair and restoration; to qualify for funds other social, community, leisure, recreational, economic and employment factors have to be considered as part of the scheme of things. While more complex to implement, such multi-faceted projects have the advantage of being attractive to other funding sources also.

47. A perennial issue, however, is the availability of funding for on-going maintenance of a restored waterway with many grants geared to the provision of capital funds only. Finding revenue for future care is difficult for many organisations to commit to, despite the overwhelming support for the project. Without such funding, however, it is questionable if the project should proceed except in very small ways. Phasing and timing of works and the scope and design of works has to reflect this problem balanced against the prospect of continuing decay of structures that are left unrepaired.

48. Sustainability of the project is important and a multi-faceted scheme that looks at economic regeneration and income earning development has to be part of the long term equation.

CASE STUDIES

49. The three case studies that follow each demonstrate an approach to restoration and repair and serve to illustrate the points raised above. They should not be seen as a model for future works as every site and circumstance is unique but they can offer pointers to the degree of thought, consideration and care that needs to be built into the restoration process.

A. Brynich Aqueduct- Monmouthshire and Brecon Canal

50. Brynich aqueduct is a c 18004 span, 50 metres long masonry arch structure that had been repaired extensively over the years with rebuilt spandrel walls and arch barrels and the construction of supporting brick arches beneath two spans over the River Usk. Most elements of the structure showed signs of movement and deformation with leakage an on-going problem.

51. Loss of mortar from joints and the weakening of clay fill, associated with leakage and ground water, was contributing to an overall weakening of the aqueduct. The decision was taken in 1996 to carry out a £500,000 repair to the structure over a 6 month period, in 1996/7.

52. Particular issues considered were:

- the location of the structure in the Brecon Beacons National Park and its potential landscape impact,
- its Scheduled Ancient Monument status (requiring consent for the works from CADW),
- the presence of protected bat species in the soffits of the arches (Daubenton's and Pipistrelle),
- impacts on the operation of the navigation,
- impacts on water quality of the canal and the River Usk below,
- impacts on fish and other wildlife, including dippers,
- variable river levels,
- approval of Environment Agency.

Options

53. Fill material had to be replaced within the aqueduct in order to relieve internal pressures on the spandrels and side walls. However, the masonry structure was not strong enough to allow this without structural support. Temporary support from below was ruled out due to difficulties of timing and risk of flooding. A system of grouting and anchoring was adopted to strengthen the arches and piers which then allowed concrete fill to be placed working from 'within the structure'. Excavation of fill material and replacement with concrete was undertaken in carefully controlled stages.

Restoration Issues

54. Great care was taken with the choice of mortar. A hydraulic lime based mortar was used to allow the structure to breath and allow limited movement, with particular care taken over the pointing detail. This was an important issue for CADW. They inspected the method of raking out and removal of the old mortar and required test panels of the proposed materials to be used.

55. A full photographic record was taken of the structure pre-works, this being a requirement of CADW.

56. Artificial bat roosts were designed and provided on the completed structure. The design suggested by the Countryside Commission for Wales was modified to suit the requirements of CADW to offer greater concealment within the arch barrels. It is understood that they have been used in their first season following completion. Consultations and advice was sought from the Brecknock Bat Group. A further 4 roosts were provided for the dippers.

57. All the necessary consultations and research were carried out well in advance of the need to obtain formal consents for the works and the contract works proceeding, which undoubtedly smoothed the way of the project.

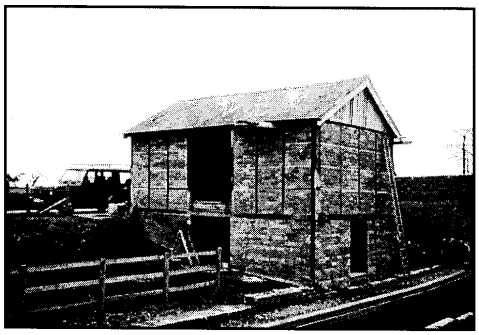
B. Rednal Warehouse - Montgomery Canal

58. The Listed timber framed transhipment warehouse at Rednal had been decaying for many years. The objective was to arrest the decline and carry out sufficient work to rescue and repair without prejudicing any future use of the building. There was a very real danger of the building falling into the canal.

59. Particular issues faced were:

- a limited budget (£40,000),
- major settlement, some attributed to adjacent engineering restoration works on the channel,
- a confined working space, restricted by the proximity of the road and canal and a steep embankment to each side,
- risk of total collapse if the scaffolding was moved indiscriminately,
- how to maintain the structural stability of the building while removing sections of the lower fabric for repair.

Rednal Warehouse, Montgomery Canal, showing the extent of leaning and settlement prior to work taking place



Work nearing completion

Options

60. The building was not what it seemed! Research and investigation revealed a different structural form to

that originally thought. As such a decision was taken to adopt a method that removed the more recent slate roof allowing easier access to the timbers and brickwork for repair.

Example of building deterioration

61. An innovative technique was of 'racking' the building and pulling it back to plumb with winches was adopted, thus propping the building and allowing repair 'in situ'. Mini piles were used to underpin the building within the confined spaces next to the canal.

Restoration Issues

62. A sympathetic repair strategy based on site and structural investigations was created early on in the project. English Heritage were invited to agree the method and approach at this stage.

63. It was decided to use proven traditional techniques for the structural timber repairs, scissor scarf joints to the posts etc.

64. Reclaimed bricks and timbers were used, with a lot of effort given to sourcing of suitable materials.

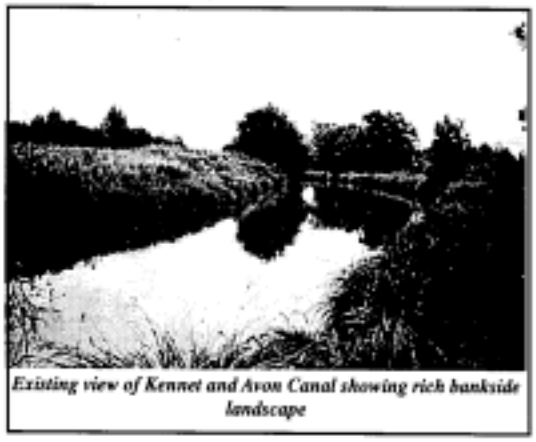
65. A contractor with proven conservation and historic building skills was employed to undertake the works. A clear brief was created for the specialist consultants to supervise the works, involving the client fully in the process. Any problems arising on site were referred back to the client project team for decisions.

66. Close liaison was maintained with the Local Authority Conservation Officer throughout the life of the project.

C. Relining and Edge Treatments - Kennet and Avon Canal

67. While the Kennet and Avon Canal was restored to navigation in the 1980's further works are still required to safeguard the future of the waterway and ensure public safety. In 1996, the Kennet and Avon partnership was awarded £25 million from the Heritage Lottery Fund to restore the canal as an historic working waterway.

68. The canal embankments present a major instability problem caused by poor drainage and leakage from the canal. Elsewhere, the base and walls of the canal have undergone a general deterioration due to erosion by boat traffic. As a result extensive relining of the canal is necessary.



Existing view of Kennet and Avon Canal showing rich bankside landscape

70. The Kennet & Avon Canal is characterised by soft waterway edges, often fringed by marginal plants or overhanging vegetation. The sinuous river-like character of the canal forms a distinctive waterway landscape and valuable ecological resource. The challenge will be to conserve the special character and biological diversity, whilst safeguarding its future by undertaking engineering and dredging works

Two very different sites and solutions are described below:

Bath Valley

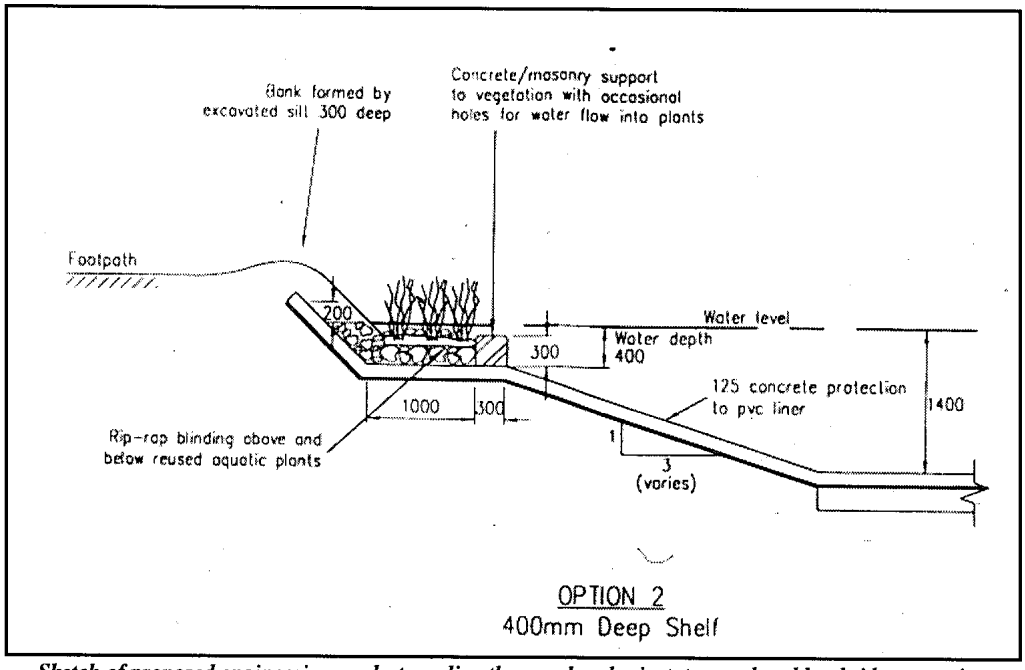
71. Three methods of lining were considered: Bentonite, PVC/concrete and Puddle Clay and the environmental pros and cons considered.

72. Bentonite avoided the potential risk of introducing chemicals into the environment and offered a more natural edge to the canal. However, it required extensive excavation and heavy plant with corresponding adverse traffic generation.

73. PVC and Concrete need less excavation and fewer lorry movements and imposed lower loads on (unstable) slopes. The edge details and bed conditions are very harsh, preventing colonisation of vegetation. PVC could leach into the environment.

74. Puddle clay offered a traditional solution that would have allowed colonisation by voles and vegetation but was very expensive, required large amounts of material to be excavated and was vulnerable to future erosion and leakage.

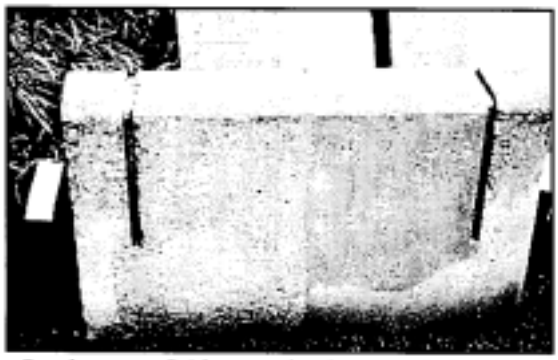
75. It was finally agreed that the PVC and concrete lining solution was the best option, considering that slope stability is the main problem along this length and that softer edge details could be designed.



Sketch of proposed engineering works to re-line the canal and reinstate canal and bankside vegetation

76. Particular issues addressed for the canal edge treatment were:

- impact on emergent aquatic vegetation and shallow margins which provide habitat for invertebrates, fish, birds, mammals,
- impact on known water vole habitat; need to maintain suitable burrowing conditions and food supply,
- need to maintain crossing points for local badgers and provision of escape points along restored towing path wall for animals in the water,



Sample concrete finishes to analyse for potential edge copings

- re-use of towing path bank topsoil in towing path bank restoration to encourage recolonisation by local species,
- protection of trees and hedges along the line of works,
- use of appropriate materials,
- use and recycling of existing materials.

77. The proposals include for 3 different offside shelves for marginal aquatic habitats. A towing path shelf is to be included where width of channel allows. This will address issues of boating and pedestrian safety and encourage an attractive visual appearance following engineering works.

78. Existing emergent aquatic vegetation is to be removed and stored to be replanted along the shelves as part of the restoration.

79. Part of the design includes for artificial vole banks. Voles will be removed before works take place, kept at facilities in Slimbridge and released after habitat re-instatement. Monitoring will take place.

80. Coir rolls will be used along some wider shelves to assess how they can withstand increased boat traffic, acting as a pilot for future restoration.

81. Badger paths across the canal will be maintained with temporary crossing points created for the duration of the works and permanent animal escape ramps will be built into the restored towing path.

82. Contract documents contain specific requirements relating to the built and natural environment.

Martinslade Embankment

83. Three options have been considered to arrest the leaking embankment:

- Steel sheet piling cut-offs,
- PVC and concrete,
- Bentonite geotextile.

84. Steel sheet piling was chosen as it allows most of the canal to be in water during construction, soft banks and their vegetation remain undisturbed and the structure is hidden from view. Where moorings are planned the piling is capped with timber. Silencers are to be used on all construction plant.

85. Underlying geology has proved suitable for this option which has significant environmental advantages over lining options.

86. The chosen method using piling in the towing path and the centre of the offside embankment is unlikely to directly affect either the water vole burrows or the animals' food supply. The action of piling may cause some disturbance when adjacent to burrows. As at Bath Embankment, the water vole experts, Wildlife and Countryside Recreation Unit are being engaged to make a pre-works population assessment and to monitor the voles after the works are complete. Radio-tracking of animals during works is being considered. This project provides the opportunity to gather data on the impacts of the technique which may prove generally useful.

87. A small area of adjacent land between the canal and the disused railway land forms a valuable wetland. It is thought to be largely dependent on canal leakage and the project allows some provision of water to this marsh.

THE IMPORTANCE OF DESIGN AND INNOVATION

88. Most restoration projects now employ a wide range of professionals with an extensive range of skills. With so many issues to consider, a balanced approach can only be achieved if all interests are taken into account.

89. Important to this process is the role of the designer. If restoration schemes are to appeal to and benefit the public then a vision of the future as well as the past is required. It is the role of the designer to look beyond the obvious and introduce features that will create a new heritage for the waterways, one which respects the past but responds to a new generation of waterway enthusiasts. In this way it may be possible to introduce methods or materials that are entirely unconventional and innovative. Such intentions should be respected but carefully evaluated, particularly if the methods suggested are structural, untested or untried.

90. Design influences can be felt in many small ways: the care taken in the re-design of a replacement hinge on a gate, using modern materials in an environmentally sensitive way, or the introduction of incidental public art in the landscape. The aim is to enrich and develop the waterway experience.

91. Artists, architects, landscape architects and craftsmen have much to offer a restoration project team.

CONCLUSION

92. The most interesting developments in recent years have been not necessarily to seek modern materials and methods of working for restoration work per se, but to understand fully the reasons why and on what basis traditional canal structures and buildings have survived until the present day and use such research to guide future repair and restoration. With the recognition of the value of historical research comes the realisation that strategic and contextual issues are just as important as structural ones to the restoration movement.

Leisure Facilities on the Towpath

by
Andy Screen

INTRODUCTION

1. It is increasingly difficult to keep hold of the fact that when canals were originally built, it was essentially for the single purpose of shifting freight from A to B; a navigable water channel with a rough towing path for the horse and his 'boy'. Only a few waterways in the United Kingdom (albeit not insubstantial ones) are now used for freight, and waterway restoration is almost entirely aimed at leisure and recreational use.

2. It is equally a fact of life that our waterways are no longer restricted to boat traffic. There are substantial pressures - financial, economic, environmental and social - to maximise the use of the inland waterway infrastructure way beyond the aspirations of the burgeoning restoration movement of the late 1940s, let alone the original canal pioneers. More leisure time due to an increasingly mechanised and computerised workplace; traffic-congested cities; increasing public accountability and financial self-sufficiency of local authorities and quasi-nationalised industries such as British Waterways (BW); destruction of wildlife habitats through green belt development; these pressures and others mean that the often rarified atmosphere of the canal corridor can no longer afford the luxury of a narrow, waterborne, user base.

3. It is against this background that those who wish to restore our disused and abandoned waterways to navigation have to operate. Restoration - whoever undertakes it - inevitably needs public sector finance and that means public accountability. Public accountability means not only balancing the books in the medium to long term, but also meeting such non-financial objectives as government at local, national and European level deem appropriate.

4. Bringing boats back to the canal will rarely be enough. The towpath network offers opportunities to increase revenue flows post-restoration (albeit usually only marginally to the canal owner) and meet a number of other social and environmental objectives. Improving the towpath network for varied recreational use is therefore increasingly a prerequisite to securing the funds necessary to complete a restoration.

5. This chapter looks at the three principal users of the towpath network - walkers, anglers and cyclists; why they need to be considered and how their needs can be encompassed in the restoration project. Many such users will be boaters for whom their activities on the towpath will be secondary to their principal reason for using the waterway - no distinction is made between primary and subsidiary activities as improved towpath facilities can be expected to attract more non-boaters and boaters alike. This chapter also considers wheelchair users, and suitable suggestions are made as to how such users can be accommodated.

6. In 1990, the IWA issued a Towpath Policy [1] which covered both the design and maintenance of towpaths. Insofar as this chapter only covers the first of these areas, it is not intended to be a replacement for that Policy, but where alternative design standards are proposed, the author would hope that such proposals would be incorporated in any future revision of the Policy.

7. The use of the words ‘canal’ and ‘waterway’ can be regarded as inter-changeable in what follows - other than possible statutory differences between man-made canals and navigable rivers, the basic considerations are the same.

But first ...

THE LEGAL POSITION

8. When canals were originally built, the navigation companies bought sufficient land to allow for the construction of a towpath alongside the water channel to allow for towing by horse, bow-hauling by manpower and for general maintenance purposes. Generally the navigation company would have been under no obligation to maintain the towpath in a serviceable condition other than for those purposes, but will occasionally have issued their own bye-laws covering permitted third party use of the towpath.

9. In isolated cases a right to tow craft from the towpath was created either by statute (e.g. the Thames Conservancy Act 1932) or by custom, use or prescription, but this is distinct and separate from any right to use the towpath for other purposes [2].

10. As horses gave way to motor power, towpaths were eroded by propeller wash. As a continuous path was no longer essential to the operation of the waterway, standards of maintenance declined.

11. When the State took over the principal waterways still operating at the end of the 1940s, the legal position did not substantially change; the 1968 Transport Act which set out the State’s commitments to the waterways in its charge, placed on them no obligation to maintain the towpath, for walkers, cyclists, horses or anyone [3]. The 1995 British Waterways Act goes little further, though there is a general requirement to promote recreational access of all kinds to the network and BW do have their own internal standards for towpath specifications. The position on waterways operated by the Environment Agency (EA) and the Broads Authority is similar to BW canals, though those bodies do not have the same degree of ‘ownership’ of their waterways and are consequently less able to influence the state of the towpath.

12. Waterways still in private ownership are not affected by the 1968 or 1995 Acts and, apart from any subsidiary powers of EA in terms of flood control, the position on their towpaths remains unaltered.

Right of Way or Permissive Path?

13. In consequence, the majority of canal towpaths in the UK are regarded by the relevant canal owner (usually but not always BW) as permissive paths; their use being entirely at the behest of the owner of the land over which they pass. The landowner, who will invariably also own the canal bed itself, has the right to allow or disallow public access for whatever purpose. The landowner may enter into a formal agreement with say, an angling association or a local authority, which may

restrict his powers to withhold access for a particular purpose but this does not generally alter the statutory position.

14. In fact, many lengths of canal towpaths were designated as ‘definitive rights of way’ under the National Parks and Access to the Countryside Act 1949, much of which is now consolidated in the Wildlife & Countryside Act 1981 (WCA81). On these paths, the public have a statutory right to walk, every day, at any hour of the day. The highway authority (see paragraph 23) is legally obliged to maintain the path for that purpose; they may sub-contract out that task, for example to the landowner or navigation authority, but the statutory responsibility for maintenance remains with the highway authority. It should be pointed out however that the existence of a right of way on the definitive map cannot confer a status that may otherwise be precluded by other legislation that existed at the time the right of way was so ‘dedicated’. This caveat applies equally to the ’20 year rule’ described in paragraph 16 et seq.

15. The path may be closed temporarily on the grounds of safety, while repairs are undertaken; it may also be closed for other purposes such as general maintenance of the waterway, but only if a schedule to the definitive map specifically so allows. In any other circumstances, closure either temporarily or permanently, can only be achieved through a formal closure and/or diversion order, made by the highway authority on application.

16. Importantly, WCA81 sets out criteria for establishing paths as rights of way, principally that after 20 years use without let or hindrance, the path automatically acquires ‘right of way’ status, subject to the caveat mentioned in paragraph 14. Therefore towpaths which appear to have no legal status may in fact be protected under WCA81, and have the same status as ‘definitive’ rights of way.

17. This is especially important in urban areas as urban authorities were exempted from the requirement of the 1949 Act to produce a ‘definitive map’; this explains why Ordnance Survey maps usually do not show any public rights of way through major towns. In many cases towpaths in urban areas may have acquired right of way status through usage under the ’20 year rule’.

18. In practice, legal status under the 20 year rule is invariably only proven on testing it through the courts. If there is any doubt about legal status, it is recommended that advice be sought from the Ramblers Association (RA) [4], the Open Spaces Society (OSS) [5] or the Towpath Action Group [6]. The ‘Blue Book’ jointly issued by the RA and OSS may also be invaluable [7].

19. There are a number of categories of rights of way, each of which confers different rights. If a towpath is defined as a footpath, then the public have a right of way on foot, or with an invalid carriage.

20. A bridleway is a right of way for the public on foot or with an invalid carriage, and additionally have the right to ride horses and bicycles along. A byway open to all traffic (BOAT) essentially carries vehicular rights as well as all those applicable to a bridleway. The number of towpaths that fall into either of these categories is sufficiently small not to warrant further discussion.

21. The nature or ownership of either the waterway or the land on either side of it does **not** affect the legal status of the towpath.

22. Unless you are trying to persuade a highway authority and the canal owner to upgrade a permissive path to a definitive right of way, it is recommended that no attempt be made to alter the legal status of the towpath. This one exception has the clear spin-off of passing the responsibility for future maintenance onto the highway authority.

Diversion of rights of way

23. If the towpath under consideration is a right of way then an application for temporary closure and a suitable diversion, pending restoration works, needs to be made to the highway authority - either the county council or in the case of major conurbations, the metropolitan borough council or city council. There will be a time limit for completion of the works, and the highway authority may impose specific requirements on the nature of restoration.

WALKING

24. Towpath walkers represent by far the greatest number of users on the canal system, and apart from cyclists, probably represent the biggest growth sector too. Although they do not generally pay directly for their use of the towpath, a number of case studies show conclusively that they spend substantial amounts within the canal corridor at pubs, cafes, restaurants, visitor facilities etc. Indirectly of course, through national taxes and Council Tax, the public **are** contributing to the upkeep of rights of way and BW towpaths via the local authority, and central and local government grants.

25. Therefore, notwithstanding the comments already made in the introduction, there are sound **economic** grounds for ensuring that this substantial potential customer base is attracted to the restored canal by providing a continuous towpath adjacent to the waterway wherever it is physically possible so to do. Promoting public access at an early stage may also help to demonstrate public support for the rest of the project, and attract fresh voluntary labour. A canal towpath may form part of a walking network in conjunction with footways which run alongside carriageways, through residential areas, to schools, shops and other places. If this is the case then the local highway authority should be consulted, and consideration given to maintaining a consistent quality of walking surface and signing throughout the network.

The walking surface

26. Dedicated walkers generally are undemanding in their requirements for the state of paths, but because of the level nature of canal towpaths, they attract walkers who may be less able or keen to cope with rutted surfaces, puddles and minor obstructions. The path will generally need to be of a higher standard than, for example, moorland paths.

27. Wherever possible, the towpath should be at least two metres wide, from the water's edge to the hedgerow or wall. Besides making it safer for towpath users, this will also facilitate hedge and grass cutting by mechanical plant. A strip at least one metre wide needs to be flat, and well drained to provide the principal walking surface. Ideally this should be away from the water's edge, with a grassed strip to the canal bank separating the walker from the water. If anglers are likely to use this length of canal, the grassed strip must be at least one metre wide, to prevent them obstructing the walking surface with their tackle. The walking surface should not be hard up against a hedge - the hedge could encroach onto the walking surface in summer months and nettles and brambles at the base could cause harm to towpath users.

28. The walking surface should be sympathetic to the local environment. Setts and cobbles, particularly near locks and bridge-holes should be retained but damaged sections will need to be repaired for reasons of safety. Brick and tarmac surfaces should be used only in urban areas where there is high usage, and their use is not visually obtrusive; stone paving will usually look more attractive, but only if it can be kept level, particularly at joints. If the towpath is used by wheelchair users or those with walking difficulties, there may be a stronger argument for a consistent level surface

29. Outside of urban areas, there is a strong case for keeping a grass path providing the ground is well-drained. Poor sections could benefit from turf reinforcement, usually at substantially lower cost than any more elaborate construction. The case for retaining grass will be less strong if the path is used by cyclists, parents with prams, and wheelchair users, or if the ground is unstable. In such instances, a more durable walking surface such as a concrete or limestone base, with a gravel, woodchip, hoggin [8], red/black ash or cold planed asphalt [9] dressing may be more effective. Any gravel or stone dressing should be finely graded for better bonding and well-compacted, or even graded to dust (scalpings), particularly if the path is used by the disabled.

30. The walking surface should be free of obstruction, subject to any requirements to erect stiles or gates to deter motorcycles or prevent livestock escaping. Facilities for other users should not be sited such that their use might obstruct the walking surface, for example fishing platforms for disabled anglers or mooring rings.

31. If the ground does not drain well, then suitable drainage should be laid before constructing the path [1]. Failure to do so will render any restitution of the path temporary, so adding to the future maintenance cost.

Access points

32. Existing access points, particularly at bridges and where other paths or tracks join the towpath should be restored if necessary to an appropriate condition, particularly if the adjoining path/track is a right of way. If a bridge is a listed structure then permission from the appropriate authority should be sought. Where access at bridges is by steps, and it is desired to create wheelchair access by means of a ramp, it is preferable to look for alternative new access points in the immediate

vicinity; concrete ramps from bridges can look unattractive and there may be insufficient space on the towpath to accommodate a long ramp without compromising the safety of those on or joining/leaving the towpath. It is also advisable to site wheelchair access points close to off-road parking facilities wherever possible.

33. Ramps should be no steeper than 7-8%, but ideally nearer 5% [1], [8]. Where there are steps - particularly if narrow or steep - it is generally preferred not to have a moving gate (especially one that swings into the steps) or stile at the top, as these can be difficult to use. If a gate is needed then chicane or kissing gates are most appropriate. Handrails should be provided/reinstated on any steps and exposed edges. As with any new structure, the materials e.g. timber, steel, should not be visually intrusive, but they do need to perform a task and be relatively maintenance-free.

34. Where there is scope and a desire for a new access point (for wheelchair use or otherwise), there may be new land ownerships to consider, but 'compensation' schemes administered by the Countryside Commission [10] or land assembly by the local authority for example, may make this an avenue worth exploring.

35. It is worth considering the routes that towpath users are likely to adopt. If a strategic footpath links in with the towpath, or where there are public transport facilities, or a major road crosses, the access point and towpath in the immediate area is likely to be well used, and space for motor-cycle barriers, interpretation boards, litter bins, waymarkers etc. may need to be incorporated into the plan at the initial stages, even if the actual provision of such 'facilities' is left until later on.

Waymarkers, mileposts and interpretation boards

36. Waymarkers - essentially heavy posts between one and two metres high - are important considerations where there is likely to be any substantial pedestrian use beyond the dog-walking, 'trip to the shops' level; they should be clearly visible but discreet and generally only need to be placed at principal access points, e.g. bridges, or where another major footpath links in. Commonly, they only indicate the **direction** of a particular route, maybe a circular walk (and often colour-coded in accordance with Countryside Commission guidelines [9], [10]), but there is no reason why distances cannot also be provided in certain cases.

37. Distances are more commonly shown on finger-posts, but these tend to be more prone to vandalism, especially timber ones, and are usually more expensive to replace than waymarkers. If it is deemed necessary to provide distances to more than a couple of towns/villages, a finger-post may be the only realistic option.

38. Unless the waterway has retained original milestones, or the intention is to faithfully replace them to 'original specifications', it may be worth thinking of adopting a milestone 'design' for waymarkers - stone or iron is far more vandal-proof than timber. This is one area where there is real scope for innovation without harming the integrity of the waterway.

39. Waymarkers, finger-posts and milestones can be useful vehicles for encouraging local involvement in the project. Civic societies may help fund waymarkers on local town trails that incorporate the towpath; milestones could be 'adopted' or sponsored by local people or organisations, with a small plaque showing their name; local rambling groups will often help, and may well be accustomed to erecting waymarkers and benches in memory of members who have passed away. As well as encouraging funding (albeit small-scale) from new and varied sources, these methods may help demonstrate wide public support for the restoration, and give a far less sterile, and more 'community' feel to the restored waterway.

40. Interpretation boards are a development of the last couple of decades and are a useful way of informing the public about the subject of the restoration project. Since waterways appeared in the National Curriculum for schools, they have also been seen as educational tools, which if nothing else, may offer scope for a further source of funding. Their principal drawback is that they are extremely attractive to vandals and can look intrusive in anything other than an urban setting - indeed almost by definition they are **large** and **obtrusive**. Their cost is such that they will generally only warrant consideration where there is relatively high usage, and unless they relate to a specific site of interest, are best placed within fifty metres or so of a major access point. Ideally they should not be sited right by the walking surface, as those reading them may then obstruct other towpath users.

41. If there is a suitable wall on which to place one (**not** the side of a listed building!) then this is likely to be less visually damaging, and damage-prone, than a free-standing one; it may also however be easier for the casual walker to miss, so it may be necessary to make it sufficiently eye-catching to attract attention.

42. Free-standing boards generally come in two forms; vertical, with most of the information broadly at 'eye-level', or sloping back at an angle of between thirty and forty-five degrees to the horizontal at a height of no more than one metre. The latter are usually less prone to vandalism and far better-suited for children and wheelchair users - they may be more restrictive in terms of size but the majority of visitors will have a far shorter attention span than the designers of some of the larger boards seem to think.

43. Interpretation boards will rarely last for more than a few years, and it may be worth thinking of them as a temporary advert for what you are doing, rather than as a testament to our waterway heritage that will outlive the Doomsday Book. By describing the waterway in terms of current activity, restoration or otherwise, the board becomes part of a living museum and not a history book.

Bridge-holes and tunnels

44. Where a bridge or tunnel is being reinstated/lifted/created it is infinitely preferable to have the towpath following the waterway through the bridge-hole. This may well increase the cost of this part of the restoration - by as much as 15% in the case of a new bridge - but by demonstrating the

desire to accommodate a much wider user base, public funding should be that much easier to secure. Clearly where a swing bridge or lift bridge is concerned, this is unlikely to be relevant.

45. In some quarters there is concern surrounding towpaths through 'tunnels' on the grounds of perceived possible misuse by the anti-social members of today's society but this concern is not widespread, and even then, misguided. There is little evidence that such concerns are borne out once the waterway and towpath are restored and well-used, and resistance by local authorities to 'through' towpaths on such grounds should be countered. If a boat gets into trouble in a tunnel, a through towpath will of course substantially ease both the boat's occupants' escape, and access by the emergency services if necessary.

46. Clearly if an overland route for pedestrians can **also** be provided then this is preferable, particularly if there is no major road to cross. In such cases, ramped access for wheelchairs, prams etc. should be provided if at all possible (see paragraph 32).

47. There will occasionally not be the scope for the 'ideal' two metre path through a new or reinstated bridge-hole or tunnel, and where the bridge profile is rectangular rather than arched, one and a half metres may be adequate. Two metres is likely to remain appropriate for an arched profile. Handrails are certainly desirable through tunnels of any great length, but should not be necessary in conventional bridge-holes, though there may be a stronger case where there is no alternative route over the top. Where handrails are provided, they should be designed so as not to impede the ability of a boat's occupants (some of whom may be disabled) to escape onto the towpath in an emergency.

48. Where possible, 'vandal-proof' lighting should be provided in tunnels.

Crossing points

49. Where the towpath changes sides and the bridge or ferry that allowed the user to cross over has disappeared, it is recommended that either a simple footbridge is constructed, or possibly that a walkway is created on the non-towpath side to the next bridge that does provide a crossing point.

50. Walkers should not be expected to cross on lock balance beams, even if there is a handrail, especially if the crossing is a strategic link between two paths or a link between two sections of towpath on opposite banks. Where such a link is necessary, a more formal bridge crossing will be required.

Disabled users

51. Some of the requirements of the wheelchair user have been covered in the previous sections, but it is worth consolidating some of the more crucial points.

52. The towpath surface needs to be flat and level over the whole course under consideration, and a route round retained setts and cobbles is likely to be required. Grassed surfaces are less likely to be suitable unless they are exceedingly well drained and there is a firm underlying base.

53. Stiles or 'wheelchair-unfriendly' barriers/chicanes will need to be removed or replaced, depending on other requirements such as preventing motorcycle access or containing livestock (see paragraphs 80 and 81). Access to the towpath needs to be on the level or by ramped access, and ideally close to parking facilities. Where the towpath runs through a bridge-hole or tunnel, an overland route will probably need to be secured. If this necessitates a road crossing then a controlled pedestrian crossing facility may have to be sought from the highway authority.

54. Of course, wheelchair users are not the only disabled users who may use the towpath. Those who merely have walking difficulties will probably share similar needs with wheelchair users, but those who are blind or partially-sighted, deaf etc., will merit different considerations. This is a more specialized subject, the detail of which goes beyond the scope of this chapter but where it is likely to be an issue, consultation with an appropriate national body or relevant local group should be made. Two such bodies which might offer advice are the Fieldfare Trust [15] and the Community Boats Association [16]

ANGLING

55. Angling is the top participation sport in the country, and while the number of canal anglers is substantially lower than canal walkers, it might provide some income for canal owners through lease of fishing rights, and the almost continuous presence provides a measure of security for canalside properties and moored craft, and deters use by the anti-social elements of society.

56. The sport has developed considerably over the last twenty years or more, and so, noticeably, has the expense and size of the average angler's 'kit', most notably the roach pole in place of the conventional rod and line. The demands of anglers have grown in tandem with this development, and where angling is to be encouraged, special considerations in regard to the towpath need to be applied.

57. This chapter does not consider the questions of water quality, contamination, fish stocks, lease agreements - these areas may need to be looked at before determining whether or not the waterway is suitable for use by anglers.

58. It is also worth making the observation that anglers prefer to fish the quieter waters on the non-towpath bank of the waterway, but **from** the towpath side. Therefore provision of fishing pegs on the opposite side to the towpath away from other towpath users, while attractive to such other users, may not actually be regarded as attractive by anglers - even assuming that there are no difficult land ownership issues to consider. Clearly it is worth consulting with local angling groups [11] and other likely users if such provision is to be proposed.

Space and surfacing

59. Given the space needed for tackle boxes, trolleys, umbrellas and maybe bicycles, the two metre overall width proposed in paragraph 27 is unlikely to be adequate for a stretch where angling is likely to take place. The fringe between the water's edge and the principal walking surface needs to be at the very least, one metre wide (probably nearer one and a half metres, especially if disabled angling is likely [8]), flat, and the bank stable.

60. In addition, a fringe of at least half a metre on the other side of the walking surface needs to be retained and cut back for extraneous items of kit such as a trolley or bicycle. This is likely to lead overall to a minimum width of two and a half to three metres; more if the bank slopes into the water.

61. For obvious reasons, the walking surface should ideally not give rise to undue noise when walked upon; as it was suggested in paragraph 29 that any gravel or stone dressing be well graded and compacted this should not present a problem.

Vegetation, wildlife and habitats

62. The fringe between the walking surface and the water's edge needs to be flat and well-drained, free of any substantial vegetation that may cause bank erosion, and may need stabilising, especially if disabled anglers are likely to be using it.

63. If the waterway is exposed, hedgerows and saplings could be replaced/planted to protect anglers from the elements. This also serves to delineate the canal boundary, and could act as a wildlife refuge. If there is a risk that these might restrict the angler's ability to cast [9], it would be advisable to consult with local angling groups on an appropriate solution.

64. Equally, shrubs and aquatic vegetation by the channel margins (particularly on the non-towpath bank opposite the anglers' pegs) will help provide food and shelter for the fish [8], [9]. Provision of such species is unlikely to be a major aspect of the restoration project, but if such species already exist, they should not be uprooted unless necessary, e.g. for re-lining the canal walls. Trees provide a refuge for fish from direct sunlight but should not overhang the waterway to the extent that they are hazardous to navigation.

Additional facilities

65. Because of the increasing size of kit, more and more anglers are using cars to drive to their chosen spot. Accordingly there needs ideally to be provision for off-road parking within no more than a kilometer of the pitches, and easy and safe access from there to the towpath. Ideally, existing parking facilities should be made to operate more efficiently, since the provision of new facilities will bring additional pressures on the local environment. Either way, the highway and planning authorities should be consulted over the implications of the additional traffic generated.

66. If the waterway is likely to be regularly used for angling at match level, other facilities such as toilets, litter collection sites and refreshment/bait shops may need to be provided at some point in the future. In the event that such a level of use can be reasonably confidently predicted - there may already be extensive fishing anyway - it is worth earmarking ‘plots’ where such structures could be erected; indeed there may already be suitable buildings available, such as former lengthsmens’ huts, which if capable of restoration can at least be made safe in the interim.

Restricted areas

67. It needs to be borne in mind that angling cannot be accommodated near officially designated moorings, close to locks and their landings, swing bridges, water points, sanitary stations etc., or under electricity pylons - if a length of waterway is frequently punctuated by such ‘obstacles’ then it may not be worth building in comprehensive angling facilities. Suitable signs should be erected where fishing is prohibited and, particularly in the case of pylons, these should be to an agreed standard.

Disabled anglers

68. Disabled anglers need a hard surface from the edge of the walking surface of at least one metre in width, for ease of access and manoeuvrability. There should be a kerb or upstand to prevent the wheelchair rolling over the edge. This kerb can be concrete or wood, running the full width of the hard-standing. It could also be achieved by using piles not driven to their full depth, though these would need to be covered in timber or rubber to avoid injuries caused by falling onto sharp edges.

CYCLING

69. The growth in off-road cycling in the last decade has been phenomenal and canal towpaths have shared in this growth. Albeit from a relatively low base, cycling is almost undoubtedly the fastest growing use on our towpaths; in 1994 the number of waterway visits made by cyclists was close to that of anglers [12] and it is likely that by now (January 1997) cyclists are second only to walkers in terms of user-visits, though their visits will invariably be much shorter than most other users.

Formal cycleways or just provision for informal use?

70. What is equally certain is that the current level of cycling is seen by many other existing canal users as being excessive, and there is great resistance to further increases, especially the trend towards **actively promoting** cycling on towpaths. Against this, central government is actively promoting ‘sustainable transport’ and though this is a political initiative it would appear to cross all political boundaries and is consequently a pressure that will not go away. Such policies are increasingly being adopted by local government as part of Agenda 21 which came out of the 1992 Rio Earth Summit on sustainable development.

71. It is not the place of this handbook to comment on the rights or wrongs of using towpaths as cycleways; there is strong pressure to ‘encourage’ such use, and public money available for so doing. Waterway design may need to accommodate such use in a great many parts of the country, but it must be incorporated at a level which neither denigrates the integrity of the waterway for what it is, or materially compromises the enjoyment or safety of other users of the waterway network. It is worth bearing in mind that the four m.p.h. ‘standard’ which has been the norm on the water and the towpath for two centuries may now be coming to an end and new standards of towpath construction and surfacing need to be set.

72. Many sections of towpath will never be suitable for use as a formal cycleway, either because they are too narrow along long sections or because they are geographically remote.

73. There is a difference between a towpath that is used by cyclists and one that is actively promoted for them. A formal and publicly promoted cycleway is only likely to be viable if it is part of a strategic network, and isolated rural stretches are therefore unlikely to attract public support, especially if there are poor road links. It is not envisaged that restoration bodies will be looking at cycle access in terms of a strategic network, and unless a major partner in the project is able to dedicate resources to pursuing this, it is only worth considering the level of demand likely from local people, lock-wheeling boat crews and the like.

74. A formal cycleway will need to allow for higher usage, fewer ‘obstacles’ and a generally higher design specification. It is also likely to involve an ongoing maintenance liability that the navigation authority is unlikely to want to pick up -unless someone is prepared to underwrite this future maintenance, it is advisable not to pursue a formal cycleway (see paragraph 84).

75. Where a cycleway along the waterway is proposed, it should if at all possible be on a path separate from the towpath, for example, on the opposite bank, or better still on the other side of an existing hedgerow or fence on the towpath side. It is probable that in many cases, land ownership considerations will prevent these from being financially viable, though the local authority may be prepared to consider land assembly as a way forward.

Space and surfacing on combined footpaths/cycleways

76. If there is no option but to incorporate the cycleway into the towpath proper, the minimum width of one metre walking surface prescribed in paragraph 27 needs to be increased to at least two and a half metres. Unless the towpath is particularly wide (say five metres including any fringes), footpaths and cycleways separated by some sort of barrier (even a planted hedgerow) should probably be avoided as this tends to destroy the aesthetic integrity of the waterway.

77. Even moderate cycle use will necessitate a harder towpath surface and generally grass is unlikely to cope without being heavily rutted after a short while. A rutted surface is likely to become dangerous for all towpath users and regular maintenance will become a financial burden. All of the constructions mentioned in paragraph 29 are likely to be adequate for anticipated demand. If the

existing walking surface is grass and that is deemed appropriate for future **pedestrian** use, there is no reason why a limestone-based surfaced cycleway cannot run alongside a grassed walking surface, and generally this is likely to reduce conflict.

78. Where there is some level of separation of paths, there is no indisputable case either way as to whether cyclists or walkers should be nearer the water - fearing collisions, both camps are likely to argue that they would rather not be at the water's edge. This may have to be decided bearing in mind the likely levels of use by both groups, and the number of points where pedestrians and cyclists are likely to join or leave the canal corridor.

79. However, where angling takes place, or where there are mooring facilities (officially designated or otherwise) there is a strong case for having the cycleway as far away as possible from the water to reduce the likelihood of cyclists running into either anglers (or their kit), or persons disembarking from, or rejoining, moored craft.

80. On any narrow sections, cyclists should obey the BW Waterways Code, and slow down and/or dismount when passing other users. In practice it is often the pedestrian who 'gives way' and the overall width of the towpath should be sufficient for this to take place, particularly if the walking surface is close to the water's edge.

Barriers and other speed prevention measures

81. Where speeding cyclists may make the towpath inherently dangerous, measures to slow down cycles should be incorporated. These would generally take the form of barriers or stiles, though barriers that actually force the cyclist to dismount should only be used where such action is absolutely necessary - if a cycleway is being actively promoted it has to be reasonably attractive to cyclists, and not seen as an obstacle course.

82. Gate design will also have to incorporate the needs of other users, such as those pushing prams and push-chairs, and those in wheelchairs. Few designs are wheelchair-friendly; though lockable gates are an option in this instance, the process of obtaining a key when needed can be difficult, particularly if the waterway is 'unmanned'.

83. Places where speed prevention measures may be necessary include narrow or low-headroom bridge-holes (or where the path under the bridge is out of line with the main towpath), the area around locks, lengths of setts or cobbles, well-used access points, designated moorings, water points and blind corners.

Future maintenance

84. The wear and tear on a cycleway is likely to be heavy if the surface and underlying structure are not suitably designed. It is unlikely in the initial stages of a restoration project that anyone will be prepared to underwrite an expensive future maintenance liability: a poorly-designed cycleway that

quickly degenerates and ceases to be used is a white elephant. It is therefore recommended that advice on appropriate construction is sought from, for example, BW Waterway Environment Services [13] or Sustrans [14].

85. As has already been noted, cycleways, to a much larger extent than pedestrian paths and basic angling facilities, will have an ongoing cost that the navigation authority is unlikely to be prepared to meet unless it can generate sufficient income for that purpose from fees or other sources, such as local authority assistance. Where a formal cycleway is envisaged, an appropriate means of covering this ongoing cost will need to be established,

CONCLUSION

86. There is no doubt that incorporating facilities, however basic, for non-boating users adds to the cost of any restoration project. Ever since the formation of the IWA, the restoration movement has been led by those with an interest primarily in the core navigational aspects of the waterways - the water channel and the towpath only to the extent that it is needed for navigational purposes; the 'whistles and bells' have often been added only after the boats are back on the water. Now, there is far greater availability of external finance for restoration, particularly from local authorities and public grants albeit, as was observed in the Introduction, with strings attached.

87. Relatively cheap enhancements to a restoration project are going to attract far greater public support, and considerably higher levels of financial incentives, simply because the project moves from being narrowly-targeted to one of regional, and maybe national economic and social significance. The restoration movement has the opportunity to shape the country for future generations, and at the same time significantly enhance the prospects of meeting its own objectives. This can only be achieved if projects are seen to encompass the widest range of potential activities.

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Transport Crossings of Canals

by
J E Saunders CEng, FICE
W S Atkins, Consulting Engineers

TRANSPORT CROSSINGS OF CANALS

History

1. This section is not intended to be a definitive record of the history of the development of canals in relation to the infrastructure. It is included only to show how canals have been affected by the development and spread of infrastructure, i.e. roads, railways, towns and cities.

2. It is well established that the era of canal building in the UK was largely concentrated into the period 1750 - 1800, with a period of "Canal Mania" as it is often called in the 1790s. Prior to this the movement of goods for trade and of passengers was restricted to wagons and coaches. Roads were few and usually in poor condition. Long distance movements of goods required a network of staging posts to change animals hauling carts and coaches and also to sustain passengers and operatives. Poor construction and maintenance led to frequent delays.

3. Canals which could solve all of these problems and provided the means for the expansion of trade were perceived as the answer at that time.

4. Hence "Canal Mania" . All over the country private Acts of Parliament were established and canals were built. They enjoyed, in the majority of cases a limited period of industrial success. The boats, horse drawn, could move simply loads of 20-30 tons but speed was governed by the horse: little more on average than 2-3mph. Fly boats, however, did achieve a better performance for passengers.

5. The decline of canals commenced in the mid 1800s with the development of the steam engine and its application to railways. It is also significant that the basic factors which governed canal routes also applied to railways. Construction costs could be reduced by avoiding wherever possible deep cuttings and high embankments. The requirements to use the ground contour applied as much to railways as to canals, although railways did not have quite the same flexibility of routing. Hence today we have canals and railways which often run parallel and close to each other. Crossings developed to allow the railway to be routed to centres of development which did not exist when the canals were built. It should be appreciated that at the time of these developments the canals were still in use and the crossings were arranged to take account of this situation.

6. By the early 1900s many canals were falling into disuse and disrepair. They were no longer commercially viable by comparison with the railways, due mainly to the comparative speed of movement.

7. At the time of the two major wars 1914-18 and again particularly in 1939-45 government action was taken to virtually nationalise canals. The remaining navigable sections of the canal system were preserved for wartime use as a supplementary means of transport. Subsequently the nationalisation process has progressed through various stages to the present body "British Waterways". Their remit from central government is substantially to maintain and operate their waterways either as navigations or as remainder waterways (i.e. generally closed to navigation, but still fulfilling a drainage amenity function).

8. Many other waterways which were no longer viable for navigation at the start of this process and therefore excluded from the nationalisation process, have been closed, their right of navigation withdrawn by act of Parliament.

9. Two other factors have to be recognised as substantially affecting these closed canals:

    1. Inevitably in the process of development during the lifetime of many canals their convenience as land drainage routes was recognised and used. This rendered it an expensive option to abandon and infill. Hence, there exist many semi-derelict canals no longer navigable but still able to perform a land drainage function.

    2. The motor vehicle was invented and developed as a means of transport of goods and passengers throughout the 1900s. This required the construction

of roads to facilitate its use to ever increasing standards with the raising of speeds leading to the need for improved vertical sight lines and the removal of humped back bridges.

The Restoration Scene

10. This then is the scene which confronts the present day various canal restoration movements which started in the 1940s and has been growing substantially ever since. Almost all the remainder derelict and abandoned canals now have a restoration society or trust working to restore them to navigation for leisure and tourism purposes. Inevitably, the easier schemes are now complete and those now being pursued have complex engineering problems.

11. Specifically within this chapter it is intended to deal "in principle" with the problems of canal restoration at highway and railway crossings where future navigation has been prevented.

Highway/Canal Crossings

12. Early highway crossings over canals often used the hump-back bridge to a greater or lesser degree. As traffic densities and speeds increased these were no longer acceptable. When the "right of navigation" was removed, these bridges were removed. The highway was "dropped" to improve vertical alignment and sight lines. If land drainage was important then a culvert or pipe beneath the road was included. In other cases "Moveable Bridges" have been fixed in position.

13. Subsequently, in many cases two other factors have arisen:

    1. The infilling of urban and/or industrial development alongside the highway which can create access problems if the highway is now raised to present day alignments to pass over the canal.

    2. The use of the highway to route and carry public services, which in themselves will require diversion.

Railway/Canal Crossings

14. Railway crossings of canals were generally constructed during the railway development period of the mid 1800s whilst canals were still in use with rights of navigation. The crossings over canals were therefore engineered to give navigable clearance. Here again as the canals declined, maintenance of these structures was a cost factor. When the right of navigation ceased, the structures were removed, in part or in whole and continuous railway embankment was established. Where necessary a through land drainage pipe was installed.

15. Generally the headroom for a navigable opening remained, although infilled and without the bridging structure.

16. It is also necessary to record here that where road or railway passed beneath a canal then an aqueduct to carry the canal over was required. This would have been the responsibility of the developer. However again if the right of navigation had been cancelled then the canal could be stopped up and the aqueduct or embankment removed subject to adequate land drainage arrangements.

17. This background explains how the current day situation facing the canal restoration movement has arisen. Almost no two canal problems are the same. Each case has to be evaluated against a list of required criteria. A solution must be developed which satisfies the engineering requirements and design criteria of road, railway and canal. The environmental needs of the situation must be considered. The solution must also be cost effective. The list and discussion of the required criteria and options which follows give an appreciation of the possibilities.

CURRENT CRITERIA FOR RESTORATION OF CANALS (To be checked with the canal owner/authority)

Canal Requirements at Crossing:

18. Minimum width of navigable channel:

For narrow boat canal only	2.4 to 2.5 metres	(7'-10" - 8'-3")
For broad boat and general canal use	4.8 to 5.0 metres	(15'-9" - 16'-5")
Minimum depth of water	1.2 metres	(3'-9")

Towpath width: 3 metres preferred, 2 metres minimum generally; at bridges, 2.0 metres is preferred but at some existing bridges 1.0 metres plus handrail has to be accepted.

19. The use of 1.5 metres water depth gives a greater margin in considering the periodicity of dredging and self support during periods of drought. It is at the expense of capital cost. Only a small percentage of boats using the canals today draws more than 2.5 feet or 0.76 metres.

20. Minimum air draft is 2.0 metres (6'-6") for standard narrow and broad boat canal craft with no cabin roof incidental equipment, i.e. radio and TV aerials, traditional chimneys etc. A minimum of 2.4 metres (7'-9") is a more desirable aim. A 2.6 metre (8'-6") minimum air draft will enable some pontoon mounted dredging equipment to be moved through the opening without demounting equipment or lifting out and transfer around the bridge opening.

Highway Requirements at Crossing

21. The minimum clearance for a canal over a highway is 5.7 metres, or 5.3 metres if the structure is designed to withstand impact loadings. Raising of the highway to clear a canal structure, is currently calculated using "Highway Link Design". Sketch No.1. gives an interpretation of the requirements for highway design speeds of 30 and 60 mph. This covers restricted and derestricted roads up to and including trunk road class. Motorways are not included since the lengths and widths etc. of carriageways which would have to be raised become so great that cost together with traffic delay costs renders this method of overcoming the problem uneconomic.

22. Highway loadings for bridges can range from a standard construction and use regulations (C and U) 40 tonne vehicle to HA plus 45 units of HB loadings for trunk roads and motorways with additions for abnormal loads.

23. Diversion of a highway with the resultant introduction of bends will also make it necessary to adhere to the design requirements for horizontal sight lines. These again will be related to design speeds.

Railway Requirements at Crossing

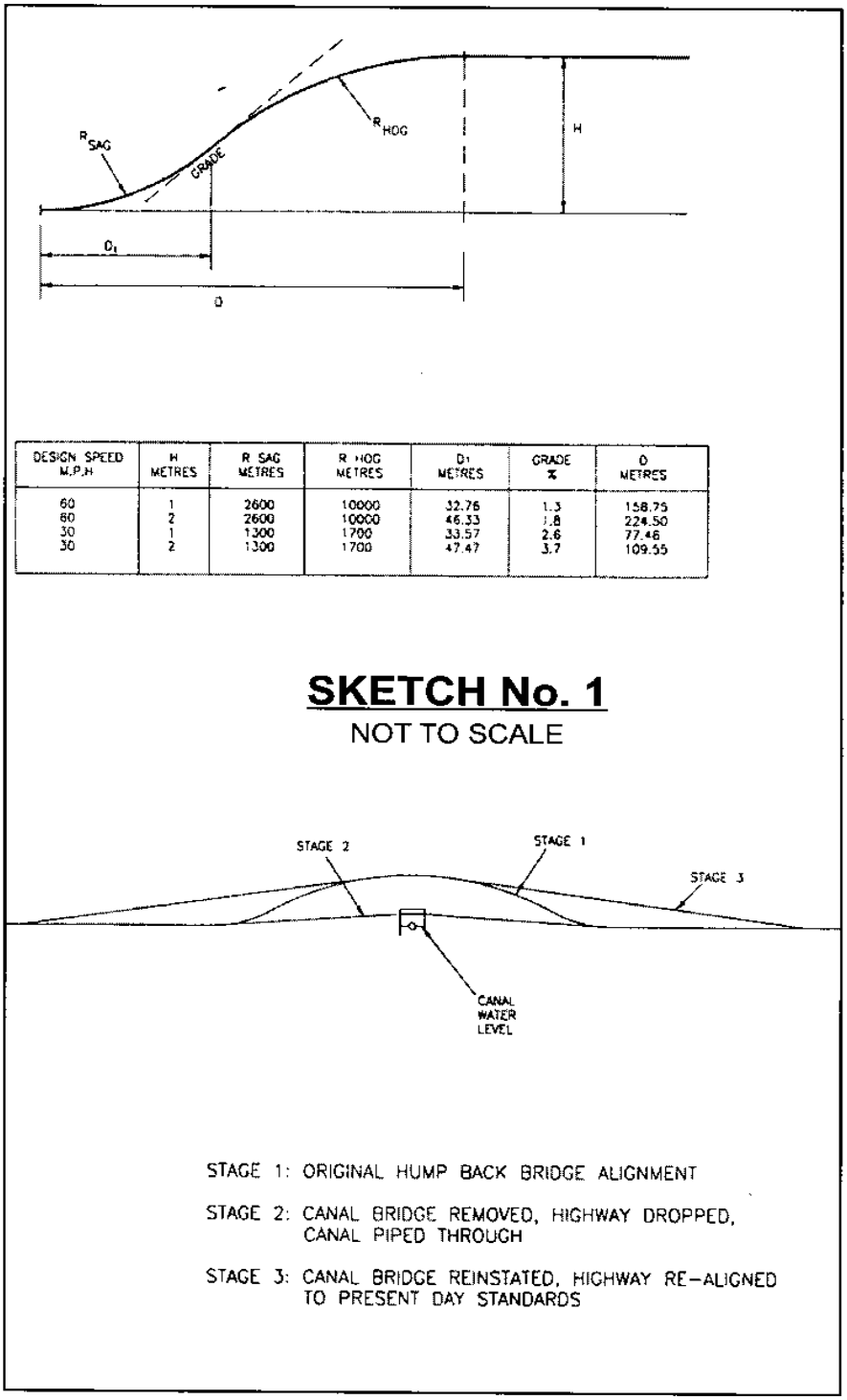
24. Railway criteria will be required for these cases. However, the development from inception of a scheme, through design to construction will usually be carried out by Railtrack. Due to the different nature of rail traffic i.e. fixed track, there is less flexibility for traffic movement during construction. Possible alternative rail routes etc. are more limited and essentially greater emphasis is placed upon methods which maintain rail traffic upon the existing track during construction of the crossing.

POSSIBLE SOLUTIONS

25. These then are the range of the main problems and the required criteria for alteration which confront those wishing to restore a canal at a highway or rail crossing. Consider now the possible options available, where the relative levels clash in terms of providing highway, rail or canal clearance for traffic or navigation.

They are broadly:

1. Raise the road or railway.
2. Lower the canal.
3. A combination of 1 and 2.
4. Create a moveable crossing (e.g. lift or swing bridge)
5. Realign horizontally road, railway and canal.
6. Raise the canal.
7. Drop the pound.



DESIGN SPEED M.P.H	H METRES	R SAG METRES	R HOG METRES	D1 METRES	GRADE %	D METRES
60	1	2600	10000	32.76	1.3	158.75
60	2	2600	10000	46.33	1.8	224.50
30	1	1300	1700	33.57	2.6	77.46
30	2	1300	1700	47.47	3.7	109.55

SKETCH No. 1

NOT TO SCALE

STAGE 1: ORIGINAL HUMP BACK BRIDGE ALIGNMENT

STAGE 2: CANAL BRIDGE REMOVED, HIGHWAY DROPPED, CANAL PIPED THROUGH

STAGE 3: CANAL BRIDGE REINSTATED, HIGHWAY RE-ALIGNED TO PRESENT DAY STANDARDS

Options 1 and 2

These can be achieved by an alteration of levels of the order of 2-3 metres depending upon the existing relative levels. To raise the canal means an alteration to achieve up to 5.7 metre clearance over a highway. In most situations this is simply not a viable option. The writer has however knowledge of one situation where this is planned. The old Ashby Canal crossed beneath Measham High Street. Restoration is now planned and the preferred route has the canal diverted in plan to cross the High Street at a different location using a redundant Railway embankment with an aqueduct over the road, where it is at a much lower level and therefore gives the required traffic clearance. Unusual, but it demonstrates the need for the Restoration Engineer to keep an open mind when examining every situation. Restoration Engineer is defined as any person or persons concerned with the methods of restoring a canal.

26. The Restoration Engineer must take in the broad picture and not concentrate only on studying the local crossing scene when seeking a solution. It may be that option 5, realignment in plan, will assist in conjunction with any of the options, 1 to 4.

27. To return to options 1 and 2, lowering the canal can be the simplest option. This is however very dependent upon the position of the locks in relation to the crossing. If a lock is present or planned on the downstream side of the crossing, this could be transferred to the upstream side and in most cases this simple operation will give the added height to achieve a navigable clearance at the road / railway, see Sketch No. 2. The average lock changes the canal water level by 2.0-3.0 metres which gives the 2.0-2.6 metres headroom required. The costs involved would be those of lowering a length of canal, building a new lock and removing an existing one and providing a bridge structure.

28. Against this the cost of raising a road will still involve providing a bridge structure in addition to raising the road to give the required vertical sight lines. Distances vary with highway speed classification. In addition any properties or side roads fronting on to the raised road will require to be ramped up to meet the new level often in a very short distance, see Sketch No. 3. The public services will also have to be raised to cross the new bridge structure.

29. The planned raised highway may aggravate traffic noise levels and create undesirable sight lines, difficulties with access to adjacent properties, all leading to the creation of undesirable impact on the infrastructure and environment. This could lead to refusal of planning permission regardless of the cost relative to that of lowering the canal. Obviously the lowering of the canal is likely to be the cheapest option, if the length of canal involved can be kept to a minimum. It is also likely to be the most acceptable change to the infrastructure and environment.

30. Two other factors however will concern the canal Restoration Engineer:

    1. Lowering a canal for a very long length can adversely affect the benefits. Cruising without being able to see the surroundings is not popular and is regarded as a dis-benefit.

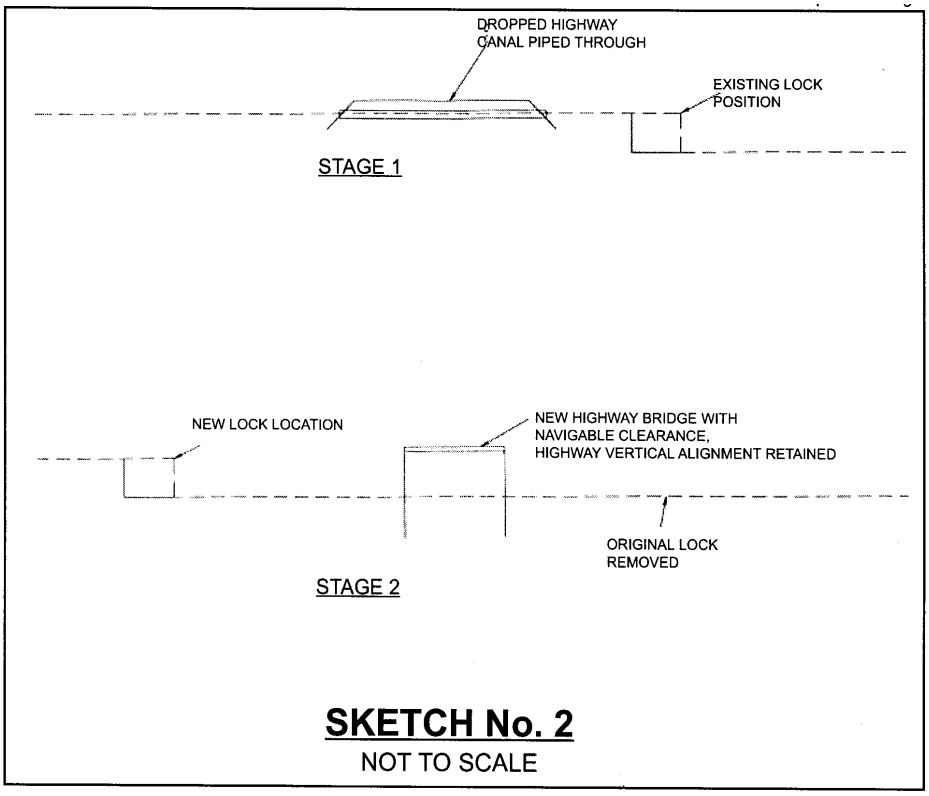
    2. Ground water conditions could make drained maintenance of the lowered canal difficult. A situation could be created where the upwards water pressure exceeds the weight of the liner and protection. Site investigation, piezometer readings over a long period together with a knowledge of the surface deposits geology will be essential where this is suspected. These problems can arise with any form of artificial lining, i.e. high density polyethylene (HDPE) or puddle clay.

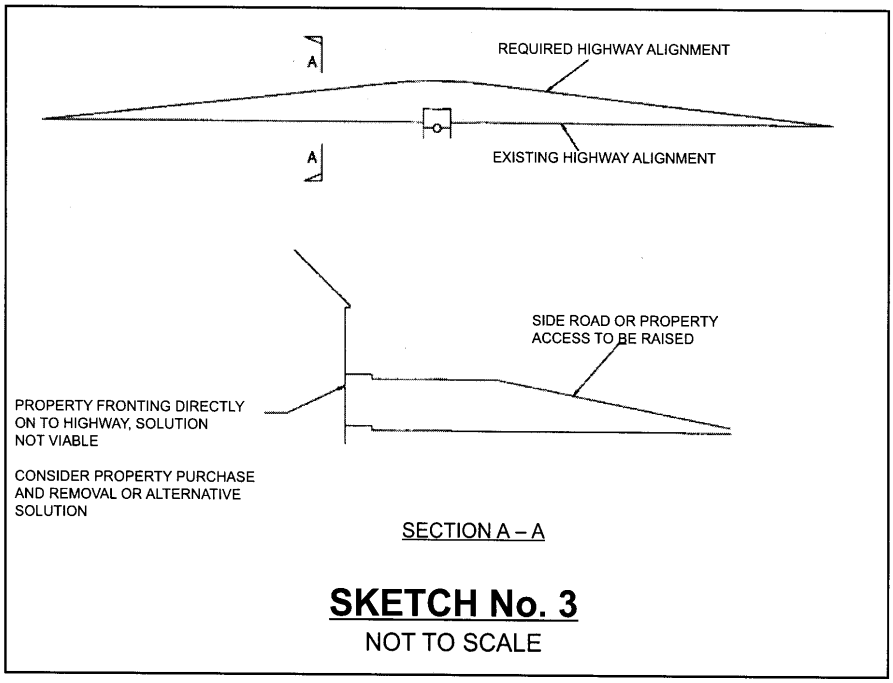
Option 3

31. Examination of a particular location may show that the best and most economical solution is a combination of items 1 and 2 above. Experience has shown that no two situations giving rise to canal blockage are identical. The Restoration Engineer must be prepared to consider each as a one-off problem to be solved from the range of options available.

Option 4

32. This involves virtually accepting the vertical alignment of road and canal at their point of crossing. This will then require the provision of a moveable bridge: in place to carry the highway traffic, open to allow the passage of boats. There are many examples of these bridges in the UK. Most of them have been in position for many years. Nowadays it is increasingly difficult to obtain agreement from highway authorities for the establishment of new crossings by this means.





33. On any trafficked highway the moveable bridge carries with it delays to highway traffic and the need for a safe queuing distance for the stationary traffic. The bridge solution, if accepted would certainly be electrically operated by the use of the boaters key. This is a one stage operation which controls the closing of the highway barriers, warning lights and the operation of the bridge itself. Note: the boater does not get his key back until he has closed the bridge after use.

34. The operation of boat passage will take between 5 and 10 minutes for a single boat and with ever increasing traffic densities on our highways it is not difficult to understand why the authorities shy away from this solution. It is however a viable option for little used roads and there is always the possibility of electronically preventing the opening of the bridge during morning and evening peak traffic flow times. They can also be viewed as traffic calming measures.

35. At locations of minimal highway use or farm accesses the hand operated moveable bridge is still in use but this is increasingly at a disadvantage as the size and weight of farm vehicles and machinery increases and becomes more sophisticated. It also has to be acknowledged that the moveable bridge attracts a higher maintenance cost due to its moving parts and is more open to vandalism. The bridge deck pulled off its closure wedges, makes an excellent structure to bounce up and down on, to the detriment of bearings and alignments.

36. There are two basic types for these bridges:

    1. The lift bridge.
    2. The swing bridge.

37. The lift bridge usually involves an overhead framework on to which is mounted a counter-balanced beam which allows the bridge deck to be raised and lowered either electrically or by hand through the medium of a small hydraulic pump. The hydraulic ram type which pushes the bridge deck up from below involves a large structure for a major highway and is seldom seen due to cost and complexity.

38. The swing bridge has the cantilevered section of bridge deck mounted on a pintle and bearing ring and this moves through 90 from closed to fully open. Again this can be operated, depending upon size, either electrically or by hand using a hydraulic pump or motor.

39. Moveable crossings require sufficient land and/or water channel to be available to mount the moveable deck and counterweight and also to allow the opened bridge deck to be clear of the navigable channel. The span of these bridges can be limited to 3 metres for a narrow boat canal and 5 metres for a broad boat canal. The width of bridge deck would normally be a minimum of 6 metres; a 7.3 metre carriageway plus 2 metre footways is possible but this would need more room to swing.

Option 5

40. It is worth recording here that in addition to options 1, 2 and 3 any or all of them may be used to obtain a solution in conjunction with moving the crossing point horizontally. It is entirely dependent upon the local conditions and contours at any specified obstruction.

Methods of Creating a Bridge Opening Under a Highway for a Canal

41. Consider now the forming of the actual opening for navigation beneath the road. The vertical and horizontal alignments have been decided in terms of options 1 or 2, or 1 and 2, or 5 as discussed above. At this stage a decision on the type and form of structure to form the opening is required. Consideration is required of how to achieve its construction whilst maintaining traffic on the highway and how the public services are to be re-aligned and maintained.

42. In almost every case, at this stage, the Restoration Engineer has to recognise that he will have to present proposals and liase with various authorities to agree a scheme and method "in principle". This will enable him to develop a feasible scheme and a budget cost of works. As and when the stage of full design and construction of these crossing structures proceeds the

works will be the responsibility of the appropriate authority. Generally, this will be the highway authority (County Council) who may do the work "in house" or sub-let to a Consulting Engineer.

43. In the case of public services, the appropriate local area office for the service will be responsible for detailed planning and execution of any alteration works to their service.

44. If we now consider the form of the structure, what is required is a rectangular opening having a minimal internal height of 1.2 + 2.4 (1.2 water depth plus 2.4 air draft) = 3.6 metres and width for a broad boat canal of 5.0 + 1.0 = 6.0 metres. This allows for a 1.0 metre path through the structure.

45. It should be borne in mind that predominantly these structures have to be formed at locations where space is at a premium, traffic flows have to be maintained and public services have to be temporarily suspended or diverted whilst structure construction is carried out. It is therefore essential that the work is done as quickly as possible.

46. It is with all these thoughts in mind that the option often selected is a box culvert section. This is economical and the size can allow the culvert to be made up of 1.0 metre long pre-cast box sections. At 3.6 x 6.0 metres this is virtually on the maximum size and weight to be simply transported by road from a casting yard to the site. This process can save considerable time in the overall programme of construction.

47. Many Highway Authorities view the pre-cast box section culvert with disfavour despite its advantage of speed of construction. Their reluctance stems from doubts that the joints between the box sections will remain watertight. It is worth remembering that a watertight HDPE lining can be carried through the pre-cast box culvert with the addition of concrete protection from boats, see Sketch No. 4.

48. In the present climate of moving from the old conventional towpath of 2 metre width with 1 metre through structures, to a standard 3 metre wide multi-users trail (MUT) this will be achievable by using a separate box culvert for the MUT or resorting to an insitu construction for a single span structure which would be on a much larger scale and require considerably greater construction time and cost.

49. Other possibilities for achieving the structure required to give the opening for navigation could include the corrugated steel culvert type. This elliptical form however is not the ideal shape and requires a higher clearance to achieve the minimum gauge at the shoulders. In most canal applications this would be a drawback when trying to achieve minimum clearances.

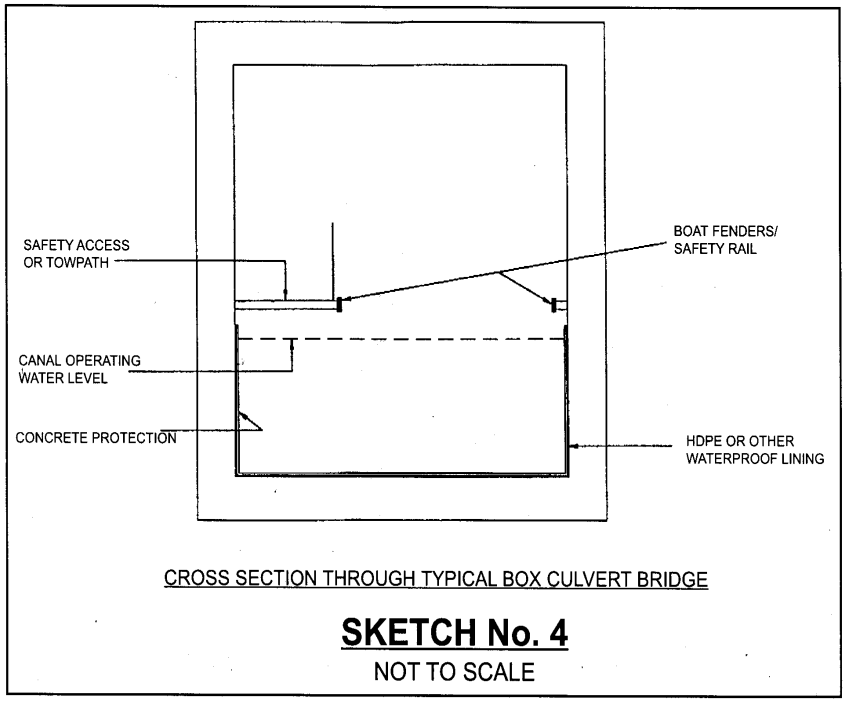
50. Looking at methods of construction, the first method to be examined for maintaining the use of the highway for traffic during construction should be creating a road diversion around the works location. If the verge and/or footpath is of sufficient width this could be used for road traffic whilst the bridge/culvert is constructed. On completion the traffic is placed on the now completed section whilst the remainder is constructed. One way traffic working under traffic light controls may be necessary.

51. If there is insufficient width or property prevents the foregoing approach then another alternative would be to use temporary bridging (of the Bailey bridging or Mabey quick bridging type) to bridge the culvert location whilst construction is carried out. A temporary 24- hour road closure at a weekend would be sufficient to establish such a bridge and the approach ramps. Single way or double working is possible by these methods.

52. If there is sufficient headroom beneath the highway, then thrustbore methods could be used. The criteria for these are described below under "Crossing a Motorway".

53. Public Services. Generally on highway crossings the re-routed public services can be accommodated in special duct sections of the box culverts at the verges or footways. In addition to the depth/thickness of the roof slab there is an increased section by reason of the kerb and footpath at these locations, see Sketch No. 5. This, coupled with the lighter loading at the footpath, creates generous duct facilities for services.

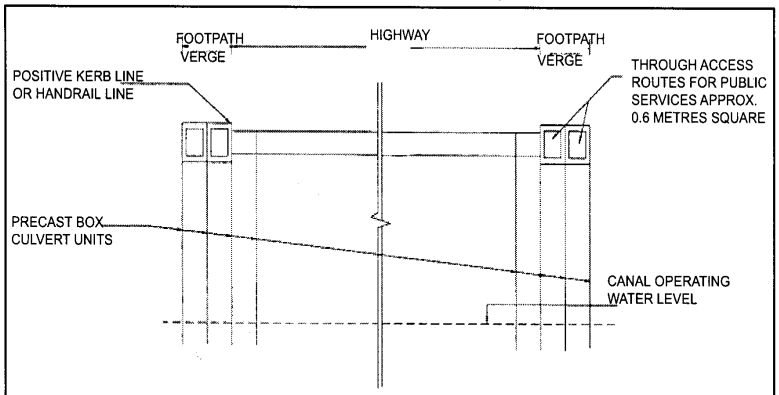
54. The exception will be the foul sewers. These depend upon falls to outlet and they cannot be randomly raised. They must if necessary be stepped down at the canal and then re-laid to join in at a lower level preventing the chance of a backfall. If the authority will permit a dual track siphon (i.e. dual pipe beneath the canal in a stepped down section to allow alternate use for maintenance and cleaning) then this may present a possible solution.



CROSS SECTION THROUGH TYPICAL BOX CULVERT BRIDGE

SKETCH No. 4

NOT TO SCALE



TYPICAL CROSS SECTION AT A HIGHWAY/CANAL CROSSING

SKETCH No. 5

NOT TO SCALE

Methods of Crossing a Motorway

55. The crossing of a motorway presents problems of a different scale, due to traffic densities and speeds and the re-chargeable cost to the developer (i.e. those restoring the canal) of traffic delay costs. The authority for these is the Highways Agency who may sublet to their agent

authority (County Council) or direct to a Consulting Engineer. There are presently a number of schemes on various canals which eventually will require a box culvert type structure to pass beneath a motorway.

56. Where the structure roof is at a minimum of 3 metres or more below the highway construction and the embankment is constructed of suitable materials compacted to 90-95% of optimum then it is likely that the structure can be achieved by thrust bore methods using strengthened 1 metre long pre-cast concrete box culvert sections. This work using modern tunnelling methods need not impose restrictions on the traffic movements. Where cover to road construction is less than 3 metres it would be essential to close traffic lanes, bringing into use the hard shoulders and narrowed traffic lanes in order to maintain the traffic capacity with the least possible delay time.

57. Obviously the aim in an ideal world should be to phase the culvert construction with the periodic carriageway reconstruction/maintenance. This would perhaps allow the traffic delay costs to be mitigated by sharing with motorway maintenance.

Crossing a Railway

58. The approach to achieving a structure crossing beneath rail tracks is different by the nature of the type of traffic, i.e. trains restricted to rail tracks. The safety aspects are of paramount importance due to high speeds and the greater number of passengers at any one time passing a works location. The authority will be Railtrack who will establish with the Restoration Engineer the basic requirements and they will then design and cost the scheme from feasibility to completion.

59. Usually Railtrack would wish to drive two narrow openings through the embankment in positions which will allow them to form the final abutments of the required bridge opening. This can be done by a series of small cross-section box thrust bores. With suitable bracing at track level by steel joists carrying the tracks during the work, this phase need have no effect upon rail traffic, or at worst a local speed restriction.

60. With the required abutments completed a whole section of deck complete with rails to span the gap between the abutments is constructed to one side. On completion and with a suitable track possession, the existing section of track between the abutments is removed and the new pre-fabricated section of bridge deck and track is moved into place. The excavation to complete the bridge opening can then be completed.

Option 6

61. This is not an option which occurs as a possibility very often. It will probably result in a short elevated pound with 2 or more locks and have to be maintained by back pumping.

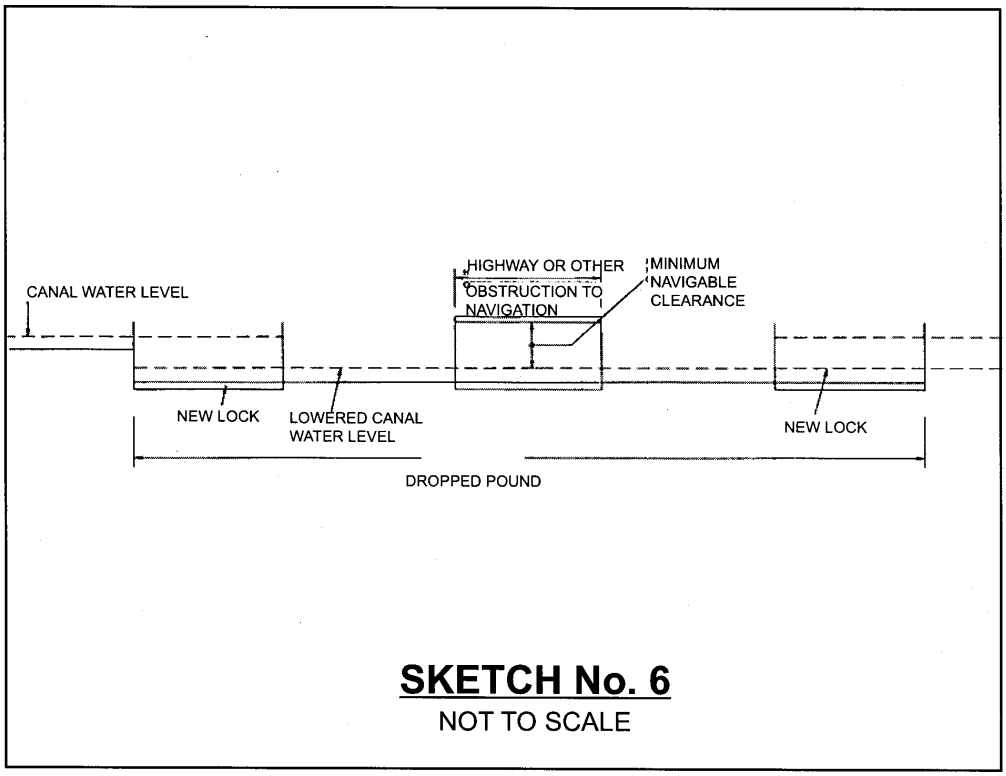
Option 7

62. The solution of a "Dropped Pound" has been proposed at various locations on many occasions. It is easy to see why. At a difficult crossing situation the canal can be dropped locally by the introduction of a lock, the lowered pound passes beneath the obstruction (usually a highway) and the disruption to the canal is minimised by locking up again having cleared the obstruction, see Sketch No. 6.

63. This is not a safe option for the canal user, boater or towpath walkers. Even if the lockage water can be controlled by pumping, consider the result of either a lockgate failure or misuse of operating paddles being left open through a lock. The situation could arise whereby a boat is jammed under a bridge by the sudden rise in water level.

64. Even with an overflow weir to a discharge, a gate failure in a short lowered pound could give rise to a surge which could be a safety hazard.

65. Obviously safety is a question of degree dependent upon the length of the proposed low pound, the overflow discharge and surrounding land levels etc. The use of this option will require the most searching investigation before being adopted.



SKETCH No. 6
NOT TO SCALE

How to Start

66. How then should the Restoration Engineer go about his job of finding solutions to the problems? The initial requirement is to gather as much information of the existing situation and proposed requirements as is available. A suggested list of essential information might be:

1. The existing pound levels and lock positions on the canal.
2. Condition of canal. Infilled, silted up, overgrown, is it lined?
3. Obstruction at crossing. In the usual case of a Highway: class of road, footways, traffic flow information including traffic speeds, longitudinal section with existing situation, type and levels of properties off the highway.
4. Existing bridge at crossing; span, headroom levels, foundation condition and level.
5. Public services. Which services cross the location, size type and levels.
6. Establish the criteria required for the canal and the highway.
7. Obtain ordnance survey mapping to cover the location: 1 to 25000 with contours for location: 1 to 10000, or larger scale, with contours to work from.
8. Visit site to inspect location and photograph. Discuss with client and highway authority etc their preferred option solution.

67. The majority of the information should be available from the Local Authority, the Highway Authority, the public services bodies, the Canal Trust/Society. Railtrack, British Waterways, The Environment Agency, adjacent landowners, museum archivists, local historians, etc. Where there are gaps these have to be filled by inspections, possible survey and photography.

68. It is only at the completion of this exercise that the Restoration Engineer will be in a position to sit down and work up a scheme at feasibility level, for general agreement with all the parties involved. Subsequently this will have to be developed in greater detail for contract and construction.

Town and Country Planning for Beginners

by
Robert Dewey BA(Hons), ARICS, MRTPI

INTRODUCTION

1. The system of town and country planning which currently operates in England and Wales is just over 50 years old having been brought into existence by the 1947 Town & Country Planning Act (Please note that the law in Scotland although similar is different). To say that the law is now complex is probably an understatement; the practitioner's encyclopaedia takes up six volumes. Professionals dealing with it day by day can find it difficult to grasp all the detail; it should be understood that this paper will barely scrape the surface of the subject. It is intended to give a brief, broad summary and hopes to point to some of the more obvious areas where IWA or other canal groups may become embroiled. It should also be noted that the IWA may sometimes be an objector to planning proposals by others and sometimes may be a proposer/supporter seeking to have planning permission granted. The two may need subtly different treatment.

2. This chapter has not been written by lawyer and the detail of the law and procedures changes frequently. The reader should use it as a guide to general principles , seeking specific advice if the case becomes complex.

3. The system of town & country Planning is concerned with the use and development of land. It is concerned with protecting the public interest and is not generally concerned with private rights; it is rarely concerned with financial matters or competition between businesses.

4. This guidance is set out as follows:
   - legal framework
   - the planning system
   - consideration of what needs planning permission
   - how to make/handle a planning application
   - how to manage the planning process
   - appeal procedures
   - Listed Building matters
   - Conservation Areas

LEGAL FRAMEWORK

5. The law consists of Acts of Parliament, supplemented by specific Orders, Regulations and Directions, explained by Ministerial Circulars, Planning Policy Guidance Notes (PPG) and interpreted by decisions of the Courts.

6. The principal Act is (at present) the Town & Country Act 1990, but readers should not rely on a printed copy of it because it has been amended by (among others) the Planning & Compensation Act of 1991. Hence, a printed version of the Act will not include section 54A but (as will be pointed out later) it is very significant. Another significant Act is the Planning (Listed Buildings) Act 1990. These Acts contain the law as agreed by Parliament. Since the law is amended from time to time by Parliament and by decisions of the courts, practitioners need to rely on the loose leaf format of the Sweet & Maxwell Encyclopaedia of Planning or Butterworths CD ROM which are kept (fairly) up to date. They cost several hundreds of pounds so don't try and buy them. Groups may be able to read them in the Council Planning Department.

7. Since getting a new Act through Parliament is very time consuming and expensive, MPs clearly do not want to have to revise Acts with any frequency. Often provision is made for the Secretary of State to make Regulations under the Acts. These have the same force as the Acts and can be issued relatively easily. In 1991, for example, six General Development (Amendment) Orders were thus issued. Ministers may want to give advice to local authorities and they issue Circulars and guidance notes (PPGs). These do not have the formal backing of the law but are material considerations and will need to be taken into account.

8. The final piece of the jigsaw is the judiciary (the courts). In making decisions, the judges interpret the law and their verdicts can over-ride circulars and ministerial decisions if they do not accord with the law, or are seen to be unreasonable, or would not provide a just decision. Some decisions bind future decision makers to the same line of argument and thus can be very powerful. It is not always easy to find out relevant cases.

THE PLANNING SYSTEM

Administration

9. The planning system is headed by the Secretary of State [in England the SofS (Environment, Transport & the Regions) in Wales the SofS (Wales)]. However for most matters his powers are left in the hands of the local councils. For most day to day planning control this means the District or Unitary council - the Local Planning Authority (LPA).

10. Councils are made up of elected members (i.e. councillors) and they appoint officers to do most of the day to day work. Many councils delegate some of their power to decide planning applications to the Chief Planning Officer or equivalent. Most matters will be allocated to a case officer and contact should be made through that officer.

11. Both Councillors and Officers wield significant power in the planning process and it cannot be stressed enough that groups will be well advised to cultivate close and constructive relationships with both. Councillors expect to be lobbied, so talk to them, invite them to events as your guests.

Forward Planning

12. The 1990 Act divides broadly planning into Forward Planning (Development Plans) and Development Control. Forward planning is about setting out the LPA's strategy for the future - typically a 10 year period. In areas of two tier authorities (i.e. counties and districts) the County Planning Authority will prepare a structure plan and the district will prepare local plans. In areas with one tier only (in Metropolitan areas, Wales and a variety of larger towns in England) the LPA will produce a Unitary Development Plan or possibly a joint plan with adjoining district(s). The three types of plan can all be described as the Development Plan for the area. It is the government's intention that all areas should be covered by a plan.

13. Structure Plans are written statements giving a series of general county-wide policies illustrated by a diagrammatic map. The map cannot be scaled and is not intended to give detailed location of proposals.

14. Local Plans are intended to put 'flesh on the bones' of the Structure Plan. They consist of the written (more detailed) statement accompanied by an Ordnance Survey based plan. This will typically be at 1:10,000 (i.e. approx. 6" to mile) and may include larger scale detailed plans in urban areas. The local plan must be stated by the County Council to be in general 'conformity' (i.e. its proposals must be compatible) with the structure plan before it is approved.

15. Unitary Development Plans are effectively the structure plan and local plan rolled into one.

16. Development Plans are reviewed from time to time - typically every five to ten years - and are seen as a means of telling developers and residents how the LPA sees its area changing (or not changing) in the period.

17. Although intended to have a degree of permanence, the plan can be amended or schemes which do not accord with it can be approved. Sometimes, unforeseen events occur and the local plan is not a veto. However, the LPA will have to initiate a "Departure" from the Local Plan to allow it to proceed following suitable publicity and consideration of objections.

18. Because of the importance of the development plan (see comments on Section 54A of the Act - para 23 below) it is crucial that it contains the policies which reflect the aims of the group. If the plan states that the canal will be protected from development and/or will be restored to navigation you will find that applications for planning permission are much more likely to be decided in accordance with those aims. If there is no such policy, campaigning will be so much harder.

19. Groups should not sit back and rely on the Councils to put suitable policies in their plans, though. The Councils may not be aware of their hopes or have any inkling as to the benefits to be derived from waterway restoration. Groups should find out what the intentions are for the future of the waterway and build up a dialogue with the Councils as soon as possible. Where a waterway extends through more than one Council area, it may be useful to bring together officers of each council in a working party. The group should ascertain when they are intending to review their plans by asking them in writing. Plans are produced in draft for consultation, prior to being published formally for comment and it is important to make sure appropriate policies are included at the first opportunity. It is worth considering drafting policies for Councils. There are

plenty of suitable policies in other areas' plans which can be copied. Even if your waterway does not appear threatened, it is worthwhile to include some policy to encourage use, or improvement, or towpath improvement or whatever.

20. Progress on the plan should be carefully monitored as it proceeds through its (very lengthy) procedure towards its adoption. This can take several years or much longer depending upon the complexity of the plan and the objections which are raised. It is absolutely essential that someone in the group is responsible for watching the progress. When the plan is put 'on deposit' - the formal comment stage, a period of just 6 weeks is allowed for objections and letters received outside that time (even by a day) may be ignored. If the plan includes the policies which the group supports - it is worthwhile to write formally in support.

21. The group's interest must be continued throughout, and it may need to be prepared to defend the case at a public inquiry into any objections raised by others or may need to explain to an independent inspector why you think your policy should be included. Success at this stage will make the campaign very much easier in the following years.

Development Control

22. The other main part of planning is the control of development. (see below for what 'development' includes). Development Control is where the detailed, day to day decisions are made. Planning applications are submitted for decision and government policy aims for 80% to be decided in less than 8 weeks so there may not be time to wait for a group meeting before making comments on a new application. The group should entrust a member with the job of responding quickly on its behalf.

23. Applications must be determined in accordance with the Development Plan 'unless material considerations indicate otherwise'. (Section 54A of the 1990 Act). The plan is thus the first consideration and (see paragraph 18) it is extremely important. Other "material considerations" will always be relevant but will probably only outweigh the plan if it has no policies relating to the matter or it is out of date. These considerations include a very wide range of matters related to the use of land and certainly would include benefits from a restored canal. They would not normally relate to financial considerations.

WHAT NEEDS PLANNING PERMISSION?

24. Section 55 of the Act tells us that planning permission is needed for "..building, engineering or other operations in, on under or over land or for the making of a material change in the use of land..." That just about covers everything, including repairing the gutters on a house.

25. No bureaucratic system could cope with that workload. So, by means of Regulations such as the Town & Country Planning (General Permitted Development) Order (GPDO) and the Town & Country Planning (Use Classes) Order (UCO) amongst others, certain matters are taken out of the system (in effect are given planning permission automatically). Many activities undertaken by British Waterways - dredging for example - are "permitted development" because the GPDO grants permission. Control can be recovered by the Local Planning Authority but in most cases only with the Secretary of State's permission (called an Article 4 Direction) and only before the works are done. This procedure is complicated, time consuming and could involve payment of compensation and is rarely used. In general it should be assumed that anything which is permitted development is beyond the control of the LPA.

26. Whole books can be written trying to define what is development. - i.e. what needs planning permission. Sometimes the Act will contain help - e.g. the deposit of waste material is specifically listed as a change of use of land. There are also less helpful statements like "building is work normally carried out by a builder". The scale of something will often be relevant in deciding whether something is development. One man digging a hole may not be, a gang with a Hymac digging one could be. Similarly, parking on car on a piece of land may not be a change of use, a car dealer parking dozens would almost certainly be. Regrettably, the fact that something is objectionable does not mean that it is development and the LPA may be powerless to intervene.

HOW TO HANDLE PLANNING APPLICATIONS

27. There are two sides to the process. Groups may be making a planning application to dig out your canal or they may be seeking to comment on an application from someone else which they wish to support or object to.

Making an application

28. Making an application is not necessarily simple, although at its most basic it involves filling in a form (plus up to 4 copies) and providing plans showing the location of the site (e.g. 1:2500 OS map). Details of the proposal maybe 1:500 or larger) with elevations and detailed layouts may also be needed. A certificate relating to land ownership will be essential. There is also a fee to be paid. It is likely to be worthwhile contacting a planning officer informally before submitting the application.

29. On receipt of the application, the Council will send you an acknowledgement giving you details of who will be dealing with your application and a date 8 weeks ahead by which time a decision should be made. If you do not get a decision by then you can appeal (see Section G) as if your plans had been refused. However this is rarely the quickest way of getting a decision and should not be done without further advice.

30. Making friends with the case officer (see paragraph 44) will undoubtedly be beneficial and confirm that he/she has all the information needed; an applicant try to find out whether the application is to be decided by the committee (councillors) or by the Chief Planning Officer (under delegated powers). The case officer should be able to warn if there are problems expected and if so, the group should be prepared to lobby the committee members.

31. If all goes well a planning approval notice will be issued probably specifying conditions which must be complied with. The first will be a requirement to start within five years. If you are not ready to start yet, obtain advice about making a “technical start” to ensure the permission does not expire. Details from IWA HQ.

32. If permission is refused, there is a right of appeal but before doing so, the reason(s) given for the decision should be studied to see if they can be overcome. If so, a revised application can be made for no fee within twelve months.

Commenting on someone else’s application

33. Groups must ensure that a careful watch is kept for proposals which may affect your canal. (see paragraph 43). It should try to persuade the Council to send it the list of plans received and also details of any applications which affect the waterway. Local members of the group should watch for notices which are required to tell the general public of the receipt of an application. They will be put up at or near the site, there may also be a notice in the press.

34. As soon as the group becomes aware of an application it must act. There may be as little as 21 days from the date of the notice to get comments in. If this is missed, the chance to object may have gone forever. If the date is missed, the Council should be asked if there is still time but it is far better not to run the risk.

35. Comments (for or against) must be made in writing to the Council. Make sure what is said is well thought out and well presented. It should be illustrated it if appropriate and copies sent to influential councillors. It may be beneficial to contact other groups or individuals and see if they will also write in to add weight to the case (one letter well argued is good enough but a barrage of letters making similar points does concentrate the case officer’s mind). Petitions or standard letters can be useful but individually worded letters are worth much more.

36. Simply because something needs planning permission it does not mean that a planning application will be lodged. Planning fees (typically £190 in 1998 and up to £9000 per application) are a strong disincentive even though the fee may be relatively small compared with the overall cost of the development. It is, however, not an offence to carry out development without planning permission. People are given the benefit of the doubt and allowed to apply in retrospect when the mistake is pointed out to them. The Authority is expected to consider the retrospective application as if the development had not occurred and to judge it fairly.

Enforcement

37. If the application is refused (or if no application is made) the Local Planning Authority has to decide whether the breach of planning control is sufficiently serious to take the step of serving an Enforcement Notice. It is an offence not to comply with an Enforcement Notice. An Enforcement Notice is served when a breach of planning control is considered sufficiently serious for the Authority to take action. Many breaches pass unnoticed or are considered insignificant.

38. If a change of use goes unchallenged for ten years (for other developments the period is four years) it becomes lawful and thus no action can be taken by the Authority.

39. An Enforcement Notice takes 28 days before it can become effective - after that time a further period specified in the Notice must be allowed for the breach to be put right. Any appeal against an Enforcement Notice must be made in that first 28 days. Subsequently action can be taken in court to prosecute a developer for not complying.

40. If more urgent action is required (e.g. if the breach is causing a nuisance) the Enforcement Notice may be supplemented by a Stop Notice which becomes effective after three days. Councils also have the power to serve an injunction which is described as the ultimate weapon since failure to comply with it can incur very serious penalties. These are rare indeed.

HOW SHOULD GROUPS MANAGE THE PLANNING PROCESS?

41. In the ideal world the group should aim to be one step ahead of the opposition but in reality it will often have to react to other peoples' decisions. A few basic rules should set out the foundation for success.

42. Firstly, the Development Plan must reflect the group's aims. Section 54A mentioned above requires that decisions are made in accordance with the plan unless there are overriding reasons. So it is important to be clear about the Council's programme for preparing its development plan. (see paragraph 19)

43. Secondly, most Councils publish a list of applications they have received that week and it will be useful to get on the mailing list. It may cost money (maybe £100 pa) but showing the Council that the group wants to play a constructive part in the planning process may persuade them to send lists free of charge. Alternatively it can be seen at the Council offices or local libraries. The list will invite comments within a period (usually 21 days) so must be reviewed every couple of weeks at least. Be meticulous in considering the list. It is unlikely to describe a proposal as "filling in derelict canal" - more likely "erection of dwelling". It is important to be aware of the areas in which you are interested, including new and old street names, names of old houses etc. The grid reference may be included and may help. If there is any doubt you must ring up or better still ask to see the plans. The Council must keep copies for the public to see.

44. It will be useful find out who the development control officer(s) is/are for the areas in which you are interested and to keep them informed about your plans - if you have a newsletter send it direct to them (as well as the chief officer). Building up a trusting relationship with them is a good idea because, they can sometimes succeed by gentle persuasion where the full might of the council may not be able to.

45. If a group finds an application that affects its interest and wants to object it must put a full statement of its case in a letter to the Council before the deadline. This should contain a sensibly argued case; abuse, insults etc, are to be avoided.

46. It may help also to contact the developer and explain that you want to discuss ways in which his scheme can be modified to overcome the concerns. He may just be willing to adopt the alternative which suits both parties. If no negotiations are possible the group should contact Councillors with a clearly argued case to back up its objections. A regular dialogue with the more influential ones is a good idea. The leader of the Council (i.e. the head of the ruling political group) is the single most important member but do not ignore minority parties.

47. It may be useful to invite Councillors to see an example of a working/restored canal since many of them may never have seen a canal in working order - show them the beauty that you know so well. Depending on far you have been able to build up a trusting relationship with officers and Councillors you may consider taking them on a short canal trip. Don't assume they will agree on first asking!

48. If the Council does not support the case what can be done? Firstly note this is different from the Council ignoring the case. Make no mistake, this situation is difficult but continued negotiations with the Council officers, the members and the developer himself can still be attempted. The planning application stage may be the only realistic chance of achieving the objective - it is vital to win.

49. There is no right of appeal except in one very specific situation. Any decision can be challenged in the High Court if it can be shown to be 'perverse'. This called 'Judicial Review'. To succeed is has to be shown that a reasonable Council would not have reached that decision or that they failed in some way to follow proper procedures. It is very unlikely that a waterway group will be able to show this and the costs will be high.

50. Failure to follow proper procedures may also be a ground for reporting the Council to the Local Government Ombudsman but this is unlikely to result in a change in the decision since the Council would have to revoke the planning permission and pay compensation. In view of the time scale of getting a complaint heard it may be too late by then, anyway.

51. If the Council has supported the group's case, that may be the end of the matter. You should however be prepared for the developer to appeal to the Secretary of State (see below).

APPEALS

52. All planning decisions can be challenged at an appeal if the developer is unhappy with either the decision to refuse planning permission or any condition applied to an approval. Unfortunately, the right of appeal extends to the applicant alone - objectors can only appeal to the courts in the circumstances set out in paragraph 49 and they rarely can challenge the merits of the decision itself.

53. Appeals have to be made to the Department of the Environment Transport & the Regions (or the Welsh Office) within six months of the decision. Appeals can also be lodged if no decision is made within eight weeks of submission.

54. Appeals can be dealt with in one of three ways:

    (a) Written representations (exchange of written cases) - the most common, easiest, cheapest and quickest method.

    (b) Informal Hearing (a meeting takes place between the parties concerned with an Inspector acting as chairman) - these are increasingly used to avoid the costs and complexity of the formal Inquiry.

    (c) Public Inquiry - a formal (quasi-legal) hearing where both main parties are likely to be represented by a lawyer(s). This is likely to be the most common procedure where there are major objectors to a proposal and might be used where a canal society is actively involved. This can be costly (a competent barrister can cost £5000 per day) but the group could send a member to represent it. This will cost little and may have some advantages. If the group is supporting the Council's case they may be glad to present a joint case.

55. Whichever method is chosen (only the Council or the appellant are involved in the choice - objectors will not be asked.) it is vital to be clear of the timetables involved and to stick rigidly to them. Your original objection should be taken into account. It is not essential (but extremely desirable) to supplement any previous comments.

56. This should consist of a much fuller statement in support of the case. There is no particular recommended form for the statement but it should be clear, carefully argued and should stress not merely what is wrong with the proposal but (if possible) how it can be made acceptable. Inspectors are likely to be more impressed by constructive argument.

57. The statement can refer to other similar cases where there has been a successful outcome, and should talk particularly about the benefits a restored canal can bring - there is plenty of documentary evidence to draw on showing job creation potential and environmental improvements which have followed restoration. Photos / artists' impressions if appropriate may be helpful. Above all, make the presentation businesslike in terms of content and appearance. In the case of an Inquiry prepare a number of copies available for circulation to the main parties and the press.

58. The actual Inquiry will be a fairly daunting event unless you are used to legal or semi-legal proceedings. It is important that the case to be presented is well prepared before the day. There will be very little chance to do much quiet thinking on the day itself.

59. The Inquiry is presided over by a Planning Inspector. He or she may be a planner, or a solicitor or another professional. It is unlikely that he will have any knowledge about waterways and he must be treated with great respect. Losing one's temper with him is likely to do the case serious harm however good the argument. Supporters should be told that banner waving and chanting are unacceptable forms of behaviour.

60. In the vast majority of cases the Inspector, and he alone, will be responsible for making the decision so everything (short of bribery) should be done to get him on your side. He will open the proceedings at 10 a.m. (on the dot, usually) so those attending should be there early.

61. The Inspector will usually start by explaining the procedure for the Inquiry. This will broadly follow a set pattern, starting with his introductory remarks followed by the case for the appellant (including any witnesses) with the council then being given the chance to ask questions ('cross examination'), then the Inspector will ask any questions he has. The appellant's advocate may ask further questions of his witness on any points which have arisen during the questions (re-examination'). The Council will then present its case and be subject to cross examination as before. Third parties will then be asked to make their statements and be ready for questions from either side and from the Inspector. Both sides will then close their cases.

62. The Inspector will visit the site to see for himself. At the site visit there can (and must) not be any further discussion of the case. The decision will be sent out later - it may be a few days but is most likely to be some weeks - or even months away. The decision can only be challenged if there are any legal points where it is defective. The merits of the case cannot be re-examined.

LISTING OF BUILDINGS

63. The planning system recognises the importance of our built past and allows the Secretary of State (for Culture Media and Sport) to produce a List of Buildings of Special Architectural or Historic Interest. Various criteria have been set out to guide him in deciding what to list. The basic criteria currently used are:

- all buildings built before 1700 which survive in anything like their original condition;
- most buildings built 1700-1840;
- buildings of definite quality built 1840-1914;
- selected buildings of high quality built 1914-1939.

A few post-war buildings of exceptional quality have also been listed. The actual listing is done by surveyors who make recommendations to the Secretary of State.

64. There are basically two ways that a new listing occurs. The country is being re-surveyed - an intensive study is done of a town or rural area and (usually) a number of buildings are added to the list. Alternatively anyone can write to English Heritage (or CADW in Wales) to draw attention to a building which could be considered.

65. If a building - which includes structures such as locks, bridges and even milestones - is considered to be of particular historic interest and it is thought suitable for listing, the group should consider writing in to propose listing. Before doing so, as much research as possible should be done. If there is an immediate threat (see comment on 'spot listing') the group should send details with as much information as it has and follow up later. The proposal should explain as much as is known about the history (date of building is very important) and why it is special; for example that it is the first concrete bridge or an early example of some special building technique. The special historic interest could be that it was associated with someone famous - Brindley's birthplace, for example.

66. Although the power to list buildings rest solely with the Secretaries of State, local authorities have the power to 'spot list' buildings; a procedure which provides a six month breathing space. During that time the building is listed but it requires the Secretary of State (S of S) to confirm that listing for it to become permanently protected. If the listing is not confirmed by the S of S the listing ceases and the Council may be liable for compensation.

67. So if something becomes listed, what are the implications? Basically it means that the building cannot be altered in any material way without first gaining listed building consent. It may also mean that grants may be available for works to improve the building (e.g. replacement window frames which match better the original character) and it will mean that some works which require consent are VAT exempt. Alterations will require an application to the Local Planning Authority in a similar way to a Planning application. Such an application is more carefully scrutinised and may need to be referred to the S of S before it is approved. There is a presumption against the demolition of a listed building but it would be a mistake to assume it will automatically be turned down.

68. A developer who finds a listed building in his way may be more amenable to talk to objectors because he knows he will have an uphill battle. It may be able to get concessions in exchange for your support but use this option with great care.

69. The Authority will also have to consult certain statutory bodies for advice. These learned specialist bodies (e.g. Victorian Society) may be interested to hear comments from other interested parties before they respond, but there is little time for this as they have limited time to respond. It is worth contacting the local civic society if there is one. The Authority will probably accord more weight to the views expressed by these bodies than the views of a canal society because the former are recognised as the experts in dealing with such proposals. A jointly agreed response would probably carry significant weight.

70. Where the proposal involves alterations to the building it should be remembered that however desirable it might be to keep the building exactly as Brindley designed it it, or with the original stable doors on, if a new use is not found for the building it may just be left to rot - no one wins then. So, a group should not automatically fight to retain every little feature. It should stand back and look at the essential characteristics of the building and preserve or enhance those. It is worth discussing the details with the Council or the architect so as to keep the original features as far as possible. If they conflict with the new use, can they can be incorporated in the design? If a door is no longer required as a door, can be blocked with dark glass or a contrasting brick so that it still shows as a door.

71. All buildings change with time because of changes in the way we live and work and listing should not be used as an excuse to fight any changes at all. What the listing should achieve is a building which shows how or why it was originally built, with sensitive changes which allow future generations to understand its significance.

CONSERVATION AREAS

72. It is all very well to preserve buildings of character but it is often the case that areas of character are made up of buildings which individually are of little merit. In recognition of this, the Act gives the Council power to designate Conservation Areas. These are areas which have a particular character or appearance it is desirable to preserve or enhance and the designation prevents demolition of buildings without the consent of the Council. It also gives some protection to trees which cannot be felled without giving the Council six weeks prior notice.

73. Areas which have been designated are quite diverse but include city squares and sections of canal. Councils review their areas from time to time and they may consider sections of canal in your area to be worthy of protection. If there is an area which might benefit from preservation and enhancement the group could make a case to the council. The ‘enhancement’ aspect is important because the designation is intended to go beyond just preservation (i.e. pickling in aspic) to encourage active measures to improve it and invigorate it sensitively. Many Councils have a (small) budget for improvements to such areas - there may be grants for works to repair a building or carry out paving or tree planting works.

74. Planning applications are required for developments within Conservation Areas just as for any other area but they must be publicised in the press if they are judged to materially affect (positively or negatively) the character of the area. In any case, it is the duty of the decision maker to assess whether or not the development will preserve or enhance the character and in making his decision he must show that he has thought about that aspect. He will need very strong reasons if his decision does not preserve or enhance.

75. In addition, conservation area consent will be needed to demolish buildings in a a Conservation Area (certain small buildings may be exempt) and again, this application must be publicised in the press. If an approval is given, it may be subject to a condition preventing demolition taking place until the replacement building is ready to be started so that an unsightly gap is not left in a frontage.

76. Applications in Conservation Areas are dealt with in a similar way to other planning applications (see above). Clearly if there are objections it will be necessary to show why it will adversely affect the character of the area. It must however remember that the object is not ‘preservation at all costs’ - just as indicated in para 70 a building with no use and no life is likely to decline - a canal wharf preserved as a series of empty shells of buildings may be historically correct but it will deteriorate if no one is willing to maintain it. Buildings sensitively converted are much more likely to survive.

CONCLUSION

77. The planning system is very complex. There are few people who can honestly say they understand all aspects of planning. The message is that those concerned should not hesitate to ask. Local authority staff have been given a bad press - most are anxious to help and it is well worthwhile making friends with the officers who deal with the areas in which you are interested. A waterway group should do this regardless of whether there is an imminent threat of development. In this way the group will be ahead of the game.

78 There is a wealth of experience in the IWA about planning problems and how to try and resolve them. Not every case has been won, but the message is getting across. Waterway groups should keep up the responsible image which has been developed, argue sensibly and constructively. Any letter you send, any document produced should be neatly typed - a planning officer will be, much happier if he can read what is written. It can be useful to send copies of your papers to IWA branch, interested parties and groups. There are usually two or three political groups on councils and cross-party support is beneficial. Copies all papers should be kept for reference.

79 Finally, remember that the future of part of the waterway system may be in your hands, so they need to be ever vigilant.

BIBLIOGRAPHY

This paper is intended to give a general overview. For more detail there are a number of texts such as: Sir Desmond Heap's Outline of Planning Law and Malcolm Grant's Urban Planning Law. It must be stressed that neither (indeed no) text is up to date and must be read with care.

Government advice is contained in Planning Policy Guidance notes - these are generally easy to read and may be worth obtaining if a case is likely to last any substantial time.

The following apply in England only:

PPG 1 General Policy & Principles
PPG2 Green Belts
PPG4 Industrial & Commercial Development and small firms
PPG7 Countryside
PPG12 Development Plans
PPG13 Transport - see para 5.8 especially
PPG15 Planning & the Historic Environment
PPG16 Archaeology and Planning
PPG17 Sport & Recreation
PPG 21 Tourism

In Wales:

Circular 60/96 Planning & Historic Environment - Archaeology
Circular 61/96 Planning & Historic Environment - Historic Buildings & Conservation Areas
Planning Guidance (Wales) Planning Policy - covers all aspects
Technical Advice Note (TAN) 5 Nature Conservation
(TAN13) Tourism

Public Inquiries - Presenting a Case

by
Philip G. Sharpe
BSc, CGeol

INTRODUCTION

1. Presenting a case at a public inquiry can be a daunting prospect for anyone unfamiliar with the process. For those with some knowledge the worry is more that of having the time and expertise to research and present their case to its best advantage, and of the uncertainty of the outcome. This paper aims to demystify the process and offer some practical advice based on experience of what needs to be done, when, by whom and how.

2. The author has, through his position as Conservation & Planning Officer for Lichfield Branch of IWA and as Vice-Chairman of the Lichfield & Hatherton Canals Restoration Trust, gained experience of presenting both written and oral evidence to 4 local plan inquiries in Staffordshire, an informal hearing, and a highways inquiry for the Birmingham Northern Relief Road (BNRR). He remains an amateur compared with the barristers often employed in such inquiries, but his advice comes considerably cheaper!

3. Public Inquiries (PIs) are a way of injecting some democratic accountability into the more controversial planning decisions of the executive. However, they can not be considered in isolation. They come towards the end of a long and complicated planning process, early involvement in which may avoid the need to spend so much time and effort at the PI itself.

THE PLANNING SYSTEM

4. Waterway campaigners may become involved in the planning system for a variety of reasons. They may be concerned with protecting or improving existing navigations, their structures, environment or development prospects, or with promoting the protection and restoration of former waterways. The main areas of planning affecting waterways are the development plans of local authorities, development control (planning applications and enforcement), and the programmes of national government departments and agencies. The legal, technical and professional literature on these processes is enormous [2], but government, both local and national, is publicly accountable and has a democratic duty to inform Inspector's Report and involve the public in a way that is essentially comprehensible to the interested amateur.

5. The procedures described relate to England but are not much different in Wales except that the Welsh Office replaces the Departments of Transport and Environment. In Scotland the Scottish Office Environment Department covers both environment and transport functions and the legislation and terminology is different. Inspectors are called 'reporters' and 'roads' used instead of highways, whilst proofs of evidence become 'precognition'. The many other differences in Scotland for road proposals are set out in the *Campaigner's Guide To Road Proposals* [8].

Development Plans

6. Local authority development plans consist of Structure Plans and Local Plans in areas with counties and districts, and Unitary Development Plans in areas with unitary authorities (London, the metropolitan areas, Wales and various other new authorities now being created). Counties (and National Park authorities) may also prepare a separate Waste Plan, Minerals Plan or Aggregates Plan. All these plans go through several stages during which waterway groups can influence their contents to favour waterway conservation and restoration. There are some anomalies: where Development Corporations exist these are independent planning authorities with their own, less democratic, procedures outside the normal system, but many of these are now being wound up.

Structure Plans

7. Structure Plans are prepared by County Councils and deal with general targets and strategies, but these constrain many of the development policies of the Districts. When they are due for review the consultation period can be used to propose new or amended policies to protect and conserve waterways and promote their restoration. If there are objections to the published plan an Examination-In-Public (EIP) will normally be held. Unlike a PI, however, its purpose is to discuss significant issues rather than hear objections and participation is by invitation only, so an objector will need to have good reason to be selected. After a report by the EIP panel any proposed modifications will be published and a further objection period allowed, after which adoption tends to be a formality.

Local Plans & Unitary Development Plans

8. Local Plans and Unitary Development Plans are the main source of policies affecting inland waterways. Some authorities are very conscious of their waterways and include excellent policies protecting and promoting them, but others are less helpful. The process of preparing a plan usually starts with a Draft For Public Consultation which is advertised and displayed with a period allowed for public comment. After some considerable time a revised Deposit Plan will be published with a 6 week formal objection period. A Public Local Inquiry will then be scheduled, but at this stage many authorities are prepared to discuss individual objections and propose changes to reduce the areas of contention and the length of the inquiry. These may be published as Proposed Changes and even Proposed Further Changes, each with an opportunity for comment, whilst behind the scenes negotiations may continue right up to and during the PI itself.

9. After the PI the Inspector produces a report, Proposed Modifications are published and are subject to further representations, and finally the plan is adopted, although a second inquiry is technically possible. The whole process takes many years and although proceeding at different rates and to different timetables, most councils are now well along the road and most PIs have been held. Although plans are generally for 10 years, the length of the planning system means that many will have only a few years left to run after adoption before the whole process starts again!

Objections

10. When objecting to policies or lack of policies comments should be specific rather than general, and preferably quote the exact wording of policies or recommendations the objector wishes to see included. This makes it easier for the council or Inspector and improves the chance of success. If the council can be persuaded to make the changes wanted, and the earlier in the process the better the chances of their acceptance, the need to appear at the PI will be avoided. A group wishing to object should ask to be put on the consultation address list at an early stage and persist until it is. Every opportunity to comment, in support if necessary, should be used so as to keep the group's name on the consultation list for future stages. It is important to respond before the deadlines, even if only briefly, otherwise the objection will not be “duly made” and the council or Inspector will not have to consider it. But a registered objector can always elaborate the objection later. Unsatisfied objections should be repeated at each opportunity, because every consultation stage is treated independently and previous comments will not be carried forward. An objector should never withdraw an objection until completely satisfied with a proposed change, and even then the withdrawal should be made conditional on its adoption.

Development Control

11. When planning applications are refused (or granted subject to conditions) the applicant has a right of appeal and this can be dealt with in writing, at an informal hearing, or by Public Inquiry. A waterway group might be involved as objector or even as applicant at a planning appeal hearing.

The informal hearing is just that, and a fairly simple and painless way of discussing the issues round a table with an Inspector who acts both as chairman and investigator. The courtroom type procedures of a PI are avoided and the less confrontational atmosphere promotes a better understanding and willingness to compromise. If the matter is important enough to warrant a Public Inquiry the format will mirror that for development plan inquiries, but somewhat simpler being concerned with a single main issue. Occasionally a major development, perhaps even one promoted by the local authority itself, will prove so controversial that the relevant Minister will "call in" the application and order a PI. This could apply, for example, where the County Council plans major highway improvements.

12. For further details on all aspects of the local authority planning system see *Town and Country Planning for Beginners* [6], and *Campaigners' Guide To Local Plans* [7]. For the official guide to development plan procedures see *Development Plans - What You Need To Know*, known as the Brown Booklet [1].

Government Departments & Agencies

13. In theory any government department or agency might plan a development which conflicts with the interests of an inland waterway. In practice the most common source of conflict has been the Department of Transport (DoT) - now part of the Department of the Environment, Transport and the Regions (DETR) and its Highways Agency which is responsible for motorways and trunk road construction. The DoT was often reluctant to provide navigable culverts under new highways for waterways being restored. The IWA and waterway societies have fought and won inquiries against road schemes which would have blocked the Montgomery, Rochdale and Herefordshire & Gloucestershire canals. In other cases the DoT was been more accommodating, but DETR still has not published a policy on this area of conflict between roads and waterway restoration schemes: crossings of the Thames & Severn, Derby, and Lichfield & Hatherton Canals have been sources of dispute. Although not usually challenging the need for a new road, a waterway group may be objecting to its preferred route or asking for changes to its alignment or structures to accommodate a waterway. New highways these days can be private toll roads (e.g. BNRR), rather than government funded but the promoter is still the DETR and the PI procedures remain essentially the same [5]. Other PIs might arise from opposition to orders under the Transport & Works Act which has replaced many Private Bill procedures in Parliament.

14. The procedure for a highway scheme is less certain than for many other developments, but there is now a greater recognition than in the past of the need for public consultation and acceptance. Nevertheless, the long gestation period of many road schemes, the frequent changes of plans, priorities, funding and highway policies mean that schemes can suddenly disappear or resurface without warning. The first public involvement is too often the publication of Line Orders, by which time all the main decisions have been made. If substantial objections are received a PI will then be arranged. Although the Inspector is independent the final decision on the Inspector's report and recommendations will be made by the Secretary of State for the Environment, Transport and the Regions.

15. An excellent and comprehensive guide to road planning, road inquiries and campaigning against roads is the *Campaigners Guide To Road Proposals* [8], which goes into far greater detail than possible here and is essential reading for anyone seriously involved.

THE PUBLIC INQUIRY

Anticipation

16. Anticipation of the possibility of an inquiry is an essential part of preparation. With local plans this is not difficult, but Highway schemes are too often sprung on objectors at short notice when

the DETR is fully prepared. Important reading is the latest revision of the Trunk Road programme [4], but a waterway group will need to contact its local Highways Agency office to find out how particular schemes are progressing. It should ask to be put on its consultation list and remind the office at intervals of the groups concerns if it goes too quiet. If it appears that a road scheme may adversely affect a waterway, a campaign of opposition should be initiated as soon as possible, without waiting for the orders to be published. As with local plans, if faced with a PI then to some extent the group has already failed to convince the Agency. However, it still has to prove its case, and the group will now have an opportunity to convince an independent Inspector. The advice which follows is based on major inquiries and objections. The same principles apply to the simpler case but the extent of the work involved will be not so great.

Preparation

17. The announcement that a Public Inquiry is to be held should be the start of some serious thinking on how to prepare for it in detail. It is never too soon to start because it can take many days, weeks or even months of work to prepare thoroughly. The group should draft out the main points of its case and make a list of supporting evidence required, actions needed and the likely timescale. This may include research on general or technical matters, reading the official evidence, evidence from other objectors, comparisons with other cases, costings, professional reports and representation, witnesses, supporters, fund raising, publicity, etc. The group should decide who is going to do what and by when, and appoint one person to oversee the preparation and presentation of the case. When co-ordinating contributions from several witnesses they should be persuaded to adopt some consistency of style and avoid unnecessary repetition. To do the job professionally will require someone with access to a word processor and printer, an organised filing system and the time, patience and persistence to follow up leads and explore every avenue to maximise the strength of your case.

Information

18. The essential background information for a public inquiry will be made available as a series of “core documents” available by arrangement with the programme officer, or at bigger inquiries available in a library or an objectors' room. Of course these documents have been selected to support the promoter's case, if objectors think other documents should be considered then they will have to cite them (for official documents) or produce copies or abstracts with their evidence. As evidence and responses are submitted a second sequence of numbered documents will be built up and held by the programme officer whom objectors may need to consult regularly to keep up to date. Reading all this and making notes of relevant information can be very time consuming and photocopying may be costly, although many programme officers will use their discretion for reasonable requests from voluntary organisations.

Supporters

19. After the first day, when many people turn up out of curiosity and the more militant groups might organise a mass demonstration, the numbers of the public attending usually diminishes rapidly. Some sessions are conducted entirely between opposing barristers with no public at all present at the so-called public inquiry! So anyone who does turn up to support objectors will usually be noticed by the Inspector, and a good sized and well-behaved audience can be a useful demonstration of public support. Supporters can also help beforehand with letters of support to complement the objector's main evidence. Some may have already written in as individual objectors but are not appearing, whilst others may be prepared to write with their own reasons for supporting the case. Where appropriate these letters, whether direct to the waterway group or copies of letters to the authorities or the Inspector, can be collected into an appendix file and particularly pertinent remarks highlighted as part of the group's presentation. Supporters who are prepared to appear can be called as witnesses and their evidence co-ordinated with the groups. On the other hand it can be useful to have one supporter appearing independently at a later date. That

way if the opposition spring any nasty surprises or make contentious claims in their closing remarks, too late for the group to counter them, the independent supporter can be briefed to deal with them (this worked very well at the BNRR PI).

Fund Raising & Publicity

20. The biggest investment in fighting a public inquiry will be in the time spent researching, preparing and presenting evidence, but there will be incidental expenses in postage, telephone calls, printing, photocopying, travelling, etc. For major inquiries when consultants need to be employed the costs will be significant and may absorb money the group would rather spend on their normal activities. It may consider having a fund raising appeal specifically for the costs of the PI.

21. Whether aimed at raising funds to fight the inquiry or just taking advantage of involvement to publicise the cause, there is much to be gained from publicity. Press releases, articles for newspapers or magazines, radio interviews or local television news items are all possibilities. The group may also consider enlisting the support of local celebrities, councillors, MPs and MEPs to enhance your standing or for their influence.

Pre-Inquiry Meeting

22. All local plan inquiries and most other major inquiries now start with a pre-inquiry meeting once the Inspector and programme officer have been appointed and the inquiry start date has been set. All registered objectors will be invited and should endeavour to attend. It will deal with the scope of the inquiry, procedures, programme, venue, sittings, dates, times, facilities, site visits, availability of information, submission of evidence, deadlines, etc. Although notes of the meeting will normally be distributed, those not there will miss the opportunity to ask questions for clarification and possibly to influence certain choices.

23. For local authority PIs the venue will usually be the council chamber whilst major road inquiries may move between two or more venues, not always chosen for the convenience of objectors. Typical sitting times are Tuesday to Thursday 10.00 a.m. to 5.00 p.m. with an hour for lunch, and Friday 10.00 a.m. to 1.00 p.m. However, objectors often want some evening sessions for their convenience and the pre-inquiry meeting is the best time to ask for this. They will need to be polite but firm if they are to persuade the Inspector to exercise his discretion on this.

24. A long inquiry will take breaks of two weeks or more after sitting for sessions lasting anything from 4 to 14 weeks, usually breaking around Christmas, Easter, spring and summer holiday periods. Immediately after the pre-inquiry meeting is the best time to approach the programme officer with any special requests for appearance dates whilst the overall timetable and sequence is still being finalised. Local plan inquiries will often rigidly follow the plan sequence of topics but highway inquiries may be more flexible. If a group has more than one objection on different topics it will have to give convincing arguments to be allowed to present them all in one session; it is more likely that it will have to accept several separate appearances. Never volunteer to be first: a later appearance will give more time to prepare evidence and also to attend early sessions to observe how things work. Even if an objector is familiar with PI proceedings the opportunity to see the opposition's barrister and the Inspector in action can help to better judge presentation and responses to questions.

Inspector

25. For a local plan or development inquiry the Inspector will usually be a professionally qualified planner, experienced, competent and knowledgeable. For road inquiries DETR, however, selects its Inspectors differently. One third of its panel are planners, engineers, or lawyers, but the remainder are retired military men from the army, navy and air force who may have little directly relevant professional experience or knowledge. However, objectors should always treat Inspectors

with respect, be prepared to explain things which they do not understand, but avoid lecturing them on matters they are familiar with. Objectors should never argue with Inspectors, but stand firmly for their rights if not happy with the conduct of the proceedings.

Programme Officer

26. The programme officer is the main point of contact for information in all PIs and worth cultivating. A group which makes itself known without pestering the officer and you will usually get help with obtaining information and copying documents. The inquiry library may be more of a concept than a reality so persistent questioning and lengthy reading sessions may be needed to uncover all the evidence relevant to the case. In particular, the evidence from other objectors and counter-objectors which can affect the group is being received and revised continuously, sometimes at the last moment, so a co-operative programme officer can help ensure that the group does not miss too many tricks. For local plan PIs a group will receive one or more questionnaires asking how it wishes to proceed; by withdrawing, in writing, by appearance, by presenting a joint case with other similar objectors, etc. The group should always reply but keep its options open: once it has opted out of the programme it can not get back in.

Written Evidence

27. Simple issues where a group feels that it can make the case in writing as well as or better than in person should be dealt with that way. The PI Inspector is obliged to give equal weight to written representations because many people simply can't spare the time to attend in person during the working week. However, they forego the opportunity to question the opposition, but equally avoid the ordeal of being cross-examined by counsel. Because of the limited opportunity for response a group should try to submit written evidence as soon as possible, preferably well before the programmed date. That way if the council or government department say something in their response (sometimes called "rebuttal") with which the group disagrees, it will be justified in asking for more time to submit additional evidence to counter it. Although not officially allowed for, in practice most inspectors will permit such supplementaries provided they are relevant and within the inquiry period. Plans and photographs are helpful in illustrating your evidence and reminding the Inspector of a location and its visual aspects. The group may be asked to supply multiple copies of their evidence which could be expensive if lengthy or well illustrated. In practice this is usually only expected of public or larger bodies and the programme officer will often agree to duplicate copies. However, he may not be able to copy large plans or colour photos so the group should be prepared for this expense.

Oral Evidence

28. Giving oral evidence to a public inquiry can be rather a trial to those unfamiliar with public speaking. They cannot hope to match the polished performance of the opposition's advocate who will usually be a professional counsel or barrister. But bear in mind that many members of the public appearing are in a similar position and the Inspector is quite used to making allowances for the inexperienced. An objector should go to some early sessions as an observer to see how other people present themselves and will find that growing familiarity with the procedures and others' attempts helps dispel some of the fears. It is surprising how often people can rise to the occasion if they are convinced of their own case and determined to try their best. The overconfident, on the other hand, may skimp on preparation and get out of their depth in questioning, or try to bluster their way through. The important thing is not to panic, stay calm and in control. Objectors should not worry about showing nerves: it is natural early on but they will soon settle down. A degree of courage and confidence is needed and the ability to argue a point - some people positively relish this! If still worried, they should try rehearsing their presentations with friends who can also ask you awkward questions that might arise to give them experience in answering them. Making concessions to get out of tricky situations should be avoided.

29. Although presented orally, evidence should still be in writing and this “Proof Of Evidence” must be lodged with the inquiry by the specified date, along with proofs or statements from all witnesses and any supplementary papers, plans, etc. The time limit will typically be 6 weeks before the objector's scheduled appearance, with the Response evidence lodged 3 weeks before. However, this can be changed or added to this later, and if really necessary even minor changes can be made on the day if the Inspector is given revised copies or asked to manually alter the record. If there are several documents it will help to give the Inspector a list and to give them distinctive references (e.g. IWA.1 etc.). At major inquiries the Inspector may allocate inquiry reference numbers.

Changing The Rules

30. Because this is a public inquiry and any attending members of the public should be able to follow the proceedings it was until recently normal for all evidence to be read in full and anything not publicly presented could not be taken into account. However, PIs are getting longer and longer as the professional advocates increasingly employed try to outweigh their opponent’s evidence by sheer volume. So the government has changed the rules and it is becoming the norm in many inquiries to take proofs of evidence as read, thus totally bewildering the audience who hear questions on evidence which it has not heard or seen! The public now have to seek out the programme officer and request a copy of this unseen evidence in order to follow the proceedings or they may as well not bother attending (thus negating the whole point of holding the inquiry in public in the first place).

31. The rule changes also may require objectors to produce a summary of their evidence when it exceeds a certain length, typically 1500 words, the summary not to exceed 10% of its length or 1500 words. In such cases the summary only can be read, but cross-examination still takes place on the full evidence. Needless to say the promoters will usually be given time to read their evidence in full if they wish; only the objectors seem to be subject to curtailment. If this seems unfair and undemocratic objectors should protest at the outset, preferably at the pre-inquiry meeting. The author achieved equality of treatment at the BNRR PI that way.

Witnesses

32. If its case has several facets or involves technical details a group may want to call several witnesses to deal with particular topics. It will need one person to act as chief witness or advocate to make opening and closing statements and introduce the other witnesses. It should try to agree beforehand with the opposition counsel who they intend to cross-examine and if they will do so after each witness (the usual procedure) or wait until all the group's evidence is presented. The latter avoids conflict with questions being asked on issues to be covered by later witnesses, but may mean a witness having to come back on another inquiry day.

Procedures

33. It is helpful to provide the Inspector and opposition with a list showing the names, qualifications and order of appearance of a group's witnesses, the subjects they will deal with, and the estimated time required to give evidence. Of course the time needed for questions and cross-examination can only be guessed at, but whatever seems reasonable should be doubled! The programme officer and Inspector would rather that time was left over in the allocated slot than have to extend it, disrupting the following objectors, or to bring an objector back another day to finish. Many objectors seriously overrun, and it is only the fact that others withdraw or go to written evidence after the programme is published that allows time for adjustments. Even so, many inquiries exceed their estimated time.

34. Once the inquiry starts the timetable is continually changing and it is the responsibility of the objectors to keep up with this, especially if they are interested in hearing other people’s evidence.

They should not expect the harassed programme officer to contact them except about their own appearances. The officer will reprint the programme sheets for several weeks ahead as necessary but it may take several telephone calls or visits to get the information required. Objectors need to be flexible about their appearance dates and be prepared for adjournments during longer cases. It helps if they have understanding bosses or can leave their presentations to those more available during normal working hours.

Consultants

35. Consultants are expensive to employ and groups should try to do as much as possible "in house", calling on the resources of the group's membership and friends. The IWA and other waterway societies between them have considerable experience of planning matters and public inquiries, and the advice of their Honorary Consultant Engineers and other experts is also available. Groups should explore what other help is available first before commissioning outside consultants. However, if detailed technical advice, plans or professional representation is important and the necessary funds can be raised then there is no doubt that they will enhance the respectability of the case.

36. A group may need to employ professional engineering consultants to produce, for example, an alternative design for a major development or a road alignment allowing for a canal bridge. As voluntarily raised funds are always scarce it should commission only the minimum detail necessary to make the case. With road inquiries the engineering consultants working for the highways authority will often co-operate and convert rough drawings into fairly detailed plans, if a group is seen to be a serious objector with a sensible alternative. Making friendly contact with their engineers at an early stage can pay dividends later. Where an objector is asking for extra expenditure, for example on a bridge, the promoters may seek to maximise their estimate of costs. The objector will need to get independent costings and may need to challenge the basis of their calculations on deferred expenditure.

37. Some inquiries may also raise legal issues which can be tricky to deal with. The Inspector is unlikely to be a lawyer. If a group thinks the Council or Department's legal statements are wrong, and have some knowledge of the relevant legislation, then it should not let their evidence go unchallenged. A group may need to seek legal advice although a PI is not the venue to resolve legal disputes which may need to be decided by a court.

Presentation

38. Presentation is important. Witnesses should be confidant, relax, speak clearly, using the microphone if provided, and address the Inspector. Standing or sitting tends to be determined by the layout of the room, the size of the audience and the witness or the Inspector's preference. If using visual aids someone should be in charge who knows the cues, and has all the documents to hand. The atmosphere for a local plan inquiry is less formal than for a highways PI. Local planners are generally friendly and professional, trying to do their best to resolve competing demands. A highways PI is more confrontational and the atmosphere more like a courtroom.

39. Of greater importance than delivery, however, is the content of the evidence. Obviously this depends on the particular case but some advice is universal. A waterway group should never assume that the Inspector knows the geography of the area or the background to the conflict. Its representative should start with a brief description of each and elaborate where necessary, but be prepared to skip sections in presenting the evidence if the Inspector wants to take them as read. If its case relates to waterway restoration the group should include a briefing on its history, present condition, restoration proposals and achievements, costs and benefits, and extent of support. The national picture should be given first to set the context and then details of the local project. A few maps and illustrations will be well received, but a lecture should be avoided.

Equipment

40. Most PIs these days will make slide and overhead projectors available by prior arrangement with the programme officer. Major inquiries may have video projection facilities and even use video cameras to project documents and maps. Some objectors have been known to produce slick computerised presentations. But they should always discuss the availability and acceptability of such equipment with the programme officer and/or Inspector well in advance and beware of the medium obscuring the message. Well presented written evidence with maps, drawings or photographic prints that the Inspector can take away may be more effective.

Proceedings

41. The inquiry will open with the council or department's case and their supporters, then the objectors are all heard in turn before the promoters present their closing statement. The full sequence of proceedings for objectors is: objector's opening remarks, evidence and witnesses, followed by cross-examination of objector and witnesses, objector's re-examination of own witnesses and the Inspector's questions (if any). Then the promoters present their Rebuttal evidence and witnesses, followed by the objector's cross-examination of them and their re-examination of their own witnesses. Any counter-objections may then be heard before the objector's closing statement and finally the promoters closing statement on your objection. However, for an uncomplicated case not all of these stages may be necessary.

42. The essential for a PI appearance is nothing more than to turn up at the appointed time and explain simply the nature of the objection to the Inspector. If this is sufficient there is no need to elaborate. Inspectors are necessarily patient people but will cut off any irrelevance or unnecessary repetition. Objectors will probably be most comfortable speaking from a text rather than just notes and this has the advantage of being a record of the case for the Inspector and for the objector. It sometimes surprises newcomers that there are no official minutes, transcription or tape recording of the proceedings. The Inspector's only way of recording things is to make longhand notes! Obviously the Inspector only writes down a fraction of what is said, so providing a written copy of your evidence ensures that nothing is overlooked when the Inspector comes to write up a report many months later. It also helps to cope with questioning later on. It is very useful to have a reliable scribe on the team throughout to make notes of any changes in the presentation and any questions asked by the inspector along with the answers given. It is even more vital later on to record the full exchanges which take place in cross-examination, which can not be scripted in advance, and any undertakings to provide information or concessions made. One never knows when an earlier point may be raised again and perhaps a verbal response is misconstrued or taken out of context by the other side. It is reassuring to be able to look up what was actually said and to correct them.

Rebuttal

43. Rebuttal evidence is more often now referred to as the Response but it amounts to the same thing; at this point the promoters have the opportunity to respond to and challenge the objectors' case. The latter have the opportunity to challenge the promoters' response in cross-examination.

Cross-examination & Re-examination

44. Cross-examination is the most nerve-racking part of the proceedings, even for the professionals. Its purpose is to seek clarification of the other side's evidence and sometimes to trap the witness into making statements that were never intended. Whereas the rest of the proceedings are comparatively informal and tolerant of amateur presentation, as befits a public inquiry, the cross-examination procedure is more akin to a court of law, and unless a group can find an advocate equal to the opposition's professional counsel it will inevitably be at a disadvantage.

45. In facing cross-examination the best defences are accuracy, unflappability and determination. Firstly the group's evidence needs to be thoroughly edited beforehand for accuracy to avoid anything that can cause embarrassment. Secondly the witness needs to keep as calm as possible under questioning. Sometimes the witness is asked several seemingly innocent questions carefully worded to get answers which can then be used to discredit the group's case in the final question of the sequence. A witness needs to be able to spot it coming and avoid falling into the trap, although this is easier said than done. Whilst the procedure requires an answer to each question, even if the witness would rather not answer, there is usually scope for expanding on the answer to avoid the inferences which the questioner may draw. The occasional politician's response, answering a different question, may also help throw the questioner off track. Thirdly, the witness needs determination not to agree with the coup-de-grace but to argue the point until the questioner gives up or the Inspector calls a halt. It is worth going to see the opposition's advocate in action (in a long inquiry they may use more than one) to be better prepared for these techniques. However they respond, witnesses will feel afterwards that they could have done better, but should take comfort that the Inspector is well aware of the inequality between the sides and will judge matters on the important issues and not on the point scoring.

46. Conducting cross-examination is also something of a challenge, but an opportunity not to be missed. The group should do its homework on the opposition's rebuttal evidence and find all their weak points. Questioning should be planned to the point of scripting it with possible responses and alternative follow up questions. This may need the burning of some midnight oil if, as often seems to happen, the rebuttal is only produced or substantially revised at the last moment. But if the group needs more time ask for an adjournment. Good preparation is essential if the group is to score any points off the professionals, but it should try to make telling points and not be labour the trivial. It is important to phrase everything as a question because statements will be ruled out of order, but earlier observance will indicate what is acceptable.

47. As well as the formal cross-examination you may be asked questions by the Inspector at any stage. These are straight forward: there is no need to be suspicious, or to argue with, the Inspector.

48. Re-examination is an opportunity for an advocate to undo the damage done to a case by cross-examination. It consists of questions of clarification designed to give witnesses an opportunity to say what they should have said the first time! If the group is not represented by a skilled advocate it may choose to forego this option rather than risk compounding the damage.

Counter-Objections

49. Other people or groups may counter-object to a waterway group's objection, or the latter may in turn counter-object to theirs. In local plan inquiries counter-objectors are in effect regarded as supporters of the council's case and as such have no definite right to appear. In fact the Inspector does have the discretion to allow supporters and counter-objectors to present their cases, although a group may need to remind the Inspector of this at the pre-inquiry meeting or ask by letter for a general ruling. The Council itself may ask the Inspector to consider counter-objections, but usually only in writing as it is generally concerned to minimise the length of the inquiry. Failing that a group could write a letter or present evidence supporting the council's case which also happens to contain its counter-objection arguments. If it adds to the council's own defence to the objection they may, with your consent, present it as part of its evidence or even call the group as a witness.

50. By contrast, in Highway inquiries the standard procedure allows for counter-objectors and a group could find itself appearing on several occasions to counter the arguments put forward for alternative routes which are no better for its interests than the published route (as happened with the BNRR). Where counter-objections are heard it will be before the closing statements.

Closing Statements

51. The closing statement provides the final opportunity for objectors and promoters to briefly summarise their cases. It is the usual practice for the objector to sum up first followed by the promoter. There should be no new evidence introduced at this stage. If objectors think the promoters closing statement includes new evidence, they should challenge this and seek withdrawal, right of reply or an adjournment. Objectors should expect their case to be distorted in the other side's summary, but can portray the promoter's case in the worst possible light, consistent of course with the facts and evidence.

Site Visits

52. Site visits are an essential part of the inquiry process as Inspectors will always be chosen from out of the area. They will familiarise themselves with the sites of contention before and during the inquiry on unaccompanied visits, but will welcome visual evidence to remind them of viewpoints expressed during the inquiry. After the inquiry hearings are completed, or sometimes during breaks in proceedings, the Inspector may be willing to make accompanied site visits. The rules for these visits are very strict and no discussion is allowed, only pointing out of features and views referred to in evidence. The Inspector may be willing to visit other sites nearby, for example to better judge what a restored canal will look like.

53. After the inquiry the Inspector will write a report summarising all the evidence heard and making comments and recommendations to the council or government. This usually takes much longer to write than the duration of the inquiry itself. A single issue planning inquiry report may be ready within a few months but local plan and highway inquiry reports often take a year or more. A local plan report will go to the Council which usually agrees to accept most of the Inspector's recommendations, except where they have been overtaken by events, and then issue a list of Proposed Modifications for a final period of public consultation. Comments only on the acceptance or non-acceptance of the Inspectors recommendations can be made at this stage. A highways report will go to the highways authority, either the County Council or the DETR.

The Decision

54. After considering comments received on a local plan the Council will make final decisions on its contents and it is unusual for there to be any significant changes at this stage. The plan will then be adopted, unless "called in" by the Secretary of State, and the final Adopted version of the plan will be published. Although it is only then that it has legal status, in practice the latest versions will have been used throughout for guiding planning decisions. However, on some occasions controversial developments have meanwhile been decided without full compliance with their Draft or Deposit plans, although planning committees may then risk such decisions being called in by the Minister.

55. The Secretary of State for the Environment, Transport and the Regions is responsible for the decision on public inquiries into road proposals. The Inspector's report and recommendations are the basis on which the Secretary of State makes his decision, although he may differ in his conclusions, wholly or in part, from the recommendations of the Inspector. Ministers are politicians and not infrequently dismiss or ignore part or all of the Inspector's recommendations for political or economics reasons. Alternatively they mat suppress and never publish a report they don't like. Or prepare a modified scheme leading to a new PI. It took several years and pressure from local MPs before the report on the 1988 BNRR Inquiry was released, just prior to the 1994 Inquiry.

Further Actions

56. An adverse decision on a highways inquiry may not be the end of the road, particularly if it goes against the Inspector's report or does not take into account developments since the inquiry. Ignoring the Inspector's recommendations could be grounds for a legal challenge (although this would be expensive) or more practically a reference to the Parliamentary Ombudsman. Alternatively, there may be a case for calling for the inquiry to be re-opened if sufficiently changed circumstances can be demonstrated. Either way a campaign to enlist the support of MPs to challenge the Minister's decision may be the best weapon, especially if the Minister or the government of the day is politically vulnerable. Voluntary groups who are charities, however, must avoid anything which is party political.

CONCLUSIONS

57. At first sight the planning and public inquiry process can seem impenetrable and frightening, but readers should not be put off. If a waterway group is serious about promoting the cause it believes in it must be prepared to follow the public inquiry process. With thorough preparation and reasoned argument it can win or at least achieve a reasonable compromise. This chapter should help it to be better prepared and more successful. Good luck!

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Wildlife Conservation

by
John Pomfret, BSc, MSc, CBiol, FIBiol, FCIWEM
Environmental Consultant

BACKGROUND

1. As agricultural, industrial and urban 'development' have proceeded apace over the last century or so, the natural environment and its wildlife have come under increasing pressure. This is particularly true of the aquatic environment, where agricultural drainage, urban flood defence measures and industrial pollution have contributed greatly to a steep decline in the extent and diversity of natural wetland habitats in the UK. Meanwhile, these developments have also created new habitats, some of which have become important in their own right in wildlife conservation terms; the canal system and worked out gravel pits being prime examples.

2. In parallel with the steady loss of natural wetlands, rising mobility of the population has led to increased pressures on the countryside, to the extent that, in some cases, visitor pressure is severely damaging the features of attraction. In the case of aquatic habitats, the situation is particularly complex, as a wide variety of factors may have an impact on the wildlife conservation value of a habitat. In addition to simple disturbance due to the presence of visitors, river and canal habitats may also be affected by many other human activities or influences [1], for example:

    - pollution by deoxygenating materials or toxic contaminants;
    - nutrient enrichment causing excessive growth of algae (eutrophication);
    - water abstraction (from ground and surface waters), leading to lowered water levels and increased siltation, affecting both ecology and navigation;
    - water transfer schemes, which can lead to transfer of contaminants and spread of alien species;
    - flood prevention measures, which until recently often created straightened channels with standard trapezoidal cross-sections, resulting in loss of habitat diversity;
    - impoundment, which causes profound changes in ecological character where the natural river habitat includes riffle areas;
    - fish stocking and intensive fisheries management, which can be detrimental to natural biological communities;
    - introduction of alien species, which can sometimes out-compete natural species;
    - maintenance of the channel for navigation and the use of inland waterway vessels, where impoundment, dredging, wash from powered vessels and oil pollution are all potential sources of impact on the aquatic ecology.

3. In considering the inter-relationship between navigation and wildlife conservation, it is essential therefore to have a sound appreciation of all the other relevant impacts which may be affecting the wildlife conservation value of the waterway of interest.

4. The danger of loss of or damage to scarce habitat types has led to the introduction since 1949 of numerous legislative measures to protect wildlife and wildlife habitats in the UK. These include protection of particular habitats and rare species, as well as imposition of duties on public bodies to further the conservation of flora and fauna. Protection for wildlife in aquatic habitats is achieved through a wide range of statutory and non-statutory designations of particular sites, as detailed below, but the linchpin of the UK system is the notification of Sites of Special Scientific Interest (SSSI). In addition, some species are listed as requiring special protection and official permission may be required before disturbing or damaging these animals or plants.

5. While certain identified sites or species may warrant specific protection, it is also important to appreciate that the duties of many official bodies in relation to wildlife conservation apply to all of their activities in all locations. The agreement of the UK to the Convention on

Biological Diversity at the Rio Conference in 1992 strengthens this approach and places a duty on the UK Government to promote sustainable development [2]. Much of the direct action in this respect is being carried forward by local authorities under the programme agreed in Local Agenda 21, an agenda for the 21st century. This requires that sustainability is taken into account in decisions on any development, in order to maintain biodiversity. Local authorities are drawing up Biodiversity Action Plans to assist in this approach.

6. All of these wildlife conservation measures are relevant to those interested in navigable waterways. Various navigable waterways have been notified as SSSI and many others harbour flora and fauna of nature conservation importance. The approach to management of navigable waterways is important in influencing nature conservation interests. Operations such as dredging can obviously have a major impact, while boat traffic may enhance or damage wildlife conservation interests, depending on its intensity, vessel speed and local circumstances, especially the channel cross-section and the nature of the bed.

7. Recreational use of waterways and the protection of wildlife conservation interests are therefore inextricably linked. On the basis that discussions to balance the, sometimes conflicting, requirements of these interests will be more fruitful the better the participants are informed, this chapter summarises nature conservation issues of relevance to those interested in navigable waterways.

8. The following sections describe in more detail the legislative framework and practical implementation of measures to protect wildlife in the UK and identify the relevance to the restoration and maintenance of navigable inland waterways. The systems described apply in England and Wales and, with minor differences, in Scotland. In Northern Ireland the organisation is somewhat different, although directed towards the same objectives, and is not covered in detail.

DEVELOPMENT OF UK LEGISLATION

9. The principal steps in the development of UK legislation for the protection of wildlife conservation are summarised below.

National Parks & Access to the Countryside Act 1949

10. Legal protection of sites of wildlife conservation interest in the UK started with the National Parks & Access to the Countryside Act 1949, which established the notification of SSSI, as well as declaration of National Nature Reserves (NNRs) and designation of National Parks, and laid down rules for their protection. It also gave local authorities powers to create Local Nature Reserves. In relation to SSSI, the 1949 Act has largely been replaced by the Wildlife & Countryside Act 1981 (as amended), which extends notification and protection of the sites.

The Countryside Act 1968

11. This Act strengthened many of the powers given under the 1949 Act and imposed a duty on all public bodies and Government Departments to have regard to the desirability of conserving the natural beauty and amenity of the countryside, in exercise of their functions relating to land. This extends to urban, as well as rural areas. PPG9 [3] indicates that this includes safeguarding wildlife. Actions may include use of byelaws to support nature conservation, use of Tree Preservation Orders [4], habitat creation through land reclamation, management agreements with owners and occupiers of land [5] and management of local authority owned land for wildlife benefit and educational activities.

The Wildlife and Countryside Act 1981 (as amended[6])

12. The Wildlife and Countryside Act 1981 forms the principal basis for habitat and species protection in the UK. Under Part I of the Act, all birds and specified animals and plants are subject to a range of statutory protection. Intentional killing, injury, disturbance, or uprooting, of scheduled species (including several riverine species) is prohibited without a licence from English Nature. Part II extended the protection of SSSI established under the 1949 Act and added the requirement for notification of owners and occupiers (previously only the Local

Planning Authority (LPA) was notified). It also introduced additional provisions for creation of NNRs and allowed designation of Marine Nature Reserves (MNRs) and introduction of byelaws for their regulation. SSSI only extend to low tide mark, whereas MNRs can cover marine areas below high water mark.

Norfolk and Suffolk Broads Act 1988

13. This Act established the Broads Authority to manage the Broads as a National Park. The Authority has responsibilities to conserve and enhance the natural beauty of the Broads (including wildlife conservation), to promote the enjoyment of the Broads by the public and to protect the interests of navigation.

The Environmental Protection Act 1990

14. This Act replaced the Nature Conservancy Council by three statutory country conservation agencies: the Nature Conservancy Council for England (English Nature), the Countryside Council for Wales (CCW) - Cyngor Cefn Gwlad Cymru - and the Nature Conservancy Council for Scotland. The latter became Scottish Natural Heritage a year later under the Natural Heritage (Scotland) Act 1991. CCW and SNH took over the duties of the Countryside Commission (in Wales) and the Countryside Commission for Scotland respectively. Coordination is provided through the Joint Nature Conservation Committee (JNCC), which operates using staff seconded from the country agencies.

The Planning and Compensation Act 1991

15. This extended powers of LPAs to further wildlife conservation by strengthening their planning enforcement and development control powers. It also required them to include policies for conservation in statutory development plans.

Protection of Badgers Act 1992

16. This consolidates earlier Acts [7] and makes it an offence to harm badgers or to disturb or damage their setts, without a licence from the statutory conservation agency.

The Conservation (Natural Habitats &c.) Regulations 1994 (S.I.1994:2716) (The Habitats Regulations) (as amended [8])

17. The Regulations are made in response to EC Directive 92/43/EEC (the Habitats Directive) (see below) but also require the various parties concerned to exercise their functions under existing legislation (principally the Wildlife & Countryside Act 1981, as amended), so as to ensure compliance with the Habitats Directive in England, Wales and Scotland.

18. The Habitats Directive and the Regulations cover sets of controls for ensuring:

- the protection of habitats listed in Annexÿ I of the Directive;
- the protection of species listed in Annexÿ II;
- strict protection of particular species, control of exploitation of certain species and restrictions on methods of capture and killing of various species.

Protected sites are known as Special Protection Areas (SPAs) or Special Areas of Conservation (SAC), as described in paragraphs 46 and 47 below. In contrast to SSSI, protected sites can also include the marine environment below low water.

19 In particular, the Regulations impose stricter restrictions than for SSSI in relation to developments requiring planning permission which might adversely affect protected areas, and in relation to plans, consents and authorisations under a wide variety of legislation controlling activities outside the jurisdiction of the LPA. In relation to waterways, the most relevant are the granting of Integrated Pollution Control (IPC) authorisations [9] or waste management

licences [10] or the giving of discharge consents [11]. As well as restricting new applications, the Regulations also require review of existing permissions, authorisations and consents.

Water Resources Act 1991

20. This Act was the principal legislation establishing the National Rivers Authority (NRA) (superseding the Water Act 1989 in this respect) (in England & Wales). A duty was imposed on the NRA by s.16 to further wildlife conservation in the exercise of its functions. The NRA and these duties have since been superseded by establishment of the Environment Agency (EA) under the Environment Act 1995.

Land Drainage Act 1991 (as amended [12])

21. This Act superseded parts of the Water Act 1989 and imposed a duty on land drainage authorities (internal drainage boards and local authorities) to further wildlife conservation in the exercise of their functions (s.61A and s.61B in the amended Act).

Water Industry Act 1991

22. This Act superseded parts of the Water Act 1989 and established the water plcs. Under s.3, these water companies are required to further wildlife conservation in the exercise of their functions.

Environment Act 1995

23. The Environment Act 1995 established the Environment Agency (EA) (in England & Wales) and imposed on it and on Ministers, under s.7, a duty to have regard to wildlife conservation in relation to its pollution control powers and to promote aquatic wildlife conservation in exercise of its other responsibilities. S.6 also imposes a duty on the Agency generally to promote the conservation of flora and fauna dependent on an aquatic environment. S.61 of the Act also adds wildlife conservation to the list of purposes of National Parks and s.62 requires all relevant authorities to have regard to this.

British Waterways Act 1996

24. Under s.22 of this Act, a duty was imposed on British Waterways (BW) to further wildlife conservation in the exercise of its responsibilities, thus bringing it into line with the EA and other public bodies.

SITES OF SPECIAL SCIENTIFIC INTEREST (SSSI)

Notification

25. SSSI are areas of land notified as being of special nature conservation interest, as a result of either their biological or geological characteristics. Identification and notification of sites meriting protection as SSSI is the responsibility in England of English Nature (EN); in Wales the Countryside Council for Wales (CCW) fulfils the same r“le and references in this chapter to EN also apply to CCW. Sites were originally notified under the National Parks & Access to the Countryside Act 1949 but this has now been superseded by s.28 of the Wildlife & Countryside Act 1981 (as amended) and the notes below relate to the current procedure [13].

26. Once a site has been identified as qualifying for SSSI status, EN will 'notify' this to:

- all owners or occupiers (for a site on a BW waterway, this will include, for example, British Waterways but not the local canal society, the IWA or other users);
- the local planning authority;

- the relevant Secretary of State (at DETR or the Welsh Office);
- relevant water & sewerage companies, internal drainage boards and the Environment Agency;
- owners of minerals on the land;
- other affected public bodies (Ministry of Agriculture, Fisheries & Food (MAFF), Forestry Authority etc).

27. The notification will include:

- a letter explaining that the area is of special interest and explaining the requirement to consult EN about listed operations;
- a map showing location and boundaries of the site;
- a statement of the site's special interest;
- a list of operations which appear to EN to be likely to damage the special interest of the site; these are known as 'Potentially Damaging Operations' or PDOs.

28. There is then a consultation period of at least three months, during which time interested parties may make representations or objections. EN officers will respond to representations and try to negotiate an agreement. If disputes cannot be resolved, the final decision rests with the Council of EN. Voluntary bodies such as the IWA may be given the opportunity to put forward their views but have no statutory r“le and the views of the owner of the waterway will clearly have to be taken fully into account. Within nine months of initial notification, EN must confirm or withdraw the notification. They may modify it at this stage to take account of consultation but may not increase the area or add to the list of PDOs. During the consultation period, the site enjoys full protection as an SSSI in relation to PDOs - as explained below.

Site selection

29. Sites are identified on the basis of application of specific criteria within geographical areas known as areas of search, which correspond mainly with counties. Detailed selection criteria are laid out [14] and include naturalness, typicality, diversity, rarity, size, fragility and geographical position. Aquatic sites are generally designated principally on the basis of the plant community, although certain animals such as newts or dragonflies may also be involved in the assessment.

30. Recent work by the EA has developed further the classification of river habitats and has applied this throughout England & Wales in the River Habitat Survey (RHS) [15]. Recognising the rather narrow definitions applied to aquatic sites in the 1989 guidelines [14], a more specific system for assessment of the conservation value of rivers is also under development by the environmental and conservation agencies. This is known as the System for Evaluating Rivers for Conservation (SERCON) [16].

Management and protection

31. The principal mechanism for protection of SSSI is through the list of PDOs. Relevant PDOs for a particular site are selected from a standard list. These operations are not necessarily prohibited but, because they may damage the scientific interest of the site, permission must be sought from EN before carrying out such operations, unless the operation is covered by Planning Permission, a Management Agreement or in case of emergency.

32. Typical PDOs that may be applied to a waterway include:

13b- modification of structure of watercourses by realignment, regrading or dredging;

14- the changing of water levels (e.g. by dewatering);

16a - freshwater fishery management (e.g. fish stocking).

33. An owner/occupier who wishes to carry out a PDO must first seek consent from EN, who will consider the proposal and may give consent or try to negotiate suitably modified proposals. If consent is refused, the owner/occupier must not carry out or permit the operation for four months after the application for consent. To do so is an offence, punishable by a fine of up to £2500.

34. If no agreement is reached within this period, which can be extended by mutual agreement, the PDO may then be carried out unless EN obtains a Nature Conservation Order (NCO) from the Secretary of State under s.29 of the Wildlife and Countryside Act 1981. Where an NCO is in force, any person wishing to carry out a PDO specified in the Order must give 3 months notice, during which time consultation with EN will take place. This period may be extended to 12 months if EN offer to negotiate a Management Agreement (see below). If after this time no agreement can be reached, EN may apply for a compulsory purchase order to secure protection of the site. Note that Nature Conservation Orders relate to specific proposed operations in an SSSI and apply to any person, not just the owner or occupier. There is provision to appeal against an NCO and compensation is available. No navigable waterway is currently directly affected by an NCO.

35. Thus, a PDO must not be carried out in an SSSI, by an owner or occupier, unless:

- EN has given written consent, or
- the consultation period has expired since the date of application for consent, or
- the PDO is carried out under a Management Agreement between the owner/occupier and EN, or
- the PDO has planning permission under the Town & Country Planning Acts, or
- the PDO is an emergency operation and details are supplied immediately to EN.

EN will usually be willing to consent, via the landowners, to existing levels of recreational use and may accept an increase in certain circumstances. However, any proposals for changes in recreational use that fall within one of the defined PDOs for the site will need to be discussed with EN (unless covered by a Management Agreement).

36. On navigable waterways, many PDOs form part of routine maintenance and operational management programmes and may indeed be essential to maintain the scientific interest of the site [17]. To avoid the need for repeated consultation and written consent from EN, routine and planned programmes may be covered by a Management Agreement, negotiated between the waterway owner/occupier and EN staff. Such agreements are EN's preferred way forward and offer benefits for both parties. A Management Agreement can be reached at any time during the notification process or thereafter and will typically include the following items:

- definition of aims and objectives for the SSSI;
- management Action Plan - identifying management tasks to be undertaken, appropriate methods, seasonal timing of operations, locations etc.;
- programme for monitoring the effects of the Action Plan.

37. Where extra costs are incurred as a result of constraints imposed by EN to protect nature conservation requirements, EN may make a financial contribution.

38. It can be seen that the powers of EN are to delay operations, to allow time to negotiate an agreed approach. However, enforcement powers to prevent an operation proceeding after the initial period of consultation has expired lie with the Secretary of State and ultimately, if agreement cannot be reached, in EN applying to the Secretary of State for compulsory purchase powers. There is a body of opinion which considers that this lack of enforcement

powers constitutes a loophole in the law which should be removed and this has been addressed in a Government consultation paper in September 1998 [18].

OTHER UK SITE DESIGNATIONS

39. A variety of other site designations in support of wildlife conservation exists in the UK. It is important for those involved in waterway restoration to be aware of any such sites which may impinge on the waterway of interest, so they can take account of and minimize any potential adverse impacts of restoration and capitalise on any opportunities for cooperation with the bodies involved in management of the sites.

National Nature Reserves

40. National Nature Reserves (NNRs) are declared under s.19 of the National Parks and Access to the Countryside Act 1949 or s.35 of the Wildlife & Countryside Act 1981, where SSSI are regarded as being of national importance. They may be owned or leased by EN or managed in accordance with Nature Reserve Agreements. NNRs are managed primarily for nature conservation.

Local Nature Reserves

41. Local Nature Reserves (LNRs) can be designated under s.21 of the National Parks & Access to the Countryside Act 1949 by local authorities, who must own the site or reach a suitable agreement with the owner. EN must be consulted. As well as protecting wildlife features, LNRs have a particular r“le to play in education and providing access to wildlife areas for local people. Some LNRs may also qualify as SSSI.

Non-statutory nature reserves

42. These have been established and are managed by a variety of bodies, including county wildlife trusts, the Royal Society for the Protection of Birds and the Wildfowl and Wetlands Trust. These voluntary bodies usually own or lease the sites or have a management agreement with the owner.

Second tier sites

43. In many cases, areas identified as being of local nature conservation importance, often with the assistance of the local wildlife trust, have been adopted by local authorities for planning purposes and are usually included in local development plan policies. These sites are generally known as 'second tier' sites and go under a variety of names in different areas. They have quasi-legal status, in that they are referred to in Planning Policy Guidance notes, which LPAs must take into account in preparing local development plans and which may be material to decisions on individual planning applications [3].

UK SPECIES PROTECTION MEASURES

44. Wildlife conservation is also promoted via the route of protection of designated species. The Wildlife & Countryside Act, other specific Acts (e.g. the Badgers Acts) and the EC Habitats Directive detail protection measures for a variety of indigenous animals and plants, including the great crested newt, bats, otters, badgers, water voles, certain fish and a large number of birds. In addition, introduction into the wild of certain species (including some fish) is prohibited. These measures apply throughout the country, not just within SSSI, and waterway restoration plans must take account of any relevant restrictions for species protection.

INTERNATIONAL WILDLIFE LEGISLATION

45. Much of the pressure for wildlife protection has arisen from international agreements and the European Union provides legislative mechanisms that have been widely used for promulgation of environmental legislation, including agri-environment regulations, pollution control and wildlife conservation. The Bern Convention [19] underlies the EC Habitats Directive (see below) and the UK's wildlife legislation, while the Bonn Convention [20] encourages international agreements on migratory species, such as the agreement on bats reached in 1994. The Ramsar Convention [21] requires the conservation of wetlands for waterfowl and several UK SSSI are listed as 'Ramsar' sites. The text of the Convention and details of protection afforded to Ramsar sites are given in PPG9 [3]. The Rio Convention on biodiversity has been mentioned above. This is being implemented through the UK Biodiversity Action Plan [2] and Habitat Action Plans are being prepared for priority habitats, including, for example, chalk rivers and reedbeds.

The Birds Directive

46. The EC Directive on the Conservation of Wild Birds (79/409/EEC) ('the Birds Directive') requires the classification (by the Secretary of State) of Special Protection Areas (SPAs) to conserve the habitats of rare and migratory species of bird. These are of particular relevance to estuarine waterways and areas such as The Broads. SPAs are all SSSI and enjoy the same protection under the Habitats Regulations as SAC (see below). The text of the Directive and details of protection afforded to SPAs are given in PPG9 [3].

The Habitats Directives

47. The EC Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna (92/43/EEC) ('the Habitats Directive') and the subsequent Directive 97/62/EC require member states to maintain or restore listed habitats and species at a 'favourable conservation status' within the community. Habitats defined as 'priority habitats' are afforded more stringent protection. The Directives are currently being implemented in the UK under the Habitats Regulations (as amended) and involve designation of Special Areas of Conservation (SAC) for both habitat and species protection starting in 1998. These sites (referred to by the Directive as 'European Sites') will constitute an international network of sites known as Naturaÿ2000. All SAC (except marine sites) will be SSSI but protection is increased in a number of ways. The text of the Directive and guidance on application are given in PPGÿ9 [3], although the amendments are not included in the 1994 version of the PPG.

48. Designation of SAC and SPAs differs from notification of SSSI in the following respects.

SAC and SPA	SSSI
No statutory consultation is required, although DETR is conducting consultation with interested parties	Consultation period of at least three months
Site selection criteria are dictated largely by Annex III of the EC Habitats Directive	Site selection guidelines are produced by national conservation agencies
SPAs are classified by DETR. SAC are designated by the DETR, after agreeing the list with the European Commission	Notification is entirely a matter for the UK conservation agencies

49 Protection of SAC and SPAs is similar to that for SSSI and is controlled in the first instance by EN, through the definition of PDOs and a requirement to consult EN. Nature Conservation Orders are replaced by Special Nature Conservation Orders (SNCOs). However, protection

differs from that for SSSI in the following ways. Note that developments with planning permission may be carried out in SSSI and in SPA or SAC but see the tablebelow.

SAC and SPA	SSSI
Restrictions on undertaking PDOs at sites subject to Special Nature Conservation Orders have no time limit	Restrictions on undertaking PDOs at sites subject to Nature Conservation Orders have a three month time limit, or twelve months if EN offer to enter into a Management Agreement.
Compensation in relation to SNCOs applies only to agriculture	Compensation in relation to NCOs applies widely.
Byelaws may be made to regulate activity in an SPA or SAC, but these may not restrict the legitimate activities of a statutory undertaker, such as British Waterways or the EA (who have their own byelaw making powers)	Byelaw making powers do not apply to SSSI with no other designation.
Existing permissions (planning, IPC authorisations, waste management licences, discharge consents etc) must be reviewed when a site comes under the Habitats Regulations.	No retrospective review of permissions is required.
The LPA and other regulatory bodies may only give permission for developments that may harm the integrity of an SPA or SAC in cases of overriding public interest, which may be of a social or economic nature. For priority sites (as defined in the Directive), such permissions may only be given on the grounds of human health and public safety.	The LPA must take account of SSSI designations and must consult EN in deciding planning permissions but ultimately the decision is made by the LPA.

The Water Framework Directive

50. In 1996, the EC agreed a Water Policy [22] and has since published proposals for a Water Framework Directive [23]. This covers a wide variety of measures relating to water management, many of which, for example catchment planning, are already implemented in the UK. Of particular relevance here, however, will be a requirement to achieve 'good ecological and chemical status' in surface waters. In England and Wales, river quality objectives are already defined under various Surface Waters (Classification) Regulations and systems for classification of water quality are well established through the EA's General Quality Assessment (GQA) scheme [24]. However, 'good ecological status' has still to be defined quantitatively, so the implications for waterway restoration cannot yet be assessed.

DUTIES OF OFFICIAL BODIES

51. Some roles and duties of official bodies which are relevant to wildlife conservation in and around inland waterways are summarised in the table below. It is important for those involved

in waterway restoration to appreciate the different roles, as any representations are more likely to be taken into account if put forward to the correct body at the first attempt.

Body	Responsibilities
Department of the Environment, Transport and the Regions (DETR)	* Listing of Ramsar sites, classification of SPAs and designation of SAC * Making of Nature Convervation Orders and Special Nature Conservation Orders * Implementation of Statutory Water Quality Objectives, Water Protection zones etc * Native flora and fauna policy * Biodiversity Action Plans
Ministry of Agriculture, Fisheries and Food (MAFF)	* Flood defence policy * Water level management plans initiative * Control of introduction of alien species * Agricultural Codes of Practice and implementation of European agri-environment measures
English Nature / Countryside Council for Wales	* Notification and denotification of SSSI * Securing appropriate management of SSSI * Advice to DETR on European sites and wildlife conservation generally * Establishment and management of National Nature Reserves * Biodiversity conservation, including Action Plans for species
Environment Agency (EA	* Water pollution prevention and control * Waste regulation * Regulation of processes covered by IPC * Fisheries, recreation, conservation on all inland waters * Navigation on certain waters * Flood defence * Catchment Plans/Local Environment Agency Plans (LEAPs)
Local Authorities	* Conservation policies in Local Plans * Designation of Local Nature Reserves * Biodiversity Action Plans under Local Agenda 21 * Identification of second-tier wildlife sites * Planning and development control * Consultation with EN regarding developments in or around protected sites (usually within a 2km radius)
British Waterways (BW)	* Management of recreational use of waterways * Management of freight waterways (track only) * Water sales to industrial abstractors * Property management
Water Companies	* Water supply * Sewage treatment and sludge disposal

INLAND WATERWAYS AND WILDLIFE CONSERVATION

52. Sites designated as SSSI may include the channels of navigable or derelict waterways, as well as reservoirs/feeders and bankside sites. On British Waterways property alone, out of a total of more than 50 SSSI, there are over 20 that include the waterway channel, including some on busy Cruising Waterways such as the Leeds & Liverpool and Chesterfield Canals. SSSI also exist on the Broads and on other waterways. Reasons for notification may include terrestrial vegetation, ornithological interests and geological exposures within the canal corridor or associated with reservoirs, as well as aquatic flora and fauna.

53. In England, 27 river SSSI have been identified [25], representing overall 2.5% of river length. Navigable rivers which are themselves SSSI include the Derwent, Hull, Old Bedford, Kennet, Wye and Lugg, as well as some isolated navigable reaches in Hampshire.

54. The only canal proposed as an SAC is the Cannock Extension Canal, on the basis of its population of a protected species, the floating water plantain (Luronium natans), and agreement needs to be reached with EN on management of this section. Several navigable estuaries are already SPAs and are proposed as SAC; this is unlikely to impact on through-navigation by inland craft but may have implications for marina developments. Several rivers are likely to be included within SAC, including the Yorkshire Derwent and the Broads, and the impacts of navigation will come under scrutiny, especially in the latter case.

RESTORATION OF NAVIGATION ON INLAND WATERWAYS

55. While canals were clearly built primarily for navigation, when considering restoration of disused waterways, it may be necessary to take account of changes since the canal was built. For instance, aquatic habitats have become rarer, putting more value on any existing wetland (natural or not), while the demand for amenity use of waterways and their banks has also increased over the years, with users including boaters, anglers, walkers, wildlife watchers and cyclists.

56. The effects of the introduction of propeller driven motor boats are also major factors to be taken into account, as most canals in UK were built for use by craft powered by sails or haulage from the bank and making very little wash. While the virtual elimination of horse-towing has allowed development of a wider range of tall marginal vegetation, the wash from propeller driven craft has necessitated installation of bank protection in many places, leading to a reduction in the wildlife and landscape value of the canal margins. On heavily used canals, turbidity arising from bed disturbance by propellers also reduces plant growth and diversity [26].

57. On long-disused river navigations in particular, historical navigation practices may be a far cry from the expectations of the modern motor cruiser owner. In many cases, navigation was highly seasonally dependent, with vessels regularly waiting for long periods for suitable water levels, while passage through flash locks could delay vessels for days or weeks [27]. Restoration groups will need to consider the very different demands of pleasure craft users, as well as possible changes in the hydrology of the river, which may have been affected by river regulation reservoirs, water transfer schemes, water abstractions or flood defence schemes, since it was previously navigated regularly.

58. Even if restoration plans do not include navigational use by motor vessels, careful planning will be required to ensure that the potential environmental impacts of the restoration proposals are identified and that nature conservation interests are taken fully into account.

Consultation

59. All these factors, and many more, need to be considered in planning the future of our waterways and this will usually best be achieved by consultation between all interested parties at the earliest possible stage. EN must consult owners and occupiers in relation to SSSI notification but has no obligation to consult other bodies such as waterway societies or the IWA. Such consultation is most likely to be achieved if a good relationship between

restoration and conservation interests has been developed in advance. Examples of other bodies, as well as the landowners, who should be brought into discussions on wildlife conservation at an early stage include:

- Environment Agency;
- local planning authority;
- county wildlife trust;
- local angling societies;
- Royal Society for the Protection of Birds;
- Inland Waterways Association;
- research bodies (e.g. universities) with data on the waterway.

60. Time expended at this stage in obtaining views and collecting existing baseline data will be well worthwhile in any case where wildlife conservation is likely to be a contentious issue. It is often easier to establish understanding and sort out problems at a very early stage than trying later to resolve a conflict that has developed out of hand. An imaginative and open approach can often lead to identification of ways to resolve conflicts of interests. This may include compensatory measures for loss of wildlife habitat or enhancement of nature conservation value by habitat creation, as well as sympathetic design of restoration works to minimize wildlife impacts, while achieving the aims of a restored waterway available to appropriate vessels. Good presentation of the restoration scheme to the public is also essential.

Assessment and monitoring

61. Where a scheme involves substantial works and funding is available, Environmental Assessment should be undertaken in parallel with the engineering feasibility study for the restoration scheme, even though this will not normally be a formal requirement. A suitable approach to environmental assessment is described in the DoE Guidance booklets [28, 29]. In any case, even if a formal assessment of the type described above is not undertaken, it is essential that potential impacts on wildlife of any restoration scheme are considered at the earliest possible stage. A helpful approach is to undertake an initial study to examine potential impacts and to produce an Environmental Assessment Scoping Report. This will aim to identify all the key impacts that need to be considered and should be widely circulated, in draft form, to allow all interested parties to comment and contribute. The aim should be to obtain agreement at the outset between all the consultees, as to the potential environmental impacts that need to be addressed, thus reducing the likelihood of unexpected new problems being raised by objectors at a late stage. The EA provides a useful checklist for a scoping study [30].

62. As mentioned earlier, other factors besides restoration of navigation may be affecting the wildlife conservation value of a particular waterway. Poor water quality and physical degradation of habitats are commonly the most important factors. In general, the adverse effects on aquatic species of de-oxygenation due to sewage and similar pollution is being addressed successfully by improvements to sewage works and improved water quality is now being seen even on navigable rivers in industrial areas, e.g. Aire & Don. However, problems of excessive algal growth caused by high nutrient loads (ammonia, nitrates and phosphates) have not yet been seriously addressed in many cases. Such impacts on the waterway, known as eutrophication, are of major concern in degrading wildlife conservation interest, for example on the Pocklington Canal. Where adverse impacts on wildlife are observed on navigable waterways, detailed study may be necessary to separate the effects of water pollution, physical and hydrological factors from the impacts of navigation itself [26]. Deteriorating ecological status may be ascribed incorrectly to boating activity, as this is visible, whereas the correct explanation may relate to water quality or other factors.

63. It is thus essential to harness adequate relevant expertise on aquatic systems and the restoration group is more likely to succeed in its aspirations, and to produce a scheme that is acceptable to wildlife conservation interests, if it takes the initiative in promoting any scientific studies needed at the earliest possible stage. Guidance on surveys is readily available [15, 16, 30, 31] although care should be taken to obtain and review all available existing data (hydrology, physical habitat characteristics, water chemistry, biology), before committing any resources to further data collection. A five year data set from the EA will give far more useful information than the few water analyses that are likely to be affordable by a restoration group. Relevant data sets may also be held by local universities and colleges, research institutes and county wildlife trusts. Searches using the internet are often effective in identifying relevant academic departments and organisations. There is also a wide range of literature on ecology and river management, much of which is also applicable to canals [32].

64. For clearly defined tasks, particularly for baseline data collection, students seeking MSc projects can provide a valuable resource for such work, to the mutual benefit of all. However, it should be remembered that the value of data will depend on the skill and knowledge of the person collecting it and proper quality control procedures should be applied. For example, data provided by students should have been reviewed by their supervisor and data available on the internet should be carefully reviewed before use.

Mitigation and conflict avoidance

65. Obtaining a thorough understanding of the wildlife conservation issues on a waterway will allow planning of restoration works and subsequent management of the waterway in such a way as to minimise adverse impacts. Detailed design of the restoration can also mitigate loss of habitat by provision of alternative refuges for wildlife and there will, in some cases, be opportunities to enhance the wildlife conservation value. Mitigation measures therefore need to be addressed both during the restoration phase and during the subsequent operation of the restored waterway.

66. For example, in order to protect wildlife interests during the restoration process, it may be necessary to restrict certain operations at particular times of the year. In considering the need for seasonal restrictions on restoration activity, it is important to consider all wildlife, not only the more obvious species. Expert advice may need to be sought from the statutory bodies or from independent consultants.

67. Different considerations will apply to different organisms. For instance, to avoid disturbance to nesting birds, 'scrub-bashing' and major reed clearance should normally not be undertaken during the nesting season (April to June). However, while aquatic plants are most resistant to direct damage when died back in winter, their presence and location may be less apparent at this time, so there is a danger of removal of rootstocks during dredging, without this being obvious to the operator. It may therefore be better to work when plants are in flower and make arrangements to cordon off areas for their protection. This is particularly relevant for plants that are easily confused with others - e.g. Yellow Flag (Iris pseudacorus) may be confused with reed species when not in flower. Alternatively, areas requiring protection may be identified and marked during the flowering season, so that they may be avoided during work in other seasons.

68. It should be borne in mind that breeding cycles vary between organisms and that different stages of the life cycle may have varying degrees of sensitivity to disturbance. For instance, breeding birds, adults and offspring, are most at risk during the nesting season. For toads, the spawn and the adults are probably most susceptible, while tadpoles are better able to avoid disturbance.

69. Work in summer is likely to lead to fewer human health and safety problems and to attract more volunteers and public interest. Involvement and education of local residents have been shown to lead to significant benefits for wildlife and are often important in generating respect for the waterway and its infrastructure. Short-term, direct impacts on nature conservation of restoration works in summer may be justified by the long-term benefits for conservation of better public appreciation. The need to balance the disadvantages of short-term damage against the benefits of long-term improvements is nothing new and arises equally in decisions on nature reserve management.

70. The requirement for seasonal restrictions on restoration work for the purposes of protecting wildlife will need to be assessed individually for each restoration scheme, in discussion with other relevant bodies. However, the table below provides some general guidance and indicates the types of activity which are best carried out at particular times of year.

71. It is also essential to check whether the proposed works will affect any specifically protected species. Where, for example, badger setts will be affected, it may be necessary to provide an alternative habitat and go through the procedure of relocation. EN and the local badger groups will be able to provide advice and a licence will be required before carrying out the work. Similar considerations apply to bats, some newts, otters, water voles and natterjack toads.

72. Potential mitigation and enhancement measures during restoration planning and execution include designing the scheme to provide the maximum diversity of aquatic wildlife habitats, which may affect bank protection, dredging plans and use of off-line refuges for wildlife. Constructed wetlands may serve a dual purpose of wildlife enhancement and water quality improvement [33] and the potential benefits of this dual function should be considered early in the planning stage of restoration schemes where poor water quality is an issue. Habitat creation will need careful planning. Incidental unplanned backwater areas may have little wildlife value [34]. There is a wide range of guidance available [35-39], some of it particularly orientated to volunteer work [40].

73. Mitigation measures may need to include applying pressure to appropriate bodies and riparian landowners to resolve water quality or other problems. This may involve improvement of the quality of point source inputs (e.g. from sewage works), as well as reduction in diffuse inputs, where changes in fertilizer use and establishment of buffer zones may be worthy of examination.

74. During the operational phase, attention may need to be given to minimisation of effects of vessel movement, possibly through enforcement of speed restrictions in certain areas or zoning in time and space. Maintenance programmes should also take account of wildlife issues and, in the case of SSSI or other designated sites, will be best achieved through the route of management agreements. Restoration groups should endeavour to become involved in the discussions of such issues (with the navigation owner/authority and relevant conservation and environmental bodies) at the earliest possible stage in development of the restoration proposals.

Long-term Management Plans

75. Agreed management plans provide an opportunity for all interests to have an input and can provide a useful basis for management agreements in relation to PDOs in SSSI. Even where restoration of navigation is not proposed, wildlife sites often require management to arrest succession and maintain the interest of the site, especially in artificial water bodies, such as canals.

76. Biological succession is the process whereby a wetland will naturally evolve through marsh and scrub to become dry land, unless factors exist to arrest the process at a particular point. In some cases, for example along river margins and in wetland areas, limitation of succession by regular flooding has been eliminated by agricultural drainage and flood defence schemes, which have separated rivers from their floodplains. Such schemes may, in contrast, arrest succession within the river channel itself at an earlier stage than formerly, due to increased flood scour within a constrained channel, resulting in a lowering of biodiversity. In the case of artificial waterways, the limits to succession resulting from the water flow are largely removed and management is required simply to maintain open water. Where an aquatic habitat is of conservation importance, specific management measures may therefore be necessary to maintain the biological communities of interest. Sometimes the decision on which stage in the process of succession should be maintained is a value judgment and there may be considerable debate amongst interested parties. Well planned dredging, appropriate levels of boat traffic and reasonable behaviour by boat users may make a significant positive contribution to this management process.

77. Management plans should include consideration of all uses of the waterway, not just navigation and wildlife. For example, a restored waterway will typically provide an excellent

educational resource with improved and safer access than in its unrestored state. Interpretative material can be provided that includes details of navigational, wildlife and built heritage interest, as has been done on the Montgomery Canal, and this can provide significant public relations benefit to the restoration group.

Activity	Seasonal sensitivity	Restriction
Scrub-bashing, tree felling, hedge cutting	Avoid the bird nesting season	AVOID: April to June
Hedge, shrub or tree planting	Select seasons for best survival rate	SELECT: October to November or February to March
Reed-beds	Avoid the bird nesting season	AVOID: April to June
Marginal reed cutting	Avoid the main growing season	SELECT: September to March
Reservoirs and tidal waterways	Avoid the bird nesting season and winter populations of migrant wading birds	SELECT: August to October
Mowing rough grass	Avoid mowing in late spring and summer to allow plants to flower and set seed.	AVOID: May to August
Dewatering where the plant community is of interest	Work in autumn or early winter, after plants have died back but before severe frosts	AVOID: May to August
Dredging/work on margins or in narrow waterways	Avoid fish breeding and bird nesting seasons but it may also be desirable to avoid winter when areas of plant interest may not be visible	AVOID: (December** to) March to July
Aquatic weed clearance by cutting and removal	Cut when growth is well developed	SELECT: July to November
Aquatic weed clearance by use of herbicide (contact type)	Will only be effective if applied during active growth when foliage is reasonably developed (EA must be consulted; Pesticides Regulations apply)	SELECT: May to July
Reed planting	Plant during growing season	SELECT: April to September
Work affecting bat hibernacula	Avoid winter hibernation period	AVOID: October to March

** - where plant species of conservation value are present but locations are not identified - see paragraph 67

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5. Management agreements with landowners of SSSI may be made under s.15 of the Countryside Act 1968. This power is extended by s.39 of the Wildlife and Countryside Act 1981.

6. The Wildlife & Countryside Act 1981 has been amended by the Wildlife & Countryside (Amendment) Acts 1985 and 1991.

7. The Badgers Act 1992 repealed the Badgers Acts 1973 and 1991 and the Badgers (Further Protection) Act 1991.

8. The Habitats Regulations have been amended by the Conservation (Natural Habitats &c) (Amendment) Regulations S.I. 1997:3055 to take account of an update to the lists of protected species and habitats in EC Directive 97/62/EC. Annexes I and II of the original Directive have been replaced by the new Directive.

9. Integrated Pollution Control (IPC) authorisation is required under the Environmental Protection Act 1990 by anyone wishing to operate a defined prescribed process. Such authorisations are granted by the Environment Agency (in England & Wales) and may set limits on emissions to air, water and land. The Habitats Regulations require effects on protected sites to be taken into account when granting authorisations and require existing authorisations to be reviewed, wherever the authorisation may have adverse effects on the integrity of the site.

10. Waste Management Licences are issued by the Environment Agency (in England & Wales) under the Environmental Protection Act 1990. The Habitats Regulations require effects on protected sites to be taken into account when granting licences and require existing licences to be reviewed, wherever the granting of the licence may have adverse effects on the integrity of the site.

11. Discharge consents are given by the Environment Agency under the Water Resources Act 1991 (in England & Wales) to allow discharges to controlled waters from sources other than prescribed processes [9]. The Habitats Regulations require effects on protected sites to be taken into account when giving consent and require existing consents to be reviewed, wherever the consent may have adverse effects on the integrity of the site.

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The Impacts of Recreation

by
David A. Wood
BSc, CBiol, MIBiol, MIEEM
Group Manager Rural Environment
Nottinghamshire County Council

INTRODUCTION

1. "All we want to do is restore the canal!"

2. A laudable aim for any waterway restoration group, but an aim that should not be pursued to the exclusion of all else. Many derelict canals may not have seen boat traffic for decades; perhaps not even within living memory. Once restored, the craft that use the waterway do so for recreation rather than the trade for which they were first designed and built. This recreational use of the waterway, and of the countryside through which it passes, brings with it a whole range of impacts; some of which may be far from desirable. It will be the restoration group's responsibility to tackle adverse impacts as they arise during the restoration process and thereafter. It is likely to be the restoration group that is blamed for any conflicts that develop.

3. Most abandoned waterways will readily return to nature, and become havens for wildlife pushed out of the surrounding, intensively managed countryside. Restoration to navigation could threaten the extinction of rare and declining species. The often repeated defence that "It was a waterway before it was a wildlife site" is probably factually incorrect; most canals were probably constructed through countryside that would now be considered a wildlife haven!

4. Modern restoration schemes take place within an entirely different environment and political climate from those prevalent at the time of their construction. That the waterway is not navigable and requires restoration will often mean that the restoration represents a legal change of use, which itself may require planning permission. But, whether or not a restoration scheme requires public scrutiny through the planning process, it is the responsibility of the restoration group to ensure that the scheme is truly sustainable. Sustainable development does not simply mean that the restored waterway can generate income to support its maintenance, but that the restoration is shown to be in the widest, long-term public interest.

5. There may be many people who would wish the waterway to remain as it is. Restoration will affect all the landowners and properties along its banks; not all would consider the change to be for the better. If the restoration is successful, competing uses may well result in new conflicts and congestion. Consequently, many apparent conflicts can be based on fear or misunderstanding. Where inherent opposition presents itself, this often provides a fertile seedbed for deliberate misinformation that easily grows from a sincerely held, but often misguided, belief.

6. This chapter looks at the range of conflicts that arise from the moment proposals are put forward to restore the waterway. It cannot cover every eventuality, since individual circumstances will make every case unique. Instead its purpose is to try to help restoration groups recognise the conflicts before they get out of hand.

Understanding the origin of conflicts between different user interests

7. Most adverse impacts of recreation result from conflicts caused by congestion. Congestion is not limited to physical overcrowding like having to queue to enter a lock, but is simply any form of competition for the same, limited space.

8. The natural world is governed by competition; competition between species, between individuals, and between the cells which go to make up an individual organism. Yet unhindered by our intervention, the natural world is remarkably good at regulating and controlling competition and avoiding congestion. Indeed most living organisms avoid conflict at almost any cost. Much of the most complex animal behaviour is specifically intended to prevent individuals coming to harm in conflict situations. Even so, extinction and failure remain the ultimate consequences for a species that fails to avoid congestion - perhaps there are also pertinent messages here for any waterway restoration scheme.

9. It is much easier to avoid a conflict developing than it is to put it right. So if a restoration scheme is to regulate and control competition, avoid congestion and thereby reduce conflict situations, the first stage in the process must be the acceptance that conflicts between different user interests will occur. To deal efficiently with them, conflicts must be identified and recognised before they develop, not allowed to fester until they cannot be ignored.

RECOGNISING SOURCES OF CONFLICT

10. Many sources of conflict occur as an impact of recreational use of the waterway and an exhaustive list would be impractical. The following paragraphs are not intended as a checklist. Instead the aim here is to give pertinent examples, across a whole range of issues and circumstances. Individual examples should be used as a pointer to help restoration groups begin to identify and recognise the full range and extent of conflicts which relate to their particular scheme.

On the waterway

11. General appeal, together with a rapid decline from the 1950s to the 1970s, has meant that otters have become an archetype for wildlife conservation and are protected under British and European law. Their presence is an indicator of an ecologically healthy waterway. As such there would be considerable pressure, probably backed by legislation, to prevent a change in the water quality or the wider waterway environment where otters are present. But, conversely, otters are a species that appears to be responding to conservation measures. Where waterway restoration dramatically improves the environment, it is quite possible that otters will return. Unfortunately, the unpredictable factor in both situations is the level of disturbance. If otters are to become established and expand into new areas, low levels of disturbance appear to be essential. Inevitably increasing the recreational use of a waterway will increase disturbance, with otters only "passing through" a waterway which, in other circumstances, could have a real expectation of establishing a breeding population.

12. The law protects many other species. Where a protected species is concerned, the past history of campaigning and lobbying to get a species protected often brings with it an adversarial or confrontational approach to the application of the law. Unfortunately, it is often sufficient to simply claim the presence of a protected species for site works to be halted or delayed. In a climate where increasing numbers appear to be willing to employ 'direct action' to stop what they consider as damaging activities, a knowledge of the law is insufficient to safeguard against such activities. A full ecological and environmental appraisal (or audit) is becoming an essential element in managing a major restoration scheme, and a proactive environmental management plan is necessary if potential delays are to be minimised.

13. The Great crested newt is a typical example. Any water body can be claimed to hold a breeding colony of Great crested newts. In many cases the water body concerned provides far from ideal breeding habitat. Nevertheless detailed surveys are necessary, carried out in both daylight and at night by trained herpetologists, if a claim is to be substantiated. And even if nothing is found by the surveys, it does not mean the species is not present or that it might not "appear" at a later date. What is more, if the breeding season has passed, then the works could be delayed until a survey can be carried out in the following year!

14. But Great crested newts hibernate each winter. From about September onwards they leave the water and spend the winter on land. So if critical areas of waterway restoration can be carried out during the period of late October to early February, it is possible to avoid potential conflict. By having a detailed environmental management plan, agreed and supported by the appropriate statutory bodies, it is possible to prioritise and target operations in this way and respond to later claims by quoting an already approved amelioration scheme.

15. It is well known that the wash from powered boats causes physical damage, both to unprotected

banks and to vegetation growing in the waterway. There is considerable scientific evidence that he extent of damage increases with increase in boat speed. Sheet piling is expensive and often obtrusive on a rural waterway, so physical speed limits are clearly a more environmentally friendly solution to potential bank erosion.

16. This does not mean that a slow boat will cause no damage, however, since bank erosion is not the only detrimental effect from a powered boat. As well as physical damage to water plants, the churning of the propeller dislodges silt from the bed of the waterway and returns it to suspension in the water. The resulting turbidity destroys the crystal clear appearance of water, making it cloudy, dirty looking and uninviting, and kills water plants by stopping light reaching them. So reducing speed can also improve the health of water plants.

17. But does this mean that where weed growth is a problem, increasing speed can be beneficial? Nowadays, excessive weed growth is more common than crystal clear waters. In most cases, the problem is caused by algae. Algae grow rapidly in response to high levels of nutrients which enter the waterway both as agricultural runoff and the by- products of sewage treatment. The only true way of reducing the growth is by preventing the nutrients entering the system in the first place. Naturally, the nutrients will become locked up in the silts that fall to the bottom of the waterway. Waterway restoration that dredges, or otherwise removes, most of the silt will remove these nutrients at the same time. But silt deposition starts again as soon as the dredging is finished. The action of propellers in a shallow channel unfortunately stirs up any silt and returns the nutrient back into the water, where it can promote algal growth once again.

18. Algae are the natural food of Daphnia, the water flea. Fish in turn consume daphnia. Research by the Broads Authority has shown that artificially increasing the population of Daphnia will reduce the growth of weed, but only where the fish population is kept low. So to have a balanced wealth of aquatic wildlife, perhaps the best course of action is to avoid reintroducing fish. In two or three seasons, the balance between nutrient input, algal growth and Daphnia will become established and the water will clear. However, as soon as open water appears after restoration, fishing and anglers seem to follow. The temptation to encourage the sport and get an early financial return on expenditure means that the natural balance is unlikely to be re-established. Sport fishing brings with it both authorised and illegal introductions of large specimen fish and these produce an unnatural population structure. Large fish mostly eat smaller fish, or are bottom feeders sifting through the mud and further increasing turbidity. Birds and animals that feed on fish mostly rely on abundant, small fish rather than a small number of large specimens. Relatively few aquatic animals, an impoverished aquatic plant community, and poor bank side vegetation are the consequence.

19. The idea that waterway restoration will automatically be good for wildlife is by no means a certainty. If managed specifically to improve the wildlife potential, restoration can be beneficial. But conflicts arise because of human impatience, and through trying to pack too many competing interests into the same stretch of waterway. Natural balance is only generated slowly, over relatively long periods of time.

On the towpath

20. Walking, cycling and horse riding, along with their associated forms of informal recreation, are clearly attracted to the towpath because it is relatively flat and provides access to an aesthetically pleasing range of landscapes. But few towpaths are wide enough to offer segregated routes so, even here, the different forms of informal recreation can be in competition with one another. For example, towpaths are likely to be popular with local dog walkers. However the more informal setting of the towpath will often mean that owners are less fastidious about cleaning up after their pets. The more popular the site, the more likely it is to be fouled, and the less desirable the canal environs become for all other legitimate users. Where tourism or catering facilities are involved, such problems can only be adequately resolved through increased maintenance costs.

21. Large volumes of foot traffic will cause damage to footpath surfaces, damage that will then be accelerated by the weather. Damage is not evenly spread, either along or across a footpath, and is greatest where routes turn, separate or combine, pass through boundaries or change level. Where the majority of foot traffic is downhill, paths tend to be narrower and develop a characteristic single, deep rut. Conversely, where the majority of traffic is uphill, paths tend to become much wider and, since the volume of traffic is more dispersed, are less vulnerable to damage. Where routes are flat, people tend to try to walk "a-breast" rather than in single file, so routes tend to naturally widen to accommodate them. Damage to path edges or trespass onto adjacent land can become a serious problem where level paths are severely restricted in width. By understanding these factors, the standards of footpath surfacing can be varied, with high cost, high quality surfacing used only where the risk of erosion is the greatest. Similarly, pressure on a vulnerable section of footpath can be reduced, for example, by carefully considering the direction in which a circular route is interpreted or promoted.

22. Similarly, the tread of a cycle tyre and the solid shoe of a horse will physically rut and erode the surface of the towpath. An unshod horse actually causes very little surface damage (as might well a bare-foot human) but as a solution to the conflicts of erosion, it is not the most practical. But while cycle and horse may well cope with the mud and uneven surface resulting from mixed use, the walker is going to lose out and complaints and maintenance costs rise.

23. Perhaps on the towpath more important considerations are safety and public liability. Cycles and horses can be surprisingly quiet at times, and it is when a cycle or horse approaches a pedestrian from behind that the greatest danger is created. The risk of a fright, to a startled pedestrian or animal in close proximity to the water's edge, and in the confined width of the towpath, increases the likelihood of conflict or even a serious accident. Yet modern concepts of sustainable transport routes, and "Access for All", will naturally target the flat length of towpath as ideal for the purpose. Before such good intentioned initiatives are fully embraced, it is important to establish, not simply that the towpath is physically capable of accommodating the required width and surface treatment, but also who is liable in event of an accident.

24. Animals tend to avoid crossing the waterway on bridges that are heavily used by humans. But this does not mean that animals will cross the waterway at any point or in an erratic or unpredictable way. Instead, there is a tendency to use regular routes at water level - routes that often result in a discernible animal track on either or both banks. If revetment or bank protection works are envisaged, animal ramps or similar access slopes should be included at existing crossing points.

25. Most towpaths will have the added benefits of a verge. A verge between the towpath and the water's edge can greatly improve the perceived safety to the towpath user. Semi-natural vegetation, on either or both sides of the towpath, can also provide a very valuable linear habitat and benefit a host of wildlife. A soft, sloping verge will benefit animals that cross or fall into the waterway, ensuring that they are able to get out again. However, in all of these cases the value rapidly diminishes if the verge is not maintained. This does not mean that it should be manicured or tended like a lawn, but should be cut two, possibly three times a year. Not only does this keep the edges of the towpath and of the waterway visible, but also it ensures that shrubs and trees do not become established where they would damage or destroy the bank.

26. The presence of a wide verge will attract anglers. The amount of equipment used by the modern angler can take up a great deal of space and, if there is insufficient space or the bank slopes too much, excavation of the bank can often result. Where fishing is appropriate on the towpath, it may be necessary to resort to the construction of formal fishing platforms to rectify or limit the damage.

27. With fishing, there often follows the problems of access by motorised vehicles which, when compared to cycles and walkers, are likely to increase the physical damage to the towpath by at least an order of magnitude.

The off-side bank

28. While anglers will sit and fish from the towpath, the source of their interest is likely to be found along the offside bank. Apart from the annoyance of fishing rods and lines threading across in front of moving boats, the main conflicts along this bank are likely to arise from the land uses on the adjacent properties. It is the offside bank that will usually be heavily reed-fringed, wooded, or merge imperceptibly into the surrounding countryside.

29. The offside bank is particularly important as the home of many terrestrial or semi-aquatic wild animals. Water voles, for example, used to be common along many rivers, canals and streams. Current rates of decline suggest that this species has been lost from 90% of its former sites. Habitat loss, including channel engineering and dredging works, is thought to make the vole more vulnerable to attack by predators such as wild mink. Consequently, the water vole has been recently given limited protection against intentional disturbance or intentional damage to its habitat.

30. It is the vegetation and the earth banks along the waterway edge that are essential to maintain healthy population levels of such animals. As a consequence, the natural profile and vegetation cover of the offside bank should be retained wherever possible. The simplest method of reducing conflict with wildlife interests is to stop engineering works about one metre from the off side bank. Any existing nest sites are retained intact, and the fringe of emergent vegetation is likely to rapidly recover to replenish the food plants removed through engineering operations.

31. Immediately adjacent to the canal, on the offside bank, there will often be productive agricultural land. Indeed, arable or pasture fields may lead right down to the water's edge. Run off from fertilisers will directly increase the nutrients in the waterway and lead to excessive weed or algal growth. Herbicides may damage bank-side vegetation but, if used correctly, should not cause serious concern. However, stock may use the waterway for drinking and this can result in extensive and highly visible damage caused by physical erosion or effluent. Physical damage can be reduced and localised by fencing which includes purpose- designed drinking points, while the damaging effects of effluent and agricultural run-off can both be reduced by increasing the depth of the reed fringe. Reeds will act like a cross between a filter and a sponge, soaking up much of the nutrient load, absorbing some into the plant material and releasing the rest only slowly into the waterway.

32. When dredging the waterway, the result should not be an engineered "U" shaped profile. In addition to stopping excavation a metre to the waterside of the bank, try to provide a gentle slope on the offside of the cut, or a wide earth bench that will be about 15cm below water level to encourage reeds and other emergent vegetation to thrive.

Bridges, tunnels and cuttings

33. The incidental structures, such as bridges, cuttings and tunnels, may well be protected for their historic or architectural importance. But many species of wildlife will treat such structures as if they were cliffs or caves. The often dank and shaded micro-climate associated with these structures, coupled with the fact that difficult access will often keep such sites untouched for many years, means that they are highly likely to attract sensitive species. Due to the loss of similar habitats in the wider countryside, many of these species are likely to be classified as endangered or threatened, and may well be protected by law. Cool, damp and shaded sites are likely to hold ferns, mosses, liverworts and lichens which, while they may not be as spectacular as rare flowers or birds, are nonetheless a vital part of the countryside.

34. Abandoned tunnels, in particular, provide stable air conditions that may be ideal for roosting or breeding bats. However, similar concern should also be shown for cracks in bridge masonry, dry

stonewalls, exposed rock faces within cuttings etc. Different species have quite different preferences, and the fact that some species of bat can be found in navigable tunnels does not mean that an existing bat colony will be unaffected by restoration. All species of bat are legally protected under British and European law, whether or not the particular structure is protected as a designated site. It is an offence to kill, capture or disturb such animals or to damage or destroy their breeding or resting sites. Therefore, there is a real concern that the conservation of a rare species of bat may be in direct conflict with proposals to reopen a tunnel to boat traffic. It is not disturbance that is of concern here, but the physical changes to temperature and air flow within the tunnel. Although technically not an insurmountable problem, a solution is likely to be very expensive and protracted to negotiate since it is likely to involve the creation and safeguarding of a better alternative site for the particular species concerned. Indeed it may be cheaper or easier to make alternative provision for waterway traffic!

35. Tunnels and cuttings, where they expose the underlying bedrock, are also likely to be important as geological sites. Some geological sites are legally protected as Sites of Special Scientific Interest, but many more are recognised locally as Regionally Important Geological or geomorphological Sites (RIGS). Even the stones used in the built structures along the waterway provide a potential source of material for the interpretation and understanding of the origins of landscapes, and may well provide an added dimension in the promotion of a completed restoration scheme.

The boundaries

36. The most obvious 'physical' signs of conflict are often found along the boundaries of the waterway. Hedges, fences, and walls invariably marked the extent of the original ownership, so holes in the boundaries mark the evidence of both legal and illegal access. The pattern of incursion through the boundaries can be used to infer both the desires and the routes followed by both human and wildlife visitors. Blocking gaps is not the answer because it tends to simply move the problem somewhere else. Instead, the approach should be one of managing the access points - making some easier to use while making others harder to abuse.

37. The type of access provision can then be used to help regulate the types of visitor, although it must be said that the design of special access barriers only rarely achieve their intended purpose. Access provision for horses or deer will invariably give access to motor cycles. Stiles are for the able bodied, and may exclude the elderly or infirm as well as the physically disabled. Kissing gates may reduce access by mountain bikes or motorcycles but, without careful design, will stop wheelchair users as well. And if a wheelchair cannot pass, someone with a child in a pushchair will also experience difficulty. Clever designs, for example cycle chicanes wide enough for bicycles but too narrow for motorcycles, appear simply to challenge the inventive - there are known examples of motor cyclists getting around the problem by either cutting down the handlebars of their machines or fitting cycle handlebars instead.

38. In the same way that provision needs to be made for animals to be able to climb out of the water, boundaries need to include access provision for animals as well as human visitors. Because few boundaries are either continuous or impenetrable, it is only the larger mammals that usually need special provision-badger gates and fox or dog stiles are obvious examples. However, animals will also use boundary features as corridors along which they will move, as boundaries or display points within their territories, and as the source of food. Food is not, of course, restricted only to obvious sources. In this case it extends to all plants (including those we might consider as weeds), fruits on trees or shrubs, invertebrates or small mammals, and dead or decaying wood, leaf litter etc. So in maintaining boundaries it is important to spread the impact of management by, for example, only cutting one side or part of the hedge in any one year. Similarly, excessive tidiness is to be avoided. Dead trees should be made safe but should not necessarily be removed from site or burned. And boundary walls, fences or hedges can be allowed to vary in height - even the occasional tall post can be introduced to provide a song or hunting perch.

39. Because the boundary features were often erected as part of the construction of the waterway, they may also be features of landscape history and even archaeological importance. Scheduled monuments, listed buildings and conservation area regulations can all apply to boundary features, and the Hedgerow Regulations 1997 mean that unlawful removal of a countryside hedge may be a criminal offence. Legal responsibility for the boundary should be established or clarified before any boundary work is undertaken, or a case of criminal trespass may arise.

40. Similarly, trees or woodland that may form or overhang the boundary may well be protected by Tree Preservation Orders. Felling trees requires appropriate licensing from the Forest Authority (part of the Forestry Commission). Lopping, pruning or even removing low branches may have to be carried out by the owner of the land on which they grow, and are certainly the responsibility of the owner if they are dead or dangerous. Beware of the public liability costs of dead, decaying or dangerous trees near public rights of way or any areas to which the public are invited to visit - if someone is hurt by a falling tree, the landowner is likely to be liable for costs and compensation.

The hinterland

41. Development along the waterway will have an impact on a wide swathe of the surrounding land, including towns, villages, farms and individual properties. Trade in local shops, pubs, restaurants and overnight accommodation may increase, but the pattern of trade will change. While it is often implied in restoration documents that the recreational use of the waterway will generally be good for surrounding communities, the truth is that the restoration may produce a number of adverse impacts and hence potential conflicts. Often with good cause, local communities may well oppose facilities that appear to be in competition with existing local enterprises. Focussing on development or visitor facilities that generate income for the restoration scheme must not ignore their potential impact on the sustainability of local communities.

42. The Countryside Commission, English Tourist Board and Rural Development Commission have together produced a set of "Guiding principles for tourism in the Countryside". While the principles are worth adopting as the basis of any waterway restoration scheme, it is particularly worth re-emphasising here the guiding principle on the rural economy: "Investment in tourism should support the rural economy, but should seek a wider geographical spread and more off-peak visiting both to avoid congestion and damage to the resource through erosion and over use, and to spread the economic and other benefits."

43. Special attention should be given to access links to the wider countryside. While the public have rights of access along public rights of way, it is not necessarily appropriate for a waterway restoration scheme to actively promote the use of those routes through interpreted trails or promotional leaflets. Here the simple principle of neighbourly conduct is often the best approach. The routes may be along public rights of way but they will cross, or give access to, private land. If a restoration scheme is to attract large number of visitors, it should be able to accommodate those visitors within the boundaries of the scheme. Solving visitor pressure problems by encouraging overspill onto neighbouring land is unlikely to win friends and may result in a claim for compensation. Those promoting a route should always consult widely with those owning land crossed by the trails and only include signage or other interpretation where neighbouring landowners are supportive.

44. Certain sites or facilities, by their very nature, will concentrate large numbers of people in one place. Such “honeypots” must be able to withstand the visitor pressure and construction details like surfacing and seating will need to be of the highest standard of robustness. Surfacing will also need to be sound at "pinch points"- any point at which visitors will be funnelled together. When siting new facilities, opportunity should be taken to identify sites that are naturally able to withstand the pressure. Indeed, honeypots and pinch points can be actively designed into schemes to control and manage the distribution of visitors more effectively.

CONCLUSIONS AND APPROACHES TO RESOLVING CONFLICTS

45. Perhaps the greatest problem in dealing with conflicts is in gaining recognition that a conflict actually exists. This chapter should have raised awareness of the type and range of issues that increasingly generate problems. It should also serve to remind groups about the complex inter-relationships that often exist between the different impacts resulting from recreational use. If key impacts can be identified and managed, then a range of potential future problems may be avoided.

46. The Inland Waterways Amenity Advisory Council advise that it is good practice for any restoration proposals to include a general environmental assessment, even if a formal assessment is not required. However, there are many problems with the assessment procedures and groups need to be aware of their limitations. Most restoration groups admit that they still have problems with wildlife or other environmental issues, even if an environmental assessment has been undertaken. Normally a restoration group will rely on commissioning an independent consultant to undertake an assessment. Regrettably the standard of environmental assessments received by planning authorities have varied greatly in quality and competence. Few, if any, consider the option of not proceeding with restoration (perhaps because the consultant does not wish to upset the commissioning body). And, while potential conflicts of interest between restoration and statutory or voluntary bodies may be brought to light, few assessments provide complete solutions to those conflicts. Particularly where a statutory body may directly oppose a restoration initiative, other more comprehensive and proactive methods are needed, and often a detailed environmental management plan will need to be agreed. Even though recreational use may not conflict with statutory site protection this is particularly relevant where national or international designations apply. Reference should be made to the other chapters which deal with this issue: *Wildlife Conservation* and *Some Legal Aspects a/Restoration.*

47. Few people take the time or develop the skills to carry out a full audit of the existing and potential conflicts that will apply to a major project like a waterway restoration scheme. Such audits go into issues in much more local detail and extend far beyond the issues usually covered by an environmental assessment or appraisal. Many problems can be predicted and, if they cannot be avoided, the likely costs can be assessed before funds become over-committed. Conflicts, once recognised, can be prioritised and action taken to resolve them. To this end, all groups are encouraged to undertake an audit and develop an environmental management plan to guide the course of future developments.

48. There is a wide range of handbooks, manuals and practical management guides available to suggest solutions to particular problems, and increasingly the Internet is providing a useful source of reference. Web sites, provided by organisations like the Department of the Environment, Transport and the Regions (www.environment.detr.gov.uk), give succinct summaries and definitions that avoid having to wade through primary legislation. Others, particularly those developed by pressure groups, are equally valuable because they lay out the tactics that may be employed against a restoration proposal. Friends of the Earth (www.foe.co.uk), for example, provide balanced advice on "Wildlife, Planning and Developments" as an outline of how to use the planning system to stop a damaging development. While such information may be used by the more unscrupulous in an attempt to stop any development, it does provide a comprehensive summary of the issues that any scheme should consider and any planning application will be expected to cover.

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Green Housekeeping

by
John Cook

INTRODUCTION

1. The subject of 'Green Housekeeping' will be considered in four sections. Following this introduction the Key Issues affecting the main day-to-day activities of waterway restoration groups and their members are listed and commented upon. The desirability of making an Internal Environment Audit and preparing an Internal Environment Policy is then mooted and the chapter ends with some brief Conclusions followed by short lists of References and Useful Organisations.

Responsibility

2. Humans take on a great deal when they try to organise the natural environment to suit their own purposes. Fortunately, as the end of this century approaches, rather more is known about the subject labeled 'ecology' and there is now a deeper appreciation of our potential for causing disruption, destruction and devastation.

3. When Francis Egerton, John Gilbert and James Brindley set about the task of constructing the Bridgewater Canal they had no reason to consider the potential impact on the environment of their proposed works. Nor could they have conceived how dramatic would be the changes in the landscape which flowed from the revolution whose birth their canal played its part in fuelling.

4. Today's 'navvy' has no such excuse. Anyone who makes any pretensions to being civilised and feels a reasonable concern for the fate of future generations must do everything they can to minimize the potential harmful impact of all their activities. Twenty-first century man and woman must increasingly strive to ameliorate the damaging effects of their actions on the environment in the short, medium and long term.

5. Creating a waterway where none formerly existed inevitably resulted in a considerable disturbance to the local flora and fauna, but wherever disruption occurred new opportunities were also created. Once the new canal became colonised by water-loving species the canal builders (if only present day knowledge had been available to them) could have claimed to have brought greater species diversity to the area. Canal restorers who can claim to have done the same as a result of their restoration activities will have something of which to be proud.

6. Although nature has an enviable ability to take advantage of environmental changes, today's navvy often (although not always) comes equipped with more than mere pick and shovel. When using modern machinery groups, and indeed individuals too, have a greater responsibility to ensure they are not undermining the benefits of their restoration by causing inadvertent environmental damage either in the process of their work or in its wake.

Minimising Impact

7. When restorers set about their objectives of reinstating a formerly navigable waterway their activities will inevitably have a significant impact on the immediate environs of the artificial watercourse and very probably for some distance beyond. It is now seen to be of considerable importance for these groups and their members to be fully aware of this fact. All of them ought to plan and implement every aspect of their restoration scheme to ensure their impact is a positive one and that any negative effects are vigorously minimized.

8. How to tackle the 'work on the ground' in an environmentally acceptable manner is dealt with in another chapter. The purpose here is to direct the minds and hearts of everyone involved in restoration projects as to both how and why they should strive to ensure their housekeeping is as 'green' as they can make it.

KEY ISSUES

9. The main factors which can be regarded as constituting the 'housekeeping' of a waterway restoration group or society are now considered.

Pollution

10. This can take various forms; noxious fumes and soil or water contamination are obvious examples, but canal restorers should also take care to guard against their activities creating visual or noise pollution. Work party organisers must be on their guard against **all** forms of pollution.

Transport

11. At the beginning of this decade 85% of carbon monoxide in this country was caused by motor vehicle emissions. Their fumes also contributed 45% of the nitric oxide, 18% of the carbon dioxide and considerable quantities of the lead polluting our air [1]. Inland waterways restoration groups must therefore make every effort to use lead-free fuel and ensure their use of vehicles and plant (see paragraphs 16-19) is as efficient as possible.

12. Group members attending work sites or other events should consider alternatives to using their car and, where cars are used, should endeavour to maximise occupancy rates. Four people sharing one car is far preferable to four cars each with a single occupant. Fewer vehicles also result in less intrusion and damage to the verges.

13. Groups should encourage the use of public transport - and walking and cycling wherever appropriate - and use a crewbus or similar vehicle to transport workers to and from the worksite. As well as being kinder on the environment this should be more efficient as well as being good for public relations if it prevents hoards of cars invading a secluded spot.

14. Organisations which own or hire vehicles to transport their workers should ensure they are correctly maintained, that journeys are planned to minimise their length and number and that all drivers are familiar with and employ environmental driving techniques.

15. It is important that engines are services and tyre pressures checked regularly. The former will help keep emissions to a minimum, while using correct tyre pressures helps extend tyre life, improve safety and reduce fuel consumption.

16. The above points could be incorporated into a Green Transport Plan as could the use of retread tyres. Provided all vehicle tyres conform to British Standard BS AU 144e safety will not be compromised. This is a greener alternative than new tyres because the oil used in the production of retreads is approximately one third of that used in the production of new ones and retreading creates an infrastructure for the collection and disposal of worn tyres. [2]

17. The impact of every aspect of restoration groups' activities must be closely overseen by those responsible for them. Green housekeeping and good public relations share a lot of common ground.

Plant

18. At all sites someone present must be designated responsible for Plant and Site Maintenance. They must be familiar with pollution prevention and other relevant guidelines, e.g. those relating to "Hazardous Waste" issued by the Environment Agency (EA), and ensure no oil or other "poisonous, noxious or polluting material" contaminates the ground or watercourses [3].

19. Great care must always be taken when storing fuel and to avoid spillages when refueling, servicing or repairing equipment. Recent regulations lay down strict rules which must always be complied with; details are available from EA. Any spillage which does occur must always be effectively cleaned up without delay.

20. Whether hired in or owned by the group, it is responsible through its members and helpers for the condition of that equipment and how it is used. Again regular maintenance, fuel efficiency, minimal exhaust emissions and economical use should be the guidelines to which all operators adhere. The DETR recommend that where possible re-refined mineral oil, or, in environmentally sensitive areas, vegetable based oils, should be used.

21. Operators should check for oil leaks and dispose of oily rags etc. in the same way as for absorbent material used to mop up spillages. These can now constitute 'hazardous waste' and as the regulations regarding the disposal of such waste are being tightened all groups should check with the Pollution Prevention Officer for the relevant Local Authority. It may be necessary for Hazardous Waste Kegs to be kept (and used) at each site.

22. Chain saws, dumper trucks and many other items that groups may need to use from time to time can create their own pollution with **noise** being the most obvious type. Groups should always be aware of this and plan work to minimise the disturbance caused to both other humans and the local wildlife.

23. Where toilets are required it should be noted that the chemical type "are not truly ecologically acceptable. The problem is that the chemical works by killing the natural biological action of the bacteria on the effluent. If this is poured into the municipal sewage system it seems to reduce the desirable natural action of the bacteria present" [4]. If no mains-connected facilities are available toilets with holding tanks should preferably be used.

Boats

24. Any organisation using powered boats as part of their operations should observe the same rules as those which apply to vehicles and plant concerning noise, oil leaks, exhaust fumes, choice of fuel and economy of use.

Paint, Preservatives and Solvents

25. Whether using paint on vehicles, plant, boats or canal structures, or treating wood with preservatives, the same rules apply. "Solvent, old paint tins, rags, paint brushes and all other waste should be disposed of safely and not left lying round where it will be unsightly and present a hazard to wildlife. The best way to dispose of paint is to use it. Surplus paint and thinners should be placed in special waste facilities or may be disposed of through an authorised contractor" [4].

26. Unfortunately the majority of cleaning agents on the market harm the environment by upsetting the ecological balance, so only those household cleaners which do not contain bleach and are phosphate free should be used. This is because bleach contains chlorine which can seriously damage the environment while many types of washing up liquids, washing powders and detergents contain phosphates which, like nitrates, are responsible for eutrophication [5]. Also everyone should be encouraged to use no more than the minimum quantity of any such product required to do each job.

27. In some areas there are paint recycling schemes which gather up other people's leftovers and put them to use. Groups should apply for paint from this source where practicable and donate any of their own unused paint to such a scheme if it is not needed.

Office Activities

28. Many restoration societies and groups do not have their own office premises as such; however, any member giving up his or her time to assist the activities of that organisation, even if this is done in their own home, is in effect 'working' for them and it is highly desirable for such voluntary

workers to develop green housekeeping practices. Their involvement with a group adopting green methods should encourage them in turn to green their own lives.

Heating

29. Groups should minimise wasted heating by using draught-proofing and insulation methods as appropriate to the type of building. Simple things like keeping the doors closed as much as possible, drawing the curtains, wearing sufficient clothing, only heating the rooms in use and not overheating those are all common sense measures which will help to cut fuel bills by reducing fuel consumption.

30. Organisations with their own premises should ensure that they comply with the latest advice available from the Government's Energy Efficiency Office or their Local Authority's energy advice centre.

31. Unfortunately the use of any of the 'normal' fuels - electricity, oil, solid fuel and gas - pollutes the atmosphere. When selecting which to use it is a case of picking 'the least bad'. With its lower production of carbon dioxide, gas is reckoned to be the first choice. Space and water heating should be done using the models most appropriate for each situation.

32. Currently the 'condensing' boiler is regarded as the most desirable type of gas heater as it burns efficiently and wastes less heat than other types do.

Lighting

33. Compact fluorescent lamps (CFLs) consume up to 80% less energy than tungsten bulbs and last eight times longer. Modern energy-saving bulbs also use electricity far more efficiently so groups should replace (by recycling) old bulbs. They should look at ways to make better use of the light available - regularly dusting bulbs and cleaning the diffusers can make a difference - and check that lighting is provided where it is needed; i.e. on the task rather than the ceiling. Everyone should be encouraged to turn off lights after use.

34. Each restoration group needs to keep abreast of any relevant developments so that the very best choices can be made when equipment which uses any form of power is purchased or replaced.

Gadgets

35. Virtually everyone uses some electronic gadgets but are they necessary? Groups should only use electronic gadgets which are really needed and use them efficiently so that the minimum amount of fuel is consumed.

Waste Management

36. The key advice can be summarised in the slogan "Reduce: Reuse: Recycle".

37. Reducing waste involves careful selection before purchasing, including avoiding disposable items, buying the exact amount required for the job and using it carefully and economically.

38. Where left-overs are unavoidable new uses for the materials should be found or they should be passed on to someone who can make good use of them.

39. Good waste management involves:

- taking care of how any remaining waste is disposed of
- composting anything biodegradable
- compacting anything crushable
- keeping a check on the nature and volume of the material put into the dustbin
- searching for ways to reduce this week by week

Reusing Materials

40. From its earliest days the waterway restoration movement has been a keen advocate of reusing bricks, timber and just about anything else which came to hand. However the motivation was more usually one of thrift and availability than a green outlook. This is one habit modern navvies should continue with pride.

Recycling

41. What cannot be reused should, after sorting, be recycled. Groups should ensure that as many as possible of their supporters are actively engaged in recycling. They should investigate local opportunities and, where there are insufficient recycling facilities, press for their provision and offer help in their operation.

42. Most people are aware that glass, paper and tins can be recycled but an increasing range of materials are being added to this list. Many types of plastic can now be recycled, but must first be carefully segregated. One surprising commodity manufactured from old plastic bottles is a soft fleecy bodywarmer recommended for birdwatchers.

43. Everyone should keep abreast of what can be taken where for recycling and, as extra opportunities for recycling open up, take advantage of them. However no one should drive miles to recycle half

a dozen bottles or cans. It may help others if someone in the organisation co-ordinates the collection of certain commodities until a bulk delivery can be made to the recycling depository. Also it is good practice to co-operate with other local organisations in collecting materials for recycling. It could make them more helpful in other ways too.

Water

44. There are two simple rules to follow:

- Do not waste it, and
- Do not pollute it.

45. It should not be necessary to emphasize to groups concerned with restoring canals the importance of conserving water and preventing pollutants entering water supplies either directly or indirectly. Nevertheless it is desirable for every group to ensure that its own record on these two points is impeccable.

46. However, other organisations or commercial contractors encountered may not be so aware or scrupulous. People should never be afraid to report to the appropriate authorities any activities which could result in polluting water supplies; they are illegal and need to be stopped at the earliest possible stage.

47. A comprehensive range of methods for conserving water in the DETR's Environmental and Energy Awareness Division's guide on conserving water.

Purchases

48. Purchasers should always take into account an item's potential either for reuse or recycling when it becomes life-expired. Some printer ribbons can be re-inked and laser cartridges re-charged. Choosing the appropriate models could save money as well as reducing non-recyclable plastic waste.

49. No wood product made from rare woods included in the Convention on International Trade in Endangered Species [CITES] should be purchased. If wood is the best choice for a particular application it should only come from independently validated sustainably managed sources [6]. Always consider the suitability of using:

(a) One of the expanding range of wood alternatives made from recycled or other materials, such as recycled plastics [7], or

(b) Reclaimed timber or products made from reclaimed timber.

50. The amount of household products purchased by a group may be very small, unless they are organising a large event or dig, but the same principle applies. The question which should always be considered is, "What effect will purchasing this commodity have on the environment and can a wiser (i.e. greener) choice be made?"

51. A group should explore the possibilities of purchasing goods in conjunction with other 'green' organisations to take advantage of lower prices and co-operate with other groups to source required items.

52. Paper goods such as toilet paper and kitchen rolls should only be made from 100% recycled paper or that containing a high percentage of post consumer waste. However, remember that, in some cases, e.g. to clean up spills, it may be preferable to use washable cloths.

53. Whenever there is a choice items made from recycled materials should be bought in preference to those which are not.

54. Purchasers should check the power consumption/energy efficiency figures of any electrical appliance and choose the most economical one every time. If the use of appliances using batteries cannot be avoided rechargeable ones are preferable to non-rechargeable batteries. Users disposing of batteries should not put them with domestic refuse but place them in a recycling bin if one is available locally or otherwise treat them as hazardous waste.

55. Many goods are over-packaged: items from tomatoes to screws are wrapped in polystyrene, plastics and card. Members of restoration groups ordering supplies of stationery or food for a weekend dig where overnight accommodation is provided for visiting navvies can help to reverse this undesirable costly and wasteful practice by insisting on simpler packaging or, where appropriate, no packaging at all. If they buy triple-wrapped items how will they dispose of all the packaging material? It would be far better not to take it out of the shop in the first place. Whenever possible they should patronise stores which offer unpackaged goods and choose reusable packaging (such as milk bottles) and recyclable packaging in preference to that which cannot be reused or recycled.

56. John Button [8] estimates that 15% by weight and 25% by value of products that shoppers buy are made specifically to be thrown away. That represents a dreadful waste not only of money but also of natural resources. It also creates an environmentally damaging knock-on effect as lorries daily burn up fuel traversing the countryside to take this unwanted material, much of it produced from fossil fuels in the first place, to fill the dwindling number of landfill sites. Not only is landfill a serious waste of land, many older ones are now producing dangerous quantities of the explosive gas, methane, making the locality unfit for human habitation, and accelerating the rate of global warming. Another highly undesirable product from some is "leachate", liquid with a very high BOD (Biological Oxygen Demand) which seeps from them and can damage aquatic ecosystems and pollute groundwater [1].

Publications, Letters etc.

57. Paper which is 100% recycled should be chosen whenever possible, and preferably the unbleached and undyed types. There is nothing to be gained by using better quality (and usually more expensive) paper than is required for each job. The quality and choice of recycled paper is growing all the time and prices should fall as more people and organisations switch to using it in preference to virgin paper [7] and [9].

58. There is now virtually no excuse for not using recycled paper. Whatever its composition it should never be wasted. Careful use and reuse should be the order of every day and only when the fullest use of every sheet has been made should it then be consigned to the recycling bin.

INTERNAL ENVIRONMENT POLICY

59. It is highly desirable for organisations of any size to have an Internal Environment (IE) Policy, even if it may go by a different name, and to ensure that it is fully effective.

60. An IE Policy should be a concise, jargon-free statement of an organisation's commitment to pursuing its objectives in such a way that at all times the actions of its members have the minimal negative impact on the environment.

61. The principal methods by which such impact is to be monitored must also be clearly laid out.

62. This should be followed by a list of targets, for example, for:

    1. reducing consumption of fossil fuels

    2. minimising both pollution and waste

    3. increasing the quantity of materials which are reused

    4. increasing recycling and the purchase of recycled goods

    5. developing schemes to increase the positive effects on the environment of the group's work

63. All targets must be quantifiable and definite. Specific quantities may be given or a percentage rate, but in the latter case this needs to be reasonably easy to convert into an actual figure. Progress towards achieving each annual (or other period) target should be monitored regularly and appropriate remedial action taken if it appears that any target will not be reached.

64. For each target a named person(s) or office holder(s) should be tasked with responsibility for overseeing the implementation of that part of the policy and a given timescale set in which the target is to be attained.

65. Whatever their methods of working, all canal restoration groups and societies need to produce some form of Annual Report and Statement of Accounts, so it is probable that environmental targets will be set (and reviewed) annually. There is no rule which states that targets have to be annual: in some cases there could be benefits in setting shorter target dates while some may reasonably need to be more long term. However, long-term target setting should not be an excuse for procrastination.

66. For any organisation which does not yet have an Internal Environment Policy their Executive Committee or Council should, without delay, appoint an individual or small group to carry out an IE Audit and then prepare a draft IE Policy.

67. Making an IE Audit means carrying out a thorough and objective review of the current situation. Reference to the Key Issues, aforementioned, may act as useful guidelines but every aspect of the organisations' activities needs to be considered.

68. Every area where "environmentally friendly" procedures are already the norm should be noted just as thoroughly as any "not-so-green" ones. With this list completed, a range of proposals needs to be drawn up suggesting possible levels or rates of implementation.

69. To gain the co-operation of those who will be expected to implement any changes members and employees should help to formulate targets they will be asked to meet. This will ensure they feel a commitment to proposed changes and are not resentful. Often it will be **imperative** for the leaders of the organisation to do just that: to lead. If by their own example they are seen to believe in and apply the new practices, it will be more likely that others will support them and their new greener policies.

70. Setting realistically attainable targets and timescales will also improve their acceptability as well as increasing the likelihood of their being reached.

71. The full Committee or Council of the organisation must agree on the targets to be adopted. The policy should be published - on recycled paper, of course - and then the membership must quickly be made aware of the new policy and encouraged to help in its full implementation.

72. Once an Internal Environment Policy has been adopted it must be regularly reviewed and revised in the light of changing circumstances and opportunities. New targets can be set so that a process of ever-improving performance is sustained. As each of these new targets is achieved the world should be told about it.

CONCLUSIONS

Taking a Lead

73. Waterway restoration groups and societies and their members should certainly not be afraid of being in a minority, nor of campaigning for improvements to both the built and the natural environment. From the earliest days, back in 1946, the founding fathers of the Inland Waterways Association trod a lonely and often thorny path. The one ahead is somewhat clearer for today's campaigners. Rolt, Alickman, Hadfield and others led the way and achieved what was thought by most to be impossible. Now those who continue the crusade need to do so with the addition of an even more vital objective - that of saving not just the inland waterways for posterity but the very environment itself.

Pro-Active Strategies

74. Merely minimising the impact of a group's activities should not be the extent of their horizons; pro-active strategies should also be developed such as tree planting schemes, building and repairing dry stone walls, reinstating hedgerows, developing wildlife refuges and, wherever possible, (in consultation with the landowner and local wildlife groups) increasing the habitat diversity of the land adjacent to each restored section of waterway.

75. Although the actual work involved in such schemes is outside the scope of this chapter they must begin with planning. The desirability of pursuing such ideas will be heavily influenced by what the active members see as being the best way of promoting the objectives of their group or society.

Work Greener

76. The three 'R's of "Reduce: Reuse: Recycle" should be employed whenever practicable. Enlightened self-interest should be a good motivator if any helpers prove reluctant to support proposals for greener ways of working. Lower gas and electricity bills, smaller garage bills, reduced use of fossil fuels, cleaner air, less waste: there really is no good reason for anyone to object. On the contrary, everybody should be eager to play their part in developing greener habits. All the pay-offs are positive. [10]

Positive Environmental Benefits

77. Before undertaking any restoration work all potential environmental effects must be thoroughly considered. Any disturbance and other negative factors need to be minimised. Project managers should always seek to improve the positive environmental benefits of a scheme so that its beneficial effects on the environment far outweigh any negative ones. [11]

Internal Environment Policy

78. Having and developing a clear appreciation of the environmental impact of everything the group and its members do is increasingly important. Creating and maintaining an Internal Environment Policy is an effective method that each restoration group should consider using to help its work. Such a Policy is not only desirable for the environment but should prove to be a useful tool in increasing their credibility as an environmentally aware organisation and one which people will wish to join and which local councils and grant making bodies will be more inclined to support. Green housekeeping will be good for you.

REFERENCES AND RECOMMENDED READING:

1. Brian Price. *P For Pollution.* Green Print, 1991.

2. *Tyre Safety: INFORMATION AND LEGAL REQUIREMENTS*. Produced by the department of Transport (now DETR) in conjunction with the Tyre Industry Council, 1994.

3. Section 85 Water Resources Act, 1991 and EA Pollution Prevention Guidelines.

4. Peter Cook, MRIN. *A Guide to Boating and the Environment.* BMIF, 1992, p 9 and p 22.

5. Mike Birkin and Brian Price. *C For Chemicals.* Green Print, 1989. This is a useful guide to phosphate and nitrate-free shopping which will help purchasers choose alternatives which are not damaging to the environment.

6. *The Good Wood Guide.* Friends of the Earth, 1997.

7. *Green Guide for Buyers*. DETR, 1998.

8. John Button. *How to be Green.* Century Press, 1989.

9. *Register of Recycled Paper and Paper Products*. The Stationary Office

10. *Environmental Management*. Croner Publications Limited.

11. *Environmental Action Guide*. The Stationary Office. ISBN 0-11-752311-9.

USEFUL ORGANISATIONS

Department of the Environment, transport and the Regions
Environmental & Energy Awareness Division
Ashdown House, 123 Victoria Street, London SW1E 6DE
Tel: 0171 890 6598 Fax: 0171 890 6569

Environment Agency
Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, BS12 4UD
Tel: 01454 624400 Fax: 01454 624409

British Marine Industries Federation
Meadlake Place, Thorpe Lea Road, Egham, Surrey, TW20 8HE
Tel: 01784 473377 Fax: 01784 439678

Wastewatch
Gresham House, 24 Holborn Viaduct, London, EC1A 2BN
Tel: 0171 248 1818 Fax: 0171 248 1404

For advice on sourcing suitable paper, as well as recycling, contact:
WASTELINE: 0171 248 0242

Friends of the Earth
Head Office: 26-28 Underwood Street, London, N1 7JQ
Tel: 0171 490 1555 Fax: 0171 490 0881

FoE has local branches which may be able to help restoration groups with information and also practical assistance with recycling, waste management and conservation.

Retread Manufacturers Association
2nd Floor, federation House, Station road, Stoke on Trent, Staffs., ST4 2TJ
Tel: 01782 417777 Fax: 01782 417766

Publicity Material

by
John C. Fletcher
Chairman, North West Region IWA

INTRODUCTION

1. Publicity is the technique or process of attracting public attention to that which you are publicising. For that technique or process to be successful it is necessary to determine the exact nature of what it is you wish to publicise on a particular occasion, to the attention of which section of the public you wish to bring it and the method that you are going to use. The sub-headings give an idea of the breadth of methods used in publicity.

2. Anything written may quickly become out-of-date and it is impossible to predict which elements are likely to appear dated first. An officer who was involved in publicising an international waterways event in 1993, based on that experience, gave advice about publicising a regional event at the same location in 1996. Afterwards the latter officer provided an update on what had changed. One example was that the size of posters now acceptable to most “free” local authority sites has changed. In short, advice can be given with good intention, but will clearly need modifying in the light of experience, and the further from writing date we are the more will have changed.

3. Although there are some overlaps, consideration of publicity can be divided between that which is achieved through media organisations, such as newspapers, magazines and broadcasters, and that publicity which you generate and disseminate more directly. Finally we have a section on profile raising generally.

Some areas requiring publicity

4. Restoration groups may want simply to raise their profile, so that more of the public are aware of their existence, or may wish to join the group. They may wish to publicise or get support for fund raising. They may wish to protect the route of “their” canal. They may want to attract more people to social events, or to particular events such as boat rallies. They may wish to apply pressure on local or central government in relation to proposals or plans which may conflict with the aims of the organisation. They may want to use publicity to thank supporters.

Managing publicity

5. There is no right and wrong way to manage publicity but it is likely to be less effective (and appear so) unless thought is given to its management. In some organisations their instruments of management specify that, for example, only members of the Board of Management may make public pronouncements on behalf of the organisation. In practice this may be managed (as it is within the Inland Waterways Association) by a requirement to submit all press releases and public written statements to a Council Member - usually a Regional Chairman - before it is sent out. Thus, while it may have been generated elsewhere and sent out by other individuals, it has the authority of a member of the board of management. *Check the requirements of your organisation - in original documentation*. If there are no specific requirements then it is suggested that your managing body need to set down their requirements so that they “keep control” of media information and are, in consequence, more happy to take responsibility for it.

6. Publicity in its widest sense can become a function of every member of the organisation, but more specific publicity tasks may become the responsibility of a number of individuals. There may therefore be a “Press Officer”, an “Exhibition Officer”, a “Magazine Editor” and a “Magazine Distributor”. There may be a “Publications Officer”, and a “Sales Officer”. A “Membership Secretary” may well generate his/her own material to attract recruits to membership.

7. To an informal group it may seem pedantic, but the limits of responsibility of each of these roles needs considering by the management group so that there is no misunderstanding and the management group corporately feel happy with what is being said about “their” organisation in their name. It would be unproductive to have a Board meeting before anybody could comment on the phone to a newspaper reporter making enquiries. However, all need to know who may say what.

8. There is no substitute for experience and proper training in dealing with the media at first hand. If funds allow, it is always worthwhile getting the nominated media officer some appropriate training. For example, doing interviews is all about credibility and the ability of leaving your audience on your side and able to remember the message. Hesitation delivering that message or odd expressions during delivery can defeat this. Training should enable the media officer to be aware of these glitches and overcome them.

MEDIA

Press releases

9. Press releases may be issued as a single release - the only information about a particular event or happening - or may be a series about the same event, issued one or two a week for a few weeks in the lead up to a major event. In these latter circumstances the whole series needs planning in advance with themes (e.g. Historic boats attending, Distinguished foreign guests. Activities for all to enjoy, Opening by Lord Mayor) and to link the four themes the "Editor's note" (see below) could summarise in later issues, what had been said in earlier press releases.

10. Requirements for a press release are:

    TITLE: What is it about? Snappy but informative

    WHEN: Date and time(s)

    WHERE: Where it will take place

    The layout should be on headed paper of the organisation being represented. Unless special "PRESS RELEASE" paper is provided, the created document should clearly state that it is a press release and it is helpful if this can be printed in large plain letters - even larger and plainer than the title of your individual press release. If sent by post all copies should be printed on original headed paper and not be photocopies, however clear.

11. The piece should stand alone - make sense to the uninitiated without further explanation, but should not be verbose. If the main text comes out at more than 250 words consider whether you need two press releases to cover more than one issue. Although the organisation title will be on the headed paper it is important also to get the name of your organisation in the first sentence of the text. It reads well if it closes with a relevant quote of a relevant V.I.P. However uneconomical it may appear, those posted should be on single sided paper. It is wise to get somebody to check its contents even if your organisation doesn't require it. Two heads are better than one. Journalists like their press releases with ragged right margin - not centralised or justified (both margins straight). The text should be double spaced. The press release should be dated. To make it comprehensive you might want to add an "Editor's Note" giving background detail such as the aims of the organisation and/or a summary of an earlier press release on the same subject. The "Editor's Note" can be single spacing. (See Fig 1).

12. There should be a named contact with telephone number available during the daytime. If that person is going to be on site at an event state how they can be got hold of and when (e.g. mobile phone number) Finally it may be useful to note on the press release particular photo and interview opportunities - with details of what exactly may be photographed, when and where. This is particularly important if you can "mock up" an event before it takes place to give timely publicity.

13. Whether "mocked up" or for real, events can be made more appealing for press photographs or television by the use of such things as fancy dress (e.g. period boaters' costume), by the use of animals (e.g. boat horse), or by the involvement of the very young, very old, or the disabled. Ensure, however, that the use of these subterfuges neither demeans the subject matter of the event or the "actors" you are using. Ensure photographers do not "create" unsafe situations to photograph, which may at best bring your organisation into disrepute or at worst provide a bad example for emulation, possibly with disastrous results for others. If you have a regular (e.g. annual) event then have a stock of photographs – "one I took last year" - and mention their availability in the "Editor's Note" of the press release. Expect to lose any print copies you make available this way.

14. Press releases may still be sent by post but most media organisations distribute by computer or fax. Fax is more readily available to the amateur. It is speedy, cheaper than post, and, if you use the general addressee of "Newsdesk" can considerably reduce the number of prints you have to make of your press release. However all media outlets are bombarded with paper and electronic information and press releases. A high percentage of these go straight in the bin. It is therefore essential to target named individuals in the media outlets. Once contact has been made with an individual (journalist) further contact can be cultivated, but care should be taken not to pester as he/she will not be inclined to keep in touch.

15. It follows that you need a personal directory of appropriate editorial fax numbers. If not widely publicised they can be obtained either from a media directory at a reference library (check it is up-to-date) or by phone from the switchboard operators of the media organisations you wish to contact. Check you get the editorial fax number and not (for example) the advertising fax number. It pays to keep your directory for future reference. If you have not yet made a directory and have no other contacts, search "Yellow Pages" and phone all likely contacts and create a personal phone/fax directory.

16. Having issued your press release keep a copy or copies to hand. Recently an IWA officer attracted television cameras to an event by sending a press release to a Manchester television office. The news producer in Liverpool, however, had not seen the press release and contacted her on site to request further information. She hurriedly found a fax machine before the one o'clock news! A reporter or news crew who come on site might also not have seen the press release which results in them being there!

17. Remember that big media organisations are only interested in big events or stories, and most local press outlets are extremely parochial. Don't waste time letting suburban local papers know about a city centre event. Don't bother wasting the time of television or national waterways press letting them know about events the likes of which are happening up and down the country all the time. You will waste your organisation's money and the media's time on irrelevancies. If your event is very local then the local press are the most likely to respond, particularly if there is an opportunity to photograph a local personality in an unusual situation. "Mayor flings mud" might indicate the first citizen has been persuaded to drive a dredger!

18. For smaller waterway groups it may well be that the local press and in consequence the local councillors are the very hearts and minds they wish to influence.

Exclusive press items

19. Having developed rapport with a particular reporter in a news organisation you may wish to give them advance or exclusive access to a story. If so, make it quite clear to them that this is what you are doing and tell them why. Sometimes an interested or experienced reporter might create their own exclusive by responding to a press release with a series of leading questions. Fine if you are authorised to respond, but be careful that you do not breach confidences, (never tell the press anything "in confidence" unless you really mean them to publish it). Do not make outlandish responses to tricky questions, or tell the whole truth when your organisation has already planned a timed release of information for good strategic or political reasons!

20. If asked to react to a negative or damaging story always take time to prepare a short statement before responding.

Broadcasters responding to press releases

21. If you have a very major event then it is worth sending press releases to television stations and regional radio stations. Smaller events may be of interest to local radio stations. There are two basic types of local stations. Those which are almost exclusively "music" and those which are mainly "talk". In the case of the former they may have short punchy news broadcasts which may take up your story, or to get a mention you may be confined to phoning in for a "dedication" to someone involved in the event. "Can I please have a song dedicated to the Duckville Boat Club who have a team in the Boatmen's Games at the Newttown Boat Rally this afternoon?" With either type of station beware of the interviewer or DJ who deliberately sets out to ridicule interviewees or the causes they espouse. It goes without saying that because your voice will be used in the broadcast, live or recorded, that you should be especially careful about what you say.

22. "Talk" stations, however, are often looking for material to pad their programmes, or on which to concentrate a particular edition of a programme. Involvement with such a radio station may vary from an interview by phone (either to tape or directly on air), through attendance at studio for a similar interview face to face, via an outside broadcast with a mobile "radio car" (for which you may need a number of relevant people to be interviewed) right through to broadcasting off an event site. In the last case considerable preparation will be needed in terms of negotiating services and space to be provided, and also lining up a wide variety of speakers whose subject matter will only overlap minimally.

23. A magazine programme broadcast from "on site" could, as well as their regular slots have interviews about, for example, the event organiser or chairman, a boater who cruises extensively, a representative of a local restoration society, somebody talking about boat building, or boat hiring, or painting "roses and castles". If you are familiar with the programme "regular slots" you may even be able to involve them.

24. Fig 1

EXAMPLES OF PRESS RELEASE - Page 1

The Inland Waterways Association

Date: December 31, 1996 Immediate Release

1997: THE BEGINNING OF THE END FOR BOATS ON CANALS AND RIVERS
"Fewer Boaters on Fewer Waterways"

The cost of owning a boat will rise dramatically in 1997 while Government cutbacks in funding have led to a £125 million backlog in essential maintenance which may soon force the closure of canals and rivers as they are declared unsafe.

The cost of a boat licence from British Waterways is set to rise by more than 30 per cent in real terms over the next three years starting in January 1997.

Also 1 January sees the introduction of compulsory third party insurance and the Boat Safety Scheme - which is similar to the MOT for cars. The Inland Waterways Association (IWA), which represents most waterway users, recognises that insurance and the Boat Safety Scheme are necessary for the protection of the majority, but is outraged at the massive licence increase which will hit boaters especially hard at this time.

At the same time, the structure of Britain's inland waterways is in crisis resulting from accumulated cutbacks in funding to both British Waterways and the Environment Agency, who together run 2,500 miles of navigable canals and rivers in Britain,

"It seems as if Government wants to force boaters off the water just when they should be encouraging new boaters and new licences to help raise funding for our woefully neglected waterways" says Audrey Smith, national chairman of the IWA.

"This canal system, a vital part of our national heritage, is entering its third century and navigable rivers have been used for thousands of years, but maintaining ancient locks, weirs and embankments in a safe and usable condition costs more money than boaters alone can pay. Besides, many other waterway users - the walkers, the naturalists, the cyclists, industry, drainage concerns and water users pay virtually nothing towards the maintenance of our inland waterways. The cost is all heaped upon the poor boater".

"In order to fund a sustainable maintenance programme for the canal network, British Waterways requires ongoing annual Grant-in-Aid from the Department of the Environment of £58 million at today's prices. Regrettably, a shortfall of £7 million a year each year into the future has been announced by a short-sighted Government."

Previous under-funding has caused a backlog of essential maintenance on canals and rivers run by both British Waterways and the Environment Agency. The estimated backlog is now over £125 million. There is an acute danger of waterways being closed to users because of safety concerns.

"Unless the Government provides secure and sensible funding into the future, that also takes into account the immense backlog of critical maintenance work, there will be fewer boaters on fewer waterways."

"In election year, IWA members will push all political parties for sensible policies for future funding of both the waterways and a resolution to the £125 million backlog in maintenance."

- end -

For further information please contact:

Neil Edwards, IWA executive director, on 0171 586 2510 / 2556 (day) or 01376 512997 (evenings) or Audrey Smith, on 01257 274440 (anytime)

Notes for Editors:

For 50 years the Inland Waterways Association, and its thousands of members, have campaigned in the face of Government indifference for the retention, restoration, conservation and development of Britain's navigable canals and rivers.

The IWA believes that canals and rivers should be used for commercial and leisure boating and many other activities including educational activity, canoeing and towpath walking. It seeks to preserve the ecological, heritage and architectural aspects of the country's inland waterways for all.

The IWA has encouraged and supported many restoration groups over the years leading to 500 miles of waterways being successfully restored to navigation and a similar mileage where restoration schemes are active or pending.

24. “Connie from Crumpsall”, a Greater Manchester Radio version of Mrs. Merton was, at a recent event, persuaded to drive a British Waterways JCB and talk about it - this being one of the activities involved in a “Waterways for Youth” type activity.

25. While an interview may be conducted as a result of a press release days before the event, discussion about the *possibility* of a major radio presence on site needs discussing with producers at a very early date. Commercial stations may charge for this presence. BBC may come for nothing, or may come for the cost of a broadcast quality land line (which can be big money). Commercial stations may indicate they want you to buy advertising space in the lead-up period. If they do, remember there is not only the cost of the advertising time, there is the cost of creating “the jingle”. The station will usually put you in touch with an agency. The quality varies enormously but good commercial stations will want quality advertisements. They don’t come cheap to create - at least £200 - £300 for 30 seconds. Broadcast of your 30 second jingle 30 - 90 times will cost many thousands of pounds. Only if you have a massive sponsored publicity budget are these latter sorts of options likely to be open to you, and in this case sponsor publicity organisations are likely not only to be involved, but actively pushing you in particular directions. “He who pays the piper....”

26. BBC radio stations, broadcasting from site, may trailer the event in programmes for a week or more, which can provide you with another form of “free” advertising.

Television

27. While it is difficult to find an amateur-organised event which could afford television advertising, if you reach these dizzy heights it is suggested that you employ a publicity agency used to commissioning television work. However it may be possible to get a free “advert”. Granada Television’s weather man, Fred Talbot, often begins his evening weather forecast “on location”. In 1993 he recorded the introduction to his weather forecast on the hire boat of the Dutch guests of honour at the International Waterways Festival, to which they had arrived early. Programmes which frequently go “on location” in this way often have researchers who can be contacted in advance. You can’t rely on this as an essential piece of a marketing package, but it is a wonderful extra when it comes off!

28. Where cable television systems are available, they can present much more accessible opportunities to the smaller voluntary organisation. They often have a community channel which can be used for publicising the aims of an organisation and seeking new members.

Reporting events which are about to happen

29. Because some periodicals have a long preparation time you may need to write up an event which is still to take place. Be careful to get your tense right for when it will appear. A competent editor *should* sort it out but it is not wise to rely on it. Recently published was a comment which in effect said: “The proposed festival is to be known as the Duckville Rally took place on.....following another event the previous day .... An action-packed day was provided” Clearly the editor had been no help in this instance.

30. For a major event it may be possible to interest the national waterways press some time in advance. *Waterways World*, for example, may commission a history of a new site on which an event takes place and if of sufficient interest they may publish it as a mini-series for 2 or 3 months in the lead up to an event.

31. If asked for information by a particular date ensure that it arrives in time or suffer the consequences. Notice of meetings, for example, need to be with national waterways press around 3 months before they occur. The waterways press will not print free information of meetings unless all relevant information is present - date, time, place, speaker, title, organisation. If you have a season of events they can all be sent at once and they will be retained on the publication’s computer.

Press advertisements

32. For events at which you wish to attract the general public, press advertising may be more likely to be within the budget constraints you face. There are a wide range of options and ways of making your money go further. A half page advert, Thursday or Friday night in a regional paper, may cost several thousand pounds. A very small display advert (business card size) may be a hundred or four, but pleading poverty may enhance your negotiating position, as may putting the advertising manager in touch with commercial organisation attending your event, who may themselves be willing to buy advertising space to say that they will be at “your” event!

33. Having bought some advertising space, the newspaper may be "persuaded" to take more notice of your press releases, and in consequence you may find that you need to send them both to the Newsdesk and to a named individual in the advertising department. Careful use of the above measures, may, if you are lucky, result in a double page spread for a few hundred pounds. The effect on event attendances, and therefore your traders, can be dramatic!

34. Another way of getting a lot of coverage cheaply is to offer a competition prize which you may yourself have been able to beg. A free narrow boat holiday, or even a day hire boat for the day, may be a suitable prize. When negotiating the competition make sure the question is one which a significant proportion of "Joe Public" could answer, and make sure it is directly linked to the event - such as drawing the result on the hire boat of the donor at the event, or "on air". Do not underestimate the work involved in begging the prize, setting up the competition with a newspaper group, and contacting the winner and liaising between winner and donor of prize.

35. While not attempting to stifle the press, ensure that there is an understanding that if there is any criticism of the event being reported ("We don't want a boat rally in our back yard") there is an adequate opportunity for you - as an advertiser - to respond with your side of the story.

36. Another version of advertising is an "Advertorial". This appears to be editorial material in the paper, but it is controlled by the advertiser, usually written by a copywriter in the advertising department but with your power of veto over what appears. Again it can be linked to "taking up press releases". The cost is usually similar to an advertisement of the same size in the same paper.

37. Apart from using the story content of press releases, it is reasonable to assume that press and local radio may at least take up the date and time of events and use this information in their "What's On" slots. The "What's On" slots may also, of course be directly targeted by fax, letter, or phone call.

INFORMATION PROVISION

38. Let us now turn to those areas of advertising which you more closely control yourself.

39. As an adjunct to press releases, or as an alternative where sustained attention is required (e.g. preservation of an old building) a group of people may target the "Letters to the Editor" page of a particular or several newspapers. They should all be individualised letters and make different points. The Editor won't print 20 similar letters. They should be printed on different printers, and preferably not be on similar headed paper - they should be (in the main) "personal" views, although one expression may come officially from your organisation - Chairman or Press Officer.

Posters

40. Posters are not particularly effective if their sole aim is to advertise the existence of an organisation. If this aim is linked to advertising the subject matter of, and inviting the public to "open" meetings, then it perhaps becomes more worthwhile. In these circumstances the number to be produced will be fairly small and the distribution personal, perhaps round local libraries and tourist information offices, same educational and civic buildings, and some well-wishing retailers and pubs. These adverts can be run off on a computer with reasonable word processing package, providing the quality of the print is good i.e. with a minimum resolution of 300 d.p.i. (dots per inch).

41. It is suggested that the contents could include a brief history or description of the route of "your" canal, a brief description of the organisation, a contact name and telephone number, and details of the next few "open meetings". Remember to replace posters with updated ones when the open meeting part is out of date, and consider updating the rest of the text at the same time.

42. It is essential that the printer is capable of printing large letters which stand out; they must be readable at a distance. Gone are the days when a typewritten notice will suffice, unless it uses a correctable film cartridge. Gone too are the days when a computer that only prints using a dot matrix printer is ideal in this context.

43. Colour adds considerably to the impact but for this purpose it is not necessary to go to the expense of a colour printer. The cheapest way is to print on a tinted paper - costing perhaps half as much again as its white equivalent. Alternatively "Day-Glo" papers suitable for laser and inkjet printers are obtainable and very striking. When bought in packs of 50 at a commercial stationers, A4 sheets of Day-Glo paper cost around 5p each [1996].

44. Altogether different are the poster requirements to get the public to a major event such as a waterways festival. Large quantities are needed. They need to be 4 colour and look professional. Single colour printing will look like cheap advertising for a cheap event and will be responded to as such! The cost of printing 4 colour posters is a small fraction of the total cost. Like so much in printing, especially colour printing, the principal cost is in the set up of the printing plates.

45. Design of the poster can be done on computer screen without the need for printing intermediate stages, and can be done at a variety of high street establishments. Go armed with the text you want (where? when? how much? What's special? contact for further information) and don't forget to take the logos of any sponsoring organisations and your own. Fig 2 shows the stages in preparing a colour poster. Note particularly the impact of reversing the printing, to white letters on blocks of coloured ground.

46. To give an indication of target costs, they may be built up as follows [1996]:

- General typesetting fees were £3 per page (A5) and £5 per page (A4) but many charge £8-£10 per A4 page.
- For a poster basic fee including printing in the text £10.00
- Each logo scanned in £1.00
- Each trial print at A4 in colour £1.00

47. The person who can conveniently prepare this stage for you in the high street is often not the best person to prepare a large colour print run. The equipment is different and one company may not have both types of equipment or be most economical or convenient for both sides of the job. A commercial printer who will quote for a run of 1000 to 2000 for most local to regional events is your best bet. Printing 1000 A4 4 colour posters would be approximately £400 and 2000 would be approximately £500.

48. While printers may cut their costs to the bone, paper prices are very volatile.

49. There is no short cut to shopping around AND using the advice of others in the area (not necessarily waterway event organisers) who have tried it before. Local authority publicity departments may provide some contacts.

50. When seeking quotations ask:

- Does the price include V.A.T? (Although there is no V.A.T. on printing there can be on artwork and typesetting)
- Is there a minimum charge?
- What are the setting-up charges?
- Are there any charges for author's corrections? (i.e. if you got it wrong!)

51. As indicated in the introduction, unless you are in the game of buying advertising hoarding space - and few waterways events, if any, are - most places will only readily put up an A4 size advert.

52. Since set up is the major cost, order more than you are likely to use. Consider how you will distribute to ensure those which are distributed are actually displayed. For a rally, every member of the team can be persuaded to contact their local library, education offices and town halls. These three organisation types will often take scores at a time and distribute through their networks (e.g. to all branch libraries). Using such networks saves time but you do become more dependent on remote employees and if you can afford the time a personal distribution to (e.g.) branch libraries can make a difference. A personal visit to retailers and pubs in the area will often meet with a high level of co-operation. Finally, if your budget will run to it, local authority publicity departments may be able to put you in touch with a poster distributing network. In the Manchester area, for example, there is an organisation which will distribute posters to a selection of sites and organisations which the advertiser can choose, through 4 counties, for charities the cost is much less than the cost of posting one to each of those destinations, even if you knew of their existence and their postal address!

Fig 2

STAGES IN POSTER PRODUCTION

Stages in production of a poster for Margaret Fletcher, Publicity Officer, Waterways for All, by Liz Donlan Secretarial & Typesetting

53. Clearly such organisations have distribution timetables which have to be borne in mind when setting the deadline for poster production. Except for national events to which the public plan to go over long periods, most poster campaigns need concentrating in the very few weeks before the event. Too late and the public are already committed. Too early and the posters get covered by subsequent ones before the event occurs! It is perhaps worth aiming for posters to appear about 18 days before an event. (Internal network distribution might therefore require distribution to, for example, central library about 21 days before the event). An area can be "blitzed" 10 days before an event so that the posters are seen in locations similar to your event one week preceding your event. Reaction (hopefully), "That looks interesting. I'll go there next week."

54. If giving posters to Tourist Information Offices, they welcome smaller notices which their clients can take away. Having attracted attention with a colour poster, "take-aways" can be simply produced single colour reminders. Some companies specialise in very cheap advertising, producing a number of images from a single plate by turning the paper as it passes through the printer. The term used for this technique is "work and turn" and you may find advertisements using this terminology in printers' advertisements in *Exchange and Mart*.

55. Posters to attract the converted - the boater and his supporters - may be produced much further in advance than public posters - circulated through boat clubs, restoration societies, and IWA branches - and be produced in a similar manner to posters for your social events.

56. Sponsoring organisations may have their own publicity departments; they may want to check the contents of the advertisements; or they may as part of the sponsorship deal, offer professional help with poster distribution or creation. Allow time for their input - unlike you the "job" may not be top of their priorities. Also remember that they are sponsors and not organisers, and you will know the essential items the organisation of the event wishes to portray. Sponsors will be trying to get the biggest mention for the sponsoring organisation. For quickness, the exchange of faxes between you, the creator of the poster, and them, the sponsor, speeds up the process considerably, and in this set of circumstances you will almost certainly find "time is of the essence".

Leaflets

57. Mention has already been made of leaflets as "take-aways" - aids to memory - supporting posters, often A5 in size. The front of these might be a simple black and white rendering of the standard poster, while the reverse may give more details for getting to the event, car parking, or fuller details of the entertainment.

58. Another use for leaflets is to recruit members. A membership form may be printed on A4 and folded into 3, one panel of which can be torn off as the application to join. Make sure the applicant doesn't lose vital information on the reverse of the tear-off piece! Make sure a fold doesn't pass through the middle of a title!

59. Other panels may have a history of the canal, a map, history of the society with main aims and aspirations or methods of achieving them, or proposals for the near future. Clearly stated should be the cost of membership and what it offers. Societies which are companies and charities will have specific wording requirements, laid down, for example, in their Articles of Association.

60. Companies which print, usually have folding machines and having your leaflet machine folded into three costs comparatively little, saves you lots of work, and looks much neater.

61. To get people on to "your" canal you may produce walk leaflets - perhaps A4 folded into 3 as above, or A3 folded into 6. Maps must be clear and well drawn and only use public rights of way, or permissive routes with written consent held by your organisation. It is useful to indicate public transport provision, car parking and whether suitable for wheelchair access. Local authorities or Tourist Boards may be persuaded to subsidize the production. Alternatively a small charge may be made for them - to cover costs.

Books

62. A stage up from this is to publish books which fill gaps in the market; perhaps a book of circular walks or a collection of historical photographs.

63. The outlay for a simple production with black and white illustrations can be comparatively low, but if colour is contemplated because of its intrinsic appeal, or because of the increased marketability of the product, then the minimum economic run becomes much higher - perhaps rising to round 2500 copies - and you have to be sure of the capital required and the eventual market for this sort of quantity. Remember that there is a requirement to supply copies to the Copyright Libraries under the provisions of Section 15 of the Copyright Act 1911. Five copies can be sent to A.T. Small, Agent, 100 Euston Street, London, NW1 2HQ, who will forward them to the

Universities of Oxford and Cambridge, the National Library of Scotland, the Library of Trinity College Dublin, and the National Library of Wales. A sixth copy has to be sent by you direct to the Legal Deposit Office, The British Library, Boston Spa, Wetherby, West Yorkshire, LS23 7BY.

64. You or your organisation can set up as a publisher and obtain an ISBN for your book at no cost - ensuring that it is consistently listed in "Books in print" - in one of its forms this is the standard reference of libraries and booksellers. There are very specific requirements about the display of the ISBN on your book. You must contact J. Whittaker & Sons Ltd., 12 Dyott Street, London, WC1A 1DF for advice at an early stage of preparation for publication.

65. As a rule of thumb it has been found that the given unit production cost should be at least doubled to give a wholesale price and tripled to give a retail price. Pricing structure has to ensure that when wholesale copies are sent out and postage added, there is still sufficient margin for the retailer to retain some profit. Your organisation may be willing to sacrifice profit for publicity purposes. Few retailers will be willing to contribute to your publicity in this way.

Videos

66. Foolproof video cameras which produce passable sequences of the family steering a boat or working a lock are readily available and cheap to run, but the results are not suitable for mass duplication, distribution, and inflicting on the general public. As a nation we enjoy high quality television productions which are well filmed and well edited. Without realising, as a generalisation, our tastes in video production are far more sophisticated than our tastes in reading. Unfortunately amateurs set themselves up in video production businesses which produce cheap films which are so abysmal when compared to "British broadcast quality" that they defy comparison. Many who have more sophisticated cameras and reasonable editing facilities, lack the skill to edit successfully and in consequence they produce films with unendurably boring visual content or commentary. Good quality video production is expensive because of the quality and capital cost of all the equipment, the experience and training of the camera, lighting and sound man, the commentator(s) and editors. That is what you will pay for, and handsomely, not the trifling amount for copying. On each copy to be sold, however, you have to add a proportion towards the initial production costs. Expect to pay a lot, but do not expect that all companies that quote a high price will produce acceptable, let alone good, work.

67. If you feel a video of your event or canal is essential and you are going to promote and fund it yourselves, obtain several samples of work from each company from whom you seek a quote, and try and ensure that at least some of the samples are about a similar subject as your own.

68. Unless you already have, for example, an established wide circulation of books which you produce, it is unlikely that you can support the cost of a quality video production. Be realistic. If you can't support a professional job, then use a competent amateur, share the results amongst your friends and those involved, but don't sell the results or inflict them on the public. One small local company quotes [1996] £3,000 - £4,000 as being typical for a production requiring 3 days of shooting (based on a 2 man film crew being required) and 5 days on the editing suite including sound mixing and voice-over work. Any travelling expenses and reasonable accommodation costs would be extra.

The Internet

69. The Internet is a systematised way of organising communications between people and computers who can be connected via "The Net" using modems and telephone lines and utilising local call rates to gain access even when connecting to sites overseas. It is perhaps the area of communications which has changed most significantly in the period immediately prior to the first preparation of this chapter.

70. The system is intended to provide two-way communication via "Email", Bulletin boards, and open forums where ideas and view points can be shared. It was initially the preserve of those whose main hobby was already the use of computers but is now in common use all over the country as well as by the hobbyist.

71. If a waterway organisation has an active member who is involved with the management (and therefore informed about what is going on) and who is also interested in the Internet, then he can spread the word of and enter "discussions" about your waterway and publicise your waterway and organisation using this media. He may well enjoy having something specific to communicate to add to his joy of communicating *per se*.

72. Alternatively the system may be used merely as a noticeboard, perhaps mixing the information which would otherwise be printed on a membership application form and a library poster, and this may be arranged through

an agency for a set fee, or through an interested enthusiast who wishes to enhance the information available from his particular electronic address.

73. While there is much useful information to be gleaned from the system, the quality of much that is available at present may be comparable to the intellectual level of "phone-in" programmes on local radio stations. The problems and causes are similar!

Society magazine

74. The circulation of a society's magazine has to be considered very carefully and the contents, or part of it, may need tailoring to the needs of individual groups of recipients. These may include, in addition to your own members, councillors and senior council officers, members of the Westminster and European Parliaments, past and potential sponsors, waterways and local press. Local press will often re-quote from it as if they have personally interviewed one of the writers, without further intervention. Reports of successful open meetings may encourage others to attend and encourage more active participation amongst the membership.

75. It often seems that the majority of canal society magazines apologise for the late distribution of magazines and publicise events which took place a considerable time before the membership receive it! It is vital to set an achievable timetable for production which is well known to all involved in contributing to its content.

76. Word processing technology is making the creation of higher quality productions, with illustrations, much more accessible within a reasonable budget. Even without the availability of full desktop publishing facilities within the membership, buying in such a service on the high street need not be prohibitively expensive. A competent volunteer within the organisation will reduce the production cost but it may be a false economy to use a less than competent volunteer or one with inadequate equipment.

77. Particularly bear in mind that the person best able to judge the merits of various contributions may not be the best person to arrange the layout on a computer screen. The skills are different. Team work may be the answer.

78. It is arguable that the provision of a magazine to members is a membership service, and for those organisations which are charities it follows that the cost of producing the magazine (printing plus distribution less the income from advertising) must be born out of membership subscriptions. That is not necessarily the case with those magazines distributed to other groups listed above, where it may be argued that the production is a legitimate part of the publicity of the organisation's aims.

79. With a membership of 300 or so, and perhaps 200 issues going free to local authorities and media, it is perhaps realistic to spend [1996] around 75p - £1 per issue on a typical magazine. Larger print runs considerably reduce unit costs or allow for more ambitious production for the same cost. Production costs vary with the use of colour, with the number of photographs scanned and with the amount of words to be keyed in. Most significant, however, are the cost barriers reached at 60 grammes (including envelope) and 100 grammes, because of the pricing structure of our mail system. Copies to Councillors and local authority department heads will be distributed free by the Town Hall on receipt of a bulk delivery.

80. Spot colour arrests attention, well produced monochrome photographs (which may be scanned from colour) add interest but of course must have merit and not be reproduced merely for the gratification of those photographed. Glossy paper provides an illusion of quality. These are all characteristics of the canal society magazine which is the almost constant winner of the Inland Waterways Association's Tom Rolt Award (and deservedly so) - Huddersfield Canal Society's Pennine Link, and also of those which are commended in that same competition. It is worth obtaining copies and trying to emulate them.

Slide shows

81. A collection of appropriate photographic transparencies is essential. It provides a record of the route and condition of your waterway, of improvements and those people involved and it can be an archive of historic views unearthed. It can be a resource for persuasion. Your collection must be clearly labelled with location, date, event, and names of principal people involved or source of historic views and all known details. The quality must be good.

82. When presenting slide shows it helps to vary the selection of slides and tailor them to the audience. It keeps the speaker "fresh". Some audiences may be more interested in one geographic part of the canal, some in historical views, while others will be interested in reconstruction works. Views of other restoration schemes

with obstructions successfully overcome are often useful to demonstrate what can be achieved. Well prepared maps both put your scheme in context nationally and help to familiarise the audience with parts of “your” canal about which they know less. Slides that are used frequently in slide shows need more protection than those that are projected for internal amusement occasionally. Have them mounted in glass and gain the additional advantage of preventing “popping” during your presentation.

83. The society needs to determine whether it will pay for and maintain the collection and the projection equipment, or whether one person is going to finance the collection as part of their hobby. What will happen if that person loses interest in your scheme? The society needs to consider to what extent it can finance the giving of slide shows as part of its contribution to publicity and how much it needs to charge an economic rate for entertaining audiences. On a list as a free or cheap entertainer you will get plenty of invitations, but you have to consider how many of these will result of changing the minds of people who will influence the course of your restoration programme. It often helps defray the cost of going to present a slide show if you are allowed to take some items from your sales stand with you. If you are anxious to get further bookings for your show, have a few business cards to hand, identifying your organisation and where you may be contacted.

Display boards

84. These can be used to demonstrate your aims or achievements at a variety of events. Good quality boards are expensive but like anything similar, contacts in the trade who are supporters may be able to save you expense. Those which look good indoors are not suitable for use outdoors at such events as rallies and it may therefore result in the need for two sets; one sturdy and themselves weather resistant with displays which are laminated to prevent damage by rain; one perhaps aluminium framed, collapsable, portable. Even for indoor use it may be judged worthwhile to laminate photographs to prevent deterioration and finger marks which can’t be removed.

85. A good indoor display may even result in an invitation to display in libraries, banks and building societies when it is not in use at waterway events.

86. The final section is the one where we consider simply raising the profile of an organisation.

RAISING THE PROFILE

Banners

87. Consider purchasing large banners to display at your events so that the organisation is visually linked with the event. It adds additional impact to your organisation name if it appears in press and television pictures. The price can vary enormously. While a very big organisation may bring the cost down by having a large number manufactured, most organisations will have a few hand-produced. In 1996 a simple white banner with eyelets and hand painted lettering at 2 feet by 12-15 feet may cost £30 - £40 plus carriage. It is possible to get quotes 3 or 4 times this figure.

Car and boat stickers

88. These are a comparatively cheap way of bringing the society name repeatedly to attention. They can be of any shape or design, but one important consideration is whether you want the type which sticks to the inside of a clean window just by pressure or the type which has a glued face which sticks more permanently, but leaves an untidy residue afterwards.

Merchandising

89. This may be used either to raise funds and/or to publicise the organisation and retail prices may well reflect the emphasis perceived as more important by the organisation. If you require publicity then items can be sold for little more than the cost price or even given away to worthy recipients. If the main aim is fund raising then on-costs can be added before retailing. Wide ranges of goods can be personalised to your organisation - pens and pencils, coasters, and desktop decorations at one end of the market - and crystal decanters, silverware and watches at the other. It is worth comparing the offerings of a number of specialist advertisers.

Uniform

90. Many societies have a “uniform”. Remember that it has more impact if all members not only wear the same design, but all in the same colour. Consider the impact of a group from Waterway Recovery Group when they are all wearing their red T-shirts, compared to the same bunch wearing a variety of coloured shirts. Whatever colour you choose, make sure that it is a colour reasonably acceptable to male and female, younger and older members. Consider the logo and/or lettering position in relation to female anatomy to minimise embarrassing combinations or hiding part of your title.

91. One canal society has a policy that all Council Members appear at all events where they represent the organisation “in uniform”. Others are encouraged to wear the “uniform” too. It helps them to feel as if they are active and integrated members of the organisation and it increases the impact of the organisation visually.

Badges

92. Simple cheap round badges can be produced to get a slogan across. One supplier, herself makes money for a waterway charity by producing them.

93. Professional looking name badges, such as those used within the Inland Waterways Association, come much more expensive. It is cheapest to order a significant number with your logo on and then have some at a time engraved with names etc.

Suppliers

94. Ways have been suggested of obtaining details of suppliers of products, such as other organisations in the area, or perhaps “Yellow Pages”. If you have difficulty with obtaining a particular type of promotional product it may be worth contacting I.W.A. Head Office, although they may have considerable difficulty in recommending a local supplier, they will certainly be able to direct you to at least one in the country!

No party politics

95. Activists in any organisation aiming to bring about change will undoubtedly come into contact with party politicians at both local and national level. As far as your publicity is concerned you must be seen to be evenhanded. Charities may not themselves become party political and it follows that party political statements must not be made on their behalf irrespective of the party politics of the officer making the statement. The Charity Commissioners issue leaflet CC9 “Political Activities and Campaigning by Charities”.

Be truthful

96. By all means put a reasonably optimistic gloss on your claims, but don’t exaggerate or “go over the top”. To regular recipients of your publicity you will quickly get known as a reliable provider of information - or otherwise. In the long term wildly excessive claims won’t do any good. The publicists, or somebody else in the organisation will inevitably in the long term have to go through some humiliating apologies.

Enjoy

97. Those who work for voluntary organisations do it because, however perverse it may appear, they enjoy what they are doing. Let that enjoyment be seen. It becomes infectious and in itself is a wonderful advertisement to others of like mind. However, enthusiasm is not the only criteria. A degree of skill is needed in implementing the process of publicity and no organisation which needs publicity can afford to have a volunteer responsible for publicity in its widest context, who cannot communicate successfully using many of the methods indicated in this chapter.

CONCLUSION

98. The brief was to be concise and comprehensive. Inevitably some matters have not been covered. This is perhaps no bad thing, for the hallmark of a good publicist is someone who can use all the established techniques and then go further, dream up new ideas or slants which have successful impact. May I respectfully suggest you try the standard techniques first, become proficient, and then literally publicise the waterways like they have never been publicised before!

Policy Presentation and the Political Process

by
David Millett
Past Chairman, Surrey & Hants Canal Society

INTRODUCTION

1. The way in which a waterway restoration society promotes its case with respect to policy presentation and the political process, (at both local and national level) is crucial to the successful achievement of its objectives. This promotion of your case includes lobbying local and often national authorities, getting the support of the local population and obtaining favourable coverage by the local press and media, including radio and television where appropriate.

2. The first important task is for the waterway organisation to set out its aims and objectives for a particular campaign in a form that is completely clear to the general public, the media and politicians. The agreed document should be as concise as possible, but must cover all the relevant arguments and possible objections, leading to precise conclusions. This is so that, even with a cursory reading, the non-waterway-orientated public can see all the benefits easily.

3. The aim must be to build up a credible profile as soon as possible so that the local politicians, public and media alike realise that the campaign is being orchestrated by a responsible organisation whom they can trust and approach at any time.

LOBBYING

4. Before successful lobbying can take place it is necessary to obtain a thorough knowledge and understanding as to how the political process works both locally and, if necessary, nationally. This involves two basic elements, the people and the system. In any discussions that take place, it is necessary always to be mindful of people's roles and place in the decision making process, so that matters, which may at the time be confidential, are handled in an appropriate way.

5. The local authorities concerned may be county, borough, or district, unitary or parish depending on the location of the waterway organisation. The first step is to obtain details of all the council members including their names, addresses and telephone numbers. In addition a list of the committees on which they serve and dates of future council or committee meetings can be obtained from the appropriate local authority. The latter is in case an item relating to the campaign comes up for discussion at a future committee meeting which it may be necessary to attend.

6. It is essential to find out the names of the council members who might be sympathetic to the campaign and also to get to know the chairman and vice chairman of the appropriate committee that will consider any matters in connection with the campaign. As he or she can be crucial in any forthcoming discussion this is an essential exercise. If the chair is well briefed in the subject then it is easier for him or her to lead the discussion of a particular item.

7. Another important person to get to know and lobby is the leader of the council as he or she is a very influential person who also leads the majority group on the council. Members of that group should be lobbied first to elicit their support for the campaign. However it is important not to leave out the other members of the council or they will think that your organisation is making a party political liaison. If the local authority is a hung council then a campaigning organisation has a more difficult task as relationships are much more complex between the respective groups.

8. Where your organisation is dealing with a number of local authorities in your area a good idea is to try and set up a local authority liaison committee, preferably with an officer and member from each authority (exclude parishes from this). Presentations can then be made to each authority by prior arrangement, ideally to the appropriate committee.

9. Because a local authority is people-centred it is also essential to be familiar with the names of the senior officers of the appropriate department which would deal with a waterway campaign or issue. This varies between councils: in some councils it is the leisure department which would deal with the matter whereas in others it could be the environment or planning policy departments that would be involved. The actual officer who deals with day to day matters in

the appropriate department should also be cultivated as he or she may well be the regular contact.

10. Regular briefing of officers is an important part of the lobbying campaign: you are more likely to gain their support if they fully understand the issues involved and any proposals being made. It is the officers who write the reports to be considered by the members of a committee so if they are fully aware of all the facts and arguments then the report is more likely to gain a favourable response from the members who have to vote on it. This is especially so if the important members of the committee have also been lobbied separately.

11. An understanding of how the local authority system works in practice is also essential and one way of achieving this is to attend a meeting of the appropriate committee to get the feel of things. It is also possible to pay a fee to obtain copies of the reports and agendas of the appropriate committees in advance of their meetings so that there is time to lobby and brief sympathetic councillors and, if necessary, the chair of the committee, before the meeting takes place.

12. If it is considered appropriate for a presentation to be made to a group of councillors, either formally or informally, then it is a good idea to make sure that a correct balance of officers from the waterway organisation is achieved to make the best impression. In normal circumstances a petition to advance a campaign will only have limited effect unless it succeeds in demonstrating consensus among a wide cross section of the local population affected by the proposals. Rules concerning the presentation of petitions or the admittance of deputations can be seen in the council's standing orders and, as far as a petition is concerned, it will usually have to be presented by an individual councillor.

13. A proven way to try to influence local councillors and officers is to take an invited group on a visit by coach to another waterway restoration scheme to show a scheme in progress or a completed scheme. Particularly effective in this situation is the inclusion of a boat trip of some sort. It will be fairly easy to identify a suitable location to visit by making contact with the selected waterway organisation and asking them to host the visit.

14. As a result of this visit or tour, members and officers will have demonstrated to them at first hand the potential benefits to be gained by supporting a particular scheme or proposal. By getting this completely different perspective away from their own locality, they will be able to assess the proposals objectively, without their own local pressures clouding the issue. In practice this method can be very effective if it is timed carefully to occur in advance of a particularly important meeting to discuss the issues of a campaign. Officers may also be able to write a more favourable report as a result of the visit, especially if they were very impressed by what they saw.

15. Local authorities are required by law to draw up a local plan to cover all aspects of development and land use in their district or borough. Once it has been agreed after having passed through the planning and consultative process it will be revised probably a couple of times in the following years before a new local plan is drawn up. If a proposed canal restoration scheme passes through more than one local authority area it is very important to try and influence, during the consultation period, the progress of the local plan. It is important for the scheme to be included in the adopted final version as this will make it much easier for subsequent detailed issues to be accepted.

16. The local plan process usually ends up in a public inquiry conducted by an inspector appointed by the Secretary of State for the Environment. This gives local people or organisations the opportunity to make their case, whether to support a policy that is already included in the draft plan or to object to the fact that a certain policy is not included. Waterway organisations should ensure that they take part in this process as the result can have a great bearing on the future acceptance by local authorities of detailed proposals for a restoration scheme.

17. County councils should not be overlooked as it is important to get their members and officers to support a waterway proposal. There is a statutory obligation on county councils to draw up every few years a new county-wide structure plan which sets general guidelines for development and economic activity in their area. A structure plan inquiry is always held where

it is possible to influence future policies after written submissions have been made. However it should be noted that to appear at a structure plan inquiry an organisation has to be invited.

18. This contrasts with a local plan inquiry when, having made a written submission, there is a statutory right to appear and present your case. A timetable and programme is always drawn up so that participating organisations have enough time to prepare their case in detail.

19. Lobbying nationally is essentially concerned with Government, Whitehall and Parliament. The first issue to clarify depends on whether the waterway organisation is a registered charity or not. If it is, the law is clear that charities must not have political objectives. In practice, however, there is not much guidance from the courts on the line to be drawn between activities by charities in a political context in pursuance of their objectives which are permissible and those which encroach too far into the sphere of politics.

20. As a general basis, however, a charity may engage in political activity if:

- there is a reasonable expectation that the activity will effectively further the stated purposes of the charity;
- the activity is within the powers which the charity committee or council of management have to achieve these purposes;
- the views expressed are based on a well founded and reasoned case and are expressed in a reasonable way.

21. However, a waterways charity may not seek to organise public opinion to support or oppose a political party which advocates a particular policy favoured or opposed by a charity. It must also not provide its members or supporters, or members of the public, with pro forma letters or other pro forma material to send to MPs or the government.

22. It is important to obtain definitive advice and to comply with the detailed guidelines on political activities and campaigning by charities which is published by and is obtainable from the Charity Commission, St. Alban's House, 57-60 Haymarket, London, SW1Y 4QX (Tel: 0171 210 4477). See also appropriate sections in chapter entitled *Waterway Societies and their Constitutions - the Legal Perspective*.

23. One of the best ways for a waterway organisation to start to be heard nationally is to join the Parliamentary Waterways Group (PWG) where presentations, discussions and questions are made on a variety of waterways issues. It is possible at these forums to air an issue of particular concern where it relates to the topic of a particular meeting or has a general similarity to this issue. Occasionally the minister responsible for the waterways will be invited to attend and make a short presentation on government waterways policy. Some interested MPs or members of the House of Lords attend these meetings of the PWG but, whether they do or not, minutes of the meetings are circulated afterwards to those who have joined the PWG so they are made aware of the presentations and discussions.

24. Probably the best way, however, for a waterway organisation to have a platform nationally is to cultivate its local MP who may, or may not, be interested in waterways in the first place. A starting point which many waterway organisations adopt is to invite one or more of their local MPs to become a vice president of their organisation. In this way their names can appear on the headed notepaper and they can receive copies of the regular newsletters or magazines of the waterway organisation. As a result, providing they read it, they are kept continually informed and briefed about the campaign or activities of the organisation.

25. MPs need good publicity and getting involved with a campaign can help this. They have access to civil servants and ministers and often the best way to elicit a reply to a particular issue is to write to your MP with a specific question or questions which will then be passed to the appropriate minister. He will then reply to the MP (the reply usually being drafted by a civil servant) and the MP will then forward a copy of this reply with a covering letter.

26. A waterway organisation can also ask its members to write to their MP but it is essential that they draft their letter in their own words perhaps using a pro-forma draft to indicate the main

points and issues to be covered. This is very important: otherwise MPs will receive standard letters which much reduces their impact. Many MPs estimate the strength of public opinion on a particular issue by how many letters they receive on the subject from their constituents. This fact is very important to remember and it is where members of a waterway organisation can feel that they are being very useful to help further the cause of the campaign.

27. As well as getting to know your local MPs it may also be useful to brief your local European Parliamentary Member (MEP) on the campaign. This may be useful if there is a possibility of obtaining grants from a European source in the future where the MEP's support may be very beneficial.

GENERATING SUPPORT

28. The importance to a waterways organisation of generating local support for its campaign is not to be underestimated. In fact it is probably one of the most important facets to be tackled. If local opinion is on your side then the future success of a campaign is more easily attained in spite of the fact that the originators may sometimes be quite a small group of enthusiasts.

29. The first step is to show that the objective of the campaign will benefit a wide cross-selection of the community. A waterway restoration scheme certainly meets this criterion. If local people feel that their lives will be enhanced, and the local environment improved, then it is much easier to gain their support. This support will have a great bearing on the future outcome of the campaign.

30. One of the best ways to start generating favourable local opinion is to hold a series of public meetings in and around the area of the waterway organisation. Arrangements for a public meeting should be planned well in advance with adequate notice given to the local press and radio.

31. As far as the press is concerned, as well as paying for an advertisement, it is essential to try to obtain some editorial coverage as well. So it is worth cultivating the local reporters and getting to know them well in advance. Then information can be fed to them on a regular basis. Hopefully the reporter will then attend the meeting and write an appropriate report afterwards.

32. Posters should also be produced and distributed in suitable locations around the area to publicise the meeting. These should be clear, precise and have a suitable large caption and heading to catch the eye of the public. The colour of the paper used is also important, with yellow paper and black printing showing up very prominently. Day-glo paper is even more effective.

33. Local councillors and appropriate officers of the local authority should be invited to the meeting so that they are able to hear of the aims of the waterway restoration society at an early stage.

34. The format of the meeting is very important. It is advisable to prepare the text of the presentations very carefully so that the relevant points come over very clearly and concisely. The presentations should be illustrated with slides or video film including examples from other waterways of the results of similar restorations or campaigns. After the presentations and slides it is essential to allow time for questions from the audience and for responses to be given. The easiest way to do this is to have a small panel of experts both from the waterway organisation and outside.

35. If there are no press representatives in attendance at the meeting it is a good idea to prepare a press release to issue to the press immediately after the meeting. This should summarise the context of the meeting and the issues raised and discussed during the question and answer session. (See next section - press and media campaigns).

36. So that the general public can be brought on board in support of a restoration project it is advisable to hold an open day on a part of the proposed restoration project. This will illustrate the kind of work that will be needed in the future. This could take the form of showing a derelict lock site or perhaps a blocked bridge-hole.

37. Display boards should be prepared and placed at the chosen site so that members of the public can see what is being proposed with perhaps photographs of other restored waterways. An adequate number of society members should be present, both to talk to the public and to demonstrate some work in progress. Local councillors and officers should receive an invitation so that they can see for themselves an example of the work required in a restoration scheme.

38. Before the open day adequate notice should be given to the local press and media, together with posters at local libraries and shops and any other suitable location.

39. Local support can also be generated by mounting a display in local libraries for a two or three week period, making sure there are adequate leaflet dispensers as part of the display, so that the public have information to take away with them. These leaflets should include details of the proposed project and include an application form for membership of the society. As an alternative, a display in a vacant shop window or perhaps a building society or bank should be considered. In that case leaflets are not appropriate unless it is arranged inside a building where they can be picked up by the public.

40. Most towns now have indoor shopping centres and the managers of these centres are usually only too pleased to provide an area for a local organisation to mount a display for one day or more, including a Saturday. Often vacant shop units are used for this purpose. It is essential once again to ensure that enough members are present to talk to the public and for plenty of leaflets to be available.

41. Good promotional leaflets are a vital tool for a waterway organisation to have at their disposal. Colourful and clear leaflets are best and they can be placed in local libraries or community centres. It is a good idea for the society to obtain some leaflet dispensers of its own for use where no racks are available so that they can be placed on information tables.

42. Another tried and tested way of gaining local support for a campaign or project is to produce a 'Questions and Answers' booklet. This booklet should ask all the questions that any member of the public and local councillors and officers would ask and then briefly and concisely answer the questions. This method has the advantage that people who perhaps feel rather shy at public meetings about asking questions can see all the relevant questions posed in writing. These are then answered in a similar form to the answers that would be given at a public meeting.

43. If the scheme being promoted involves a canal project in a rural area there may well possibly be local landowners who may have acquired parts of the derelict canal bed and it may be the intention to obtain leases or licences over the land in due course. In this instance it is essential to make early contact with these people who may well be influential in the area. If they can be convinced that a canal restoration scheme can enhance the area and provide a good local amenity, then it will make future discussions and negotiations with local authorities in that area that much easier. It is most important to establish credibility with these local landowners and this can best be achieved by demonstrating the standard of work that you intend to carry out.

44. Most local areas usually hold a carnival or a similar event during the summer. This may well include a procession in which a float could be entered to promote the project to the general public who will line the route, perhaps with handouts being distributed along the way.

45. At other local events it may be possible to put up a sales and information stand which should be manned by appropriate members to talk to the public. The members should always wear a badge so that they can be easily identified.

MOUNTING PRESS AND MEDIA CAMPAIGNS

46. The use of the press and media to mount good campaigns is one of the most important and essential tasks of a waterway restoration group. The press and other media enable the organisation's campaign to be read or seen by large numbers of the general public who could not normally be approached in any other way.

47. The first task is to make a list of all the local newspapers, both paid for and free, together with their addresses and telephone numbers. Additionally, details of the local radio and television stations should be obtained. It is a good idea to find out the names of the local reporters who are likely to deal with press releases, reports or articles about the proposed campaign, as they will prove to be a valuable point of contact in the future.

48. A press campaign can take many forms ranging from press releases, reports and articles to letters to the editor. Responses to these can be used to advantage. These will be discussed in more detail later.

49. A press release has to be worded very carefully to ensure that the newspaper gives it adequate consideration and coverage. It has to be concise and have a good strong campaign message or angle.

50. Unlike most forms of writing, which have an introduction, a middle and a conclusion, a press release has to make an immediate impact and then build outwards. A concise, hard hitting summary should start the press release with other information following in decreasing order of importance. It is good practice to include a quote from the chairman of your organisation and possibly a respected and distinguished supporter.

51. Quotes should be the only points in the press release where opinion is directly expressed otherwise the wording should be objective and factual. The text of a press release is sometimes used as copy by reporters directly, so double spacing and wide margins should always be used. Copy should only be written on one side of the paper, always using A4 size.

52. Press releases should always be issued sparingly to make the best impact, as similar repetitions mean that they are less likely to be used. It is good practice to address a press release to an individual reporter or journalist, ideally one known to the waterway organisation. If one is not known then it can be addressed to the editor, or to the news editor at a local radio or television station.

53. A press or news release should always have a date, precise heading, details of the issuer and at least one contact name and telephone number for further information, either at work or at home, or both. At the end of the release, notes for editors can be added or brief supporting material can be attached.

54. Another method of giving publicity to a campaign is to try and arrange for a feature article in a local newspaper. Most newspapers have a features editor who could be approached to see if it is possible to produce a feature on the campaign. Working with the features editor it may be possible to arrange for the article to be prepared and, hopefully, published.

55. The axiom that a picture is equivalent to a thousand words can also be used to advantage by submitting an appropriate photograph with the press release or feature article.

56. A feature article should always be on an exclusive basis because editors are unlikely to run it if they think that a competitor will also be using it. Therefore whereas a press release can be widely circulated, it follows that a feature article should only be offered to one newspaper.

57. The letters column of a newspaper is a very valuable area to support the campaign of a waterways organisation. Often an article or report in a newspaper elicits a response from readers and this can be used to advantage. A letter to the editor should always state that it is intended for publication and should be kept as brief as possible, ideally with a maximum of about one hundred and seventy words. Longer letters will usually be edited before publication which can result in some of the main points being left out. So the motto is, keep it short but ensure that the important campaign message is clearly included. Be warned, however, about entering into a 'for or against' argument in letters to the press. Editors love it but sometimes it can be counter productive.

58. A letter to the editor gives the chairman or press officer of a waterway organisation the opportunity to respond to a letter from a reader with further information to support a campaign objective. The letters to the editor columns can sometimes continue with letters on one issue for several weeks. Usually, however, at some stage the editor will feel that the subject has

been exhausted and will call a halt to further letters. However, this period can be of great advantage to a campaigning organisation.

59. Local radio stations, both commercial but more often the BBC, like to conduct interviews over the telephone during certain programmes. They also invite people to the studio to conduct an interview live on the air on a face to face basis with the presenter. An invitation will usually result from a news editor reading a news release from an organisation and then realising that it can become an important local topical issue. If an invitation is issued it should always be accepted if at all possible. The live interview will often lead to other listeners phoning in with their views or comments, especially if the live interview is part of a phone-in programme, a form which is increasingly popular nowadays. It is also possible that a representative of the waterways organisation may be asked to appear on a filmed item for a television news programme and be asked to suggest, and travel to, an appropriate location.

60. Having in your organisation a press or media officer, with good media connections, is of inestimable benefit. Usually a person with these attributes can be found, especially if an appeal is made within your organisation.

SUMMARY

61. Waterway organisations increasingly have discovered and will continue to find that, in this day and age, the machinations of the political process become ever more important to the successful presentation of a campaign. Campaigns are won or lost as a result of this process because, without the political will, it is impossible for restoration schemes or waterway proposals to be brought to a satisfactory conclusion.

62. Detailed research and preparation is essential but this is only the start of a long campaign. In the political process, timing is also very important coupled with a wide knowledge of those people who need to be convinced.

63. Political moods change from time to time, depending on which party or group is in control of a local authority. As a result priorities change and a waterway organisation needs to be alert to use this situation to its advantage and be ready to grasp the opportunities that arise, often at fairly short notice. However, the danger of the issue becoming a party political football must be kept clearly in mind.

64. If the general public and the press and media can be convinced that a particular scheme or proposal is the right way forward then the politicians can be won over that much more easily. However, in the current political climate this will only happen if the financial costs are seen as reasonable, with or without the assistance of external funding, and the long term benefits are seen as very positive for the area.

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Museum, Visitor and Heritage Centres

by
Michael G. Beech, Curator, Foxton Canal Museum

INTRODUCTION

1. The Foxton Inclined Plane Trust (FIPT) was established in 1980 and opened its museum in 1992. FIPT has since received enquires from others considering similar projects. The following paragraphs are intended to address such enquiries, provoke thought, and suggest ways of moving forward. FIPT reconstructed the Inclined Plane Boat Lift's boiler house for use as a museum, which is now its flagship operation. This is paying dividends for the FIPT, but every project is different and a museum may not be appropriate in every circumstance.

2. There are many reasons why a restoration group wishes to establish a "centre". Reasons for doing so must be well thought out; and as much advice as possible should be sought. In making the decision to set up a centre ask WHY and ask why NOT? The answers should fit on one side of an A4 sheet of paper. Think carefully about the answers.

DEFINITION

3. A full definition of the differences between a museum, visitor or heritage centre (hereafter referred to as centres unless otherwise stated) is complicated by the overlap which can occur as a centre develops. Visitor and heritage centres are primarily "attractions" whereas museums "preserve artefacts for the public good". An organisation may hold archives, but they are not necessarily museum objects. In any "centre" the public will expect well-informed staff, a sales area, toilet facilities, and possibly refreshments. It is a good idea to visit several centres of similar size to that under consideration before making any decisions.

Visitor Centres

4. The name "visitor centre" carries the widest definition. It can incorporate aspects of heritage centres, and museums. A centre may hold some artefacts but its prime function is to inform the public about the present situation, background history, and future plans. A visitor centre provides the best means to raise funds, especially if staffed entirely by volunteers. It provides an excellent opportunity to promote a restoration project. It will rely on models, words, pictures and maps to tell its story. Its displays can cover a smaller area leaving extra space for sales and other fund raising activities.

Heritage Centres

5. The main theme of displays in heritage centres should be about history, although it can promote the future of a restoration project. Real objects, replicas or copies of historical objects can be to used to tell the story. The name may be used to "soften" the museum image. It is often used in place of "museum". The word "heritage" is also used to escape the duties of a true museum. If an organisation is to be taken seriously, it must not misuse the word in this way. If the centre is not registered as a museum, it infers a lesser duty of care to any objects used in its displays. A heritage centre is less likely to make a profit than a visitor centre, because of its extra commitment to historical research, and the probability that it will be caring for some artefacts. Heritage centres can be converted to museums during their development.

Museums

6. The name "museum" implies a commitment that is on a different scale from that of a visitor or heritage centre.

7. The Museums Association's definition is: "A museum enables people to explore collections for inspiration, learning, and enjoyment. It is an institution that collects, safeguards and makes accessible artefacts and specimens, which it holds in trust for society."

8. The commitment of being a museum is therefore not to be taken lightly. Its intention must be to preserve its collection forever. It is expected to: seek registration by the Museums and Galleries Commission (MGC); operate within the ethical guidelines, published by the Museums Association; produce policies for collection and disposal of artefacts; and keep records to a standard acceptable to the museum community. These rules may seem onerous

but they act as a safeguard. They prevent individuals or organisations setting up "museums" (often collecting donated artefacts), and then closing them when interest is lost or they are not financially viable. Collections are then often sold off to the highest bidder. (Registered charities cannot do this). Museums do not normally make a profit; indeed they can be a liability. Museums can, however, attract funding unavailable to visitor or heritage centres. The support network for museums is now extensive and easy to access. Registered museums are the only proper vehicle for the preservation of a collection of artefacts. The essential ingredients of a museum are the objects in its collection. To set up a museum, a collection or the promise of a substantial number of items is essential. Good quality historic waterway objects are not easy to come by. Some objects are better displayed in their original situation. It is easier to set up a museum without a collection because objects can be collected to a fixed acquisition policy and then properly documented. Storing and caring for objects not on display is expensive.

Warning!

9. All "centres" are businesses; the responsibilities are serious. If something goes wrong, individual trustees, if found negligent, could be held responsible.

10. The Establishment of any form of centre can create unwanted and conflicting divisions in an organisation. An "us and them" attitude can develop to the detriment of the final objective. The allocation of funds to the museum or to restoration can be problematical.

11. Hundreds of all types of centres are closed each year.

Funding

12. At an early stage it is essential to create a business plan. This will include the plan's purpose, its scope, budgets, financial forecasts, time scales and milestones. The Heritage Lottery Fund publishes a useful booklet on this entitled "How to Prepare a Business Plan". Setting up a bank account will be an essential early job. Separate accounting is recommended for the centre and its parent body, but a combined annual report and balance sheet will probably be required. Good quality accounts, acceptable to all concerned are essential. They are needed by several regulatory bodies including the Charity Commission, and are proof that the centre is properly run and funded.

13. In considering funding for the centre project, both set up costs and long term future funding must be considered. It is far easier to obtain set-up funding than it is to secure sufficient funds for future running costs. If working in partnership with local government they may give an annual grant towards running costs but such funding is increasingly under threat. High profile funds such as the lottery do not normally cover running costs. Any set-up grant will depend on evidence that the centre can be run and financed for an extended period. Lottery money is now covered by several documents available from the Heritage Lottery Fund. A long term lease or title to the centre's premises will be essential. The majority of the Foxton Canal Museum's funding was and still is raised almost entirely from visitors' donations. In constructing the building, FIPT ran a scheme where visitors paid £1 to write their name on a brick. This paid for all the materials used in its construction but it did take a few years to raise the money. All the labour involved was voluntary.

14. High set up costs will require a long term occupation of the property. A lease from the owners should be for at least 25 years but preferably longer, with options to renew. Owning the building is the ultimate security. The London Canal Museum chose this route. Although the high initial financial outlay slows the development of the project its long term future is better. Local councils may have suitable property, as may British Waterways. A solicitor's help should be sought in negotiating any lease arrangements to keep costs down. At Foxton, British Waterways eventually agreed a nominal annual rent, plus a share of net profit.

15. Shared premises. It may be possible to share premises with another organisation, a BW office, Tourist information centre or a cafe for instance. Sharing can be problematical; insurance companies don't like shared accommodation and should be consulted in advance. If the other

organisations sharing change their needs how will it affect the centre? Security can be problematical in shared accommodation, and opening times may be affected by other users.

16. The property will be liable to business rates, but a registered charity automatically receives 80% rate relief. The other 20% can be waived by local authorities, if they so choose.

CONSTITUTION AND CHARITABLE STATUS

17. Before making any commitment check whether the constitution of the parent body allows the operation of a centre or will need to be changed. Check that the charitable status is appropriate. If in doubt ask the Charity Commissioners or, in the case of a proposed museum, your local Area Museum Service or the Association of Independent Museums.

THE BUILDING

18. Museums and visitor centres are often housed in redundant buildings that need to be saved. Many waterway buildings are no longer used for their original purpose and some, because of their situation or design, are difficult to convert for future use. Saving a building is not in itself a good enough reason for setting up a centre. The need for a centre must first be demonstrated. Can the building be converted without destroying the very features for which it should be preserved? Success may depend on how well the building can be converted to the new use.

Access

19. It is now unlawful to discriminate against members of the public with special needs. Access to the building should be level or ramped and doors should be of adequate width for wheel chairs. The interior should be accessible at all levels and all passageways should be unobstructed (Do not forget that the law covers all types of disability, including eyesight, hearing and mental ability). Proper access will also be welcomed by families with children's pushchairs, and it will make moving heavy items around the building much easier. Steps will need to be fitted with ramps, and stairs may need chair lifts. There are exceptions in historic buildings where change would be unacceptable and where the financial burden is inappropriate. If in doubt take advice. It is also good practice, and something of an eye opener, to borrow a wheel chair and then use it to view the centre. In most areas there are organisations set up to help those with special needs. The telephone numbers can be found in the phone book or at the local citizens advice bureau. Such organisations will welcome a request for advice - on hazards that most of us do not even notice. Look at the approaches to the centre even if they are controlled by others.

20. Some disabilities may stop visitors enjoying full access to the centre, so an attempt must be made to allow the fullest possible "intellectual access". This may be as simple as avoiding descriptive labels in small text, and can extend to offering text in Braille, offering objects which can be explored by touch, or providing taped guides for use in a "walk man" tape player. High contrast markings can help some visitors with poor eye sight, and special "induction loops" can help those who use hearing aids. With the internet it is relatively easy to make the collections and displays available direct to the person's house. This is a big subject and it should be approached with an open mind.

Location

21. The Foxton Museum gains many visitors because it is situated at the hub of a thriving visitor attraction. The Foxton Locks site has been a natural attraction ever since the locks were opened in 1814. Today the Foxton Museum attracts 15,000 visitors per year (from 200,000 on site). Car parking for the site is good and this helps. The first ever waterway museum at Stoke Bruerne has had many years to build up its visitor base. Its boat trips, restaurants, pubs and picturesque setting, all add to the visitors' experiences. They attract over 41,000 visitors per year; however car parking is restricted and can be difficult on bank holidays, etc. The ideal location will be picturesque, close to a large town, have easy road access, good car parking, and be connected to all mains' services. There is a growing trend to support projects that do

not require people to use their cars to get to them. This should help the London Canal Museum which is served by a first class transport system and a short walk. You can fit a museum into any space. The smallest known to the author is the Measham village museum. which occupies a space only 10 feet by 8 feet. They are looking for larger premises, possibly the old railway station which could be on the route of the new part of the canal re connecting the village. Very small museums are ideal for the limited resources of small villages but the financial viability of the project will be easier with economy of scale. That is to say, more money can be taken from more visitors on larger sites. Lock cottages could be good for a modest project; old warehouses are very good. Visit Gloucester, Ellesmere Port or Nottingham for ideas. Consider space needed for future expansion.

Internal Space

22. The display area is the most important part of any visitor attraction but consider the extra space needed to provide support services. Space is needed for staff coats, storage for sales stock, a broom cupboard, toilets and perhaps for a mower, shovel, etc. Where will the rubbish be kept until it can be disposed of? Museums need extra space for the storage of artefacts not on display. An office for the staff is useful. Storage space for records and archives is essential. The larger and more diverse the activity the more service space it will require. If the intention is to run a gift shop within the building it will need its own space plus storage for the stock. Catering services add a considerable burden to the space requirements depending on what is offered: if this is to be considered, contact the local council for advice on the minimum requirements. If the internal space is divided into small rooms, as would be the case in a lock cottage, more staff will be required than in an open space.

23. If the property is leasehold, have the building checked thoroughly, agree its condition and confirm the maintenance liabilities before taking over. Consider the maintenance of the average home. Everything that needs doing at home will need to be done at the centre including such matters as cleaning windows and gutters. A maintenance programme is good practice; and if properly applied will make sure that work is restricted to a maintenance level rather than turning into a major problem.

Insurance

24. Insure the property, contents, and personnel, as well as covering visitors. The Inland Waterways Association and the Association of Independent Museums have policies that may be suitable. Objects on loan should be valued and if necessary recorded separately with your insurers. It may also be prudent to consider Directors personal liability. Insurance cover available varies depending on the type of organisation involved; it can be a mine field so advice should be taken from an independent insurance expert.

Health and Safety

25. In the excitement of setting up a new centre, rules and regulations can be overlooked. Agree a Health & Safety policy and take advice from the Health & Safety Executive or your local authority as appropriate: their addresses are in the local telephone directory. It is easier to comply with their requirements from the outset than to change later; their advice is free.

Registration

26. To register as a museum contact the Museums & Galleries Commission*. Registration is an important objective for any museum wishing to be taken seriously. There are no costs involved above those of good practice. Take advice from the Association of Independent Museums (AIM) and your local Area Museums Service.

*from 1st April 200, the “MGC will become the “Museums, Libraries & Archives Council (MLAC)”.

Documentation

27. This is not just red tape: any person willing to donate objects should be informed of the centre's status. It will be prudent to keep records of objects lent or donated to the centre, even if a museum is not the intention, to avoid confusion in the future. An important object on which money has been spent, or an object that is the centre piece of an important display, could be reclaimed by its owner or their descendants. Proof of ownership could be vital.

28. Do not accept "permanent loans": there is no such thing. Agree a time limit on loans (renewable if appropriate) and put it in writing. Keeping good records will assist a visitor or heritage centre which decides to register as a museum in the future. Museum organisations will be pleased to advise on current minimum standards and the Museum Documentation Association was set up to do just this job. Their publication "Spectrum" is the accepted basis for what information should be recorded and how to organise it. The important information is:

    - The name and address of the artefact's original owner,
    - Whether it is on loan, a gift, or has been purchased?
    - If it is on loan, how long is the loan period?
    - What is the condition of the artefact?
    - Ensure that the owner signs a form stating his/her intent in clear and unambiguous terms.

29. This will lead to numbering the artefacts for identification. It is also recommended that heritage and visitor centres follow the museum practice of producing collection and disposal policies. Copies of typical policies can be obtained from the local area museums service. The policy should say what type of artefact can and cannot be collected. Adopt a policy of consulting local museums, and other waterway museums, to check if the artefact on offer might better be preserved in the controlled environment of a large museum or archive elsewhere. The object concerned may be one that another organisation needs to complete its collection. The Disposal Policy will set out what will happen if the centre is forced to close - objects would then be offered to other museums - and what is to be done when objects are no longer appropriate for the collection or have deteriorated beyond repair. Historic objects should not be viewed as assets for disposal.

Fitting out

30. Setting up a centre will take considerable expertise. Consider employing a professional designer but make sure that the designer understands the constraints of your budget. Centres running on a shoestring can acquire a charm all of their own. The public will respond more generously to a display that has obviously been done at limited cost but with a great deal of effort.

31. Environmental conditions must be right for all types of centre. If the building is too damp, or dry, it could ruin costly efforts in a short time or even destroy a valuable museum object. Too much light will fade displays rapidly. Most local area museums services offer training days on this subject at a modest cost or even free to their members. Heating and humidity must also be balanced for the benefit of the objects in the displays rather than for the visitors.

32. Display cabinets and shop counters are very expensive to buy new; try calling local shop fitters who often have used units to dispose of. The glass in second hand cabinets can be a danger. It will probably not be safety glass and should either be replaced or covered with a safety film.

ADVERTISING

33. The best centre in the world will not succeed if few people know it exists. In the early stages get the local press involved and keep feeding them with information. Designate a press officer

to place articles in the papers, on local radio or TV. The best forms of advertising are free. Good quality posters, not too big, can give permanent adverts in libraries pubs, hotels, tourist information centres, boat yards and even some shops and post offices. A leaflet giving opening times and contact numbers, will be useful but only if you get them out to the general public.

STAFF

34. Staffing of the centre is a critical component of success. How often you intend to open and how easy it is to supervise the area will dictate how many staff will be needed. The absolute minimum is 2 staff at any time; even if the centre is closed to the public staff should not be alone for safety reasons. If summer weekends are the target then it can be possible to cover the opening times with volunteers, thereby reducing costs. Experience at Foxton has shown that if you go beyond this paid staff are essential.

35. At Foxton being open 7 days a week is very desirable in summer. To achieve this full time staff with support from additional part-time staff are needed but turnover should increase to pay them a modest wage. Employing staff has the drawback of increased responsibility for the trustees and more work for the treasurer (unless you can also support someone to do the paperwork). It is important that staff have a knowledge of good business practices as well as knowledge of the skills required to run the type of centre chosen. Dedicated amateurs often do an excellent job of setting up a centre. With some training, of the type often offered free by area museum services, they can produce a first class attraction. Many museums are run exclusively by volunteers to very high standards. Avoid relying on a few willing people: when they retire for whatever reason they can be very hard to replace. Over reliance on particular individuals can make them feel "put upon" and is often the cause of valuable skills leaving a project.

36. Selecting and training staff both voluntary and paid is an important step on the road to success. Ideally volunteers should be interviewed for a position in the same way as paid staff; at least two members of the managing organisation should be present, armed with a set of questions to ask. It is necessary to establish the suitability of a person for a job and not just accept the first willing hand. This needs considerable care: the staff are responsible for the smooth running of the centre and must possess the appropriate skills to do so.

37. Training is essential and it is an ongoing process, full advantage should be taken of advice and training given by several museum organisations as well as the "Cultural Heritage National Training Organisation (CHNTO).

38. A visitor centre needs VISITORS: the entire point of the exercise is to provide a service to them. It is very easy to get carried away improving displays, researching or even cleaning but, if open, the visitor must come first. "Front of house" staff are very important people: they must be distinguishable from other persons around and must be vigilant. Conversations with friends or reading the paper should stop when a visitor approaches. Whether they get in free or are asked to pay, visitors deserve a friendly but not overpowering reception. Many visitors prefer to be left alone to browse and as long as they can see that advice or further information is available they will be happy.

Visitors

39. Staff must also be very vigilant because of the tendency of a minority of visitors to steal or damage displays or stock. Visitors come in all shapes and sizes and appearance is no basis on which to judge them. At Foxton some of the biggest donations and most interesting information comes from the most unappetising visitors. Beware of distraction as this is the basis on which most crime is conducted by visitors during opening times. It is recommended that children are not allowed in unaccompanied. Most will behave exceptionally well but, if they do not, difficulties can arise trying to evict them: in the eyes of the parent they will be completely innocent. Adults rather than children are the cause of most problems. If children are asked not to touch they usually comply but adults assume that such signs do not apply to them! At Foxton it was found that insisting on an entry fee no matter how small stops the undesirable element from entering. The vast majority of visitors are no trouble at all. There is

a growing tendency for visitors to come with dogs: there should be no problem in admitting them: they are usually less trouble and under better control than children. However, if food is available dogs must be excluded.

Entrance Fees or Donations

40. It is always a problem to decide whether or not to charge for entry to a centre. In most cases "visitor centres" operate on a free entry and voluntary donation policy. Museums and heritage centres vary considerably. In the early stages of development donations are the fairest way but this does not stop you suggesting a minimum. The public are conditioned to expect free entry because national and local government funded museums are mainly free. The public does not seem to appreciate where the money comes from or how much is needed. When displays are of a high standard it is not realised that their donations and volunteers are essential to support the centre. An entrance fee may be necessary to control visitor numbers. This is the case at Foxton.

Security

41. The security of the collection, staff, and stock, is very important. Consult a representative from the insurance company and the local crime prevention officer for advice. The biggest threat is probably vandalism, but many small museums with antiques have been targets for theft. At Foxton, FIPT have opted for a high level of physical security and a noisy alarm to frighten off those intent on vandalism. The alarm is also connected to a panic button for staff use. Foxton's policy is that the safety of the staff is paramount. Remote silent alarms may be better where the police can offer a fast response time but Foxton is 3 miles from the nearest police station, which is sometimes not staffed.

Networking

42. Networking is something of a buzz word at the present time but there are several opportunities for obtaining real help if you join a group of similar interests, including promotions, free advertising, information sharing, and easy access to advice. In some instances a network can also open the door to grant aid. The most obvious group for any waterway centre is the Inland Waterways Heritage Network, open to all organisations with a waterway interest: membership is currently free. Most counties have an independent museums forum and similar organisations are springing up for all interests. In most cases the more you put into the network the more benefits you can receive.

Collections and Caring for them

43. Whether the centre is a museum or not, any historical object used within it can be considered as part of "the collection". Collections deserve proper care; previous sections of this chapter deal with the documentation of collections and the environmental conditions needed, but collecting and care should go further than this.

- Some objects should not be collected, for instance; if they have been stolen; illegally imported, or contain hazardous materials. The collection of wildlife artefacts, particularly stuffed animals and eggs is very strictly regulated, advice should be taken before adding them to the collection.

- When an object is collected, consideration should be given to its proper care, can it be looked after, or will it deteriorate? Take advice from a conservator on the condition of the object, and what will be necessary to preserve it.

- Never restore" an object without careful consideration and advice: bad restoration can destroy important historical information. Restoration should be reversible and visible, so that you can tell the old from the new.

- Is there any information that will enhance the object such as where, when, and who used it? Are there related documents, log books or letters, which relate to the object? If

possible collect all appropriate documents with the object and avoid the separation of information from objects as the information is an important part of the object's history.

- Will it be used in the displays or will it need to be stored, and can it be stored safely? Storage costs money and if the object is to be left in store and not used would it be better somewhere else?

- Every day handling and cleaning is ultimately detrimental to an object: will it be open display to the public or must it be protected, possibly in a sealed glass case? Collections care is a subject big enough to fill several volumes so staff should be properly trained in this part of the "job". Staff should at least have sufficient knowledge to know when to take advice.

FURTHER READING

Fund Raising For Non- Profit Groups Joyce Young & Ken Wyman ISBN15518 - 0 - 045 - 4. International Self Counsel Press Ltd	American paperback, contains useful tips.
Available from: The Leicester University Book Shop University Road, Leicester	Full range of museum books
How to Prepare a Business Plan Heritage Lottery Fund 7 Holbein Place, London, SW1W8NR	Designed for lottery bids but very useful advice for all projects.
Museums Year Book The Museums Association, Clarkenwell Close, London, EC1R 0PA	Annual Directory of useful addresses, including codes of conduct, services and names.
Manual of Curatorship ISBN 0 - 7506 - 0351 - E The Museums Association, Clarkenwell Close, London, EC1R 0PA	Advice on all aspects of museums from the experts, but written in a friendly way.
Access to Museums and Galleries for People with Disabilities Museums And Galleries Commission Queen Anne's Gate, London, SW1H 9AA	Covers the law and good practice for museums, applies equally to all centres.
Disability Resource Directory Supplement Museums And Galleries Commission Queen Anne's Gate, London, SW1H 9AA	Covers the law and good practice for museums, applies equally to all centres.
AIM guide lines on setting up museums Association of Independent Museums (AIM) C/O The London Transport Museum, Covent Garden, London, WC2E 7BB	Series of "fact sheets" published in the 1980's.
The Manual of Heritage Management Edited by Richard Harrison. Butterworth -Heineman1994 Available from the Museums Association.	Essential reference book for those working in the heritage field.
The National Trust Manual of House Keeping Hermione Sandwith & Sheila Stainton 1991 ISBN 0 - 14 -012344 - X Penguin books From most NT shops.	Practical ways to look after your displays, from the experience of the NT.

The following publications are available from the MGC, and may be of assistance:

Museums collections in Industrial Buildings

Larger and working Objects; a guide to their preservation and care

Managing Museums and Gallery Education

Positive Thinking; Creative approaches to providing museum and gallery education

Access to Museums and Galleries for People with Disabilities

Developing and Training Staff in Museums

Effective Exhibitions

Code of Practise Archives/Museums

Improving Museum security

USEFUL ADDRESSES

Most waterway centres are listed in the Waterways World Canalmanac and the IWA Waterways Directory (published by Canal & Riverboat).

You could also contact IWHN, see below.

Area Museums Councils
For your local contact write to:
Secretary of the committee of
Area Museums Councils.
Cheltenham Road, Cirencester, Gloucestershire, GL7 2JF

There are 10 councils covering the country. They offer advice and training plus grants, they are part funded by central government and part by their own efforts. Essential for those setting up museums.

Association of Independent Museums (AIM)
C/O The London Transport Museum,
Covent Garden, London ,WC2E 7BB.

Network of Museums not run by national or local government. Good for voluntary organisations. Offers training and advice.

English Heritage
Postal Sales, P.O. Box 229
Northampton, NN6 9RY.

Useful heritage publications and free leaflets on conservation

Inland Waterways Heritage Network (IWHN)
C/o A.J.Conder
The National Waterways Museum
Llanthony Warehouse, Gloucester Docks
Gloucester, GL1 2EH

A self help group open to all waterway centres highly recommended.

Museums and Galleries Commission
Queen Anne's Gate, London, SW1H 9AA.

Government funded professional body administering regulations and registration.

Museums Documentation Association (MDA)
Jupiter House, Station Road,
Cambridge, CB1 2JD

Association offering training and setting national standards for museum documentation. Provides useful book list.

Museum Training Institute
1st Floor, Glyde House,
Glydegate,
Bradford, BD5 0UP

NVQ and other museum training

The Charity Commission Woodfield House, Tangier, Taunton, Somerset, TA1 4BL	Set up to further the work of charities by giving advice and information and checking abuses.
St Alban's House, 57-60 Haymarket, London SW1Y 4QX.	3 regional offices
20 Kings Parade, Queens Dock, Liverpool, L3 4DQ.	
The Museums Association Clarkenwell Close, London, EC1R 0PA.	Membership led professional organisation, offering advice, training, qualifications and setting standards.
Royal Commission on Historical Manuscripts Quality House, Quality Court, Chancery Lane, London, WC2A 1HP	

The Use of NEC: Engineering and Construction Contract

by

Roger S Lewendon

CEng FICE MIHT MCIArb MAPM

Consulting Engineer and Adjudicator

Principal of Roger Lewendon Associates

Roger Lewendon Associates

17 Eastward Avenue

Wilmslow

Cheshire

SK9 5LD

Telephone/ Fax 01625 523506

E-mail: roger.lewendon@btinternet.com

FOREWORD

This paper is based on the NEC: Engineering and Construction Contract (Second Edition) published by the Institution of Civil Engineers in 1995. Although it describes in some detail the main contract form, included are details of the Engineering and Construction Short Contract which is one of the same "family" of contracts, with the same in-built philosophies, and which can be used for simple and straightforward work of any value.

Of necessity the descriptions of the contract and its procedures have been simplified and summarised. Anyone who is considering using the contract should refer to the documentation itself and seek professional advice on its application.

TRADITIONAL CONTRACT PROCUREMENT

Traditionally the procurement of civil engineering construction projects has used one of the editions of the ICE Conditions of Contract or similar. These Conditions were first issued in 1945 although their origins go back even further in time. To their considerable advantage they are legally tried and tested, and a custom of usage has developed by their extensive and successful use over the years.

When all work can be identified, a project can be completely designed and detailed and a Bill of Quantities produced then these standard Conditions are a very capable form to use. However, if there are uncertainties of the scope or detail of the work required which might require change, then the relative inflexibility of this form of contract starts to make itself felt since they are reliant on the Contractor pricing a Bill of Quantities to give a contract price.

NEC: ENGINEERING AND CONSTRUCTION CONTRACT (ECC)

The New Engineering Contract or "NEC" originated under this name in 1991 and changed to its current name with the publication of the second, and current, edition in 1995.

It has much more recent origins and probably reflects more closely current procurement routes and needs. The contract is not only for civil engineering construction, but is intended to be used for any construction or building work. There is a range of payment options within the contract which deal with the level of physical uncertainty often found in many construction projects

The ECC is a procedurally based contract, requiring the parties to take certain actions in certain circumstances. The ECC procedures give the opportunity for both parties to jointly provide more robust control and achieve increased certainty of project cost outcome. This positive management approach encourages co-operation and provides a good basis for the use of partnering arrangements, leading to a reduction in disputes.

This compares with the generally reactive management approach in traditional forms of contract with problems being dealt with in a less structured way. This does not reflect against the traditional forms, merely that the required management procedures in ECC are more robust and require people to interface on matters sooner.

The ECC is written in plain, readily understood, commercial English. This has caused some unease to new users, perhaps because of what people have become used to over a long period of time.

The role of the Engineer or Architect in traditional forms of contract, with the potentially conflicting responsibilities, is not used in NEC and decisions and directions are dealt with directly by the Employer (through his Project Manager) and the Contractor.

THE OBJECTIVES OF THE ECC.

The Engineering and Construction Contract is intended to achieve three principal objectives :-

- **Flexibility** - in accord with a multi-disciplined approach.
- **Clarity** - to be exportable and understandable and lead to fewer disputes.
- To be a stimulus for **good management** by all parties.

- **Flexibility** is achieved by :-
  - core clauses which are used in all contracts and a choice of one of six main payment options to allow the Employer to choose the payment mechanism which is best suited to a specific contract.
  - a range of secondary options for any combination of core and main option e.g. price adjustment for inflation, retention etc.
  - the full extent of possible subcontracting from 0 - 100%
  - the use of a "Schedule of Contract Data" for the assembly of specific data for a particular contract.

- **Clarity** is achieved by :-
  - use of ordinary language, concise sentences and the avoidance of legal jargon.
  - a simple structure and clause numbering system providing easy access to clauses.
  - flow charting of procedures defining the logic of the procedures and sequences which need to be enabled by the clauses.

- **Stimulus to good management** is achieved by :-
  - the main options allow the optimum contract strategy to be chosen.
  - clear and precise management roles for the Employer's team comprising the project manager, the supervisor and the designer.
  - the Employer's risks are clearly defined in the Compensation Events.
  - standard procedure for assessment of Compensation Events based on forecast effects on actual cost and time. The Employer is able to choose the solution most in his interest.
  - the avoidance of subjective decisions by the provision of precise bases for decisions and actions to be taken.
  - an early warning procedure, the Contractor and Project Manager have duties to warn each other and co-operate.
  - the Contractor is motivated to maintain an updated and realistic programme including Method and Resource Statements.
  - ECC procedures are based on practical construction procedures and are therefore available as a working document and not merely for reference when there is a dispute.

THE ECC FAMILY OF CONTRACTS

All parties involved in the project delivery process can be employed under one of the “family” of integrated NEC contract forms which allows the parties to benefit from back-to-back contractual arrangements. The family comprises:-

- The Engineering and Construction Contract
- The Engineering and Construction Subcontract
- The Professional Services Contract
- The Adjudicators Contract
- The Engineering and Construction Short Contract
- The Engineering and Construction Short Subcontract
- The Engineering and Construction Term Services Contract (consultation version)

PROCUREMENT STRATEGY DECISIONS

The Employer usually considers what might be the most appropriate contract strategy after feasibility stage and before any design or construction has been undertaken. Factors to take into account in deciding which of the main options to use from within the Engineering and Construction Contract system include the following :-

- How clearly identified are the Employer's requirements
- What is the likelihood of change to those identified requirements
- How important to the Employer is certainty of price
- What views prevail on the allocation of risk
- Which party is to be responsible for design
- How important is early commencement and/or rapid completion
- Does the Employer need flexibility in the contractual arrangements

The result should be a statement of the chosen procurement strategy and the range of main and secondary options to be used. The advantage of using Engineering and Construction Contract is that, whatever variations in strategy between different contracts within a project are adopted, the majority of the procedures, based upon the Core Clauses, will be common to all contracts. This flexibility allows the procurement of projects to be matched in a commercially realistic way to the Employer's required outcome.

The ECC has a complete range of payment options such as priced contracts, target and cost reimbursable contracts, a management contract together with the use of either bills of quantities or activity schedules. With the six main options and a range of secondary option clauses each individual contract can be tailored from a set of standard clauses with little or no change to the standard documentation or the standardised procedures. The NEC contract procedures can be actively used as a management tool and decisions regarding design liability and risk can be allocated to the most appropriate party.

The traditional use of a Bill of Quantities is also increasingly being questioned and more Employers are seeing advantages in the use of priced activity schedules available with ECC, often for no other reason than the simpler administration which results. This does, however, lead to an increase in work and cost to the Contractor for the preparation of the priced activity schedule. The use of activity schedules can be considered advantageous to the Employer, as the risk of accuracy of the quantities of work is transferred from the Employer to the Contractor. It is essential, however, that there is a clear statement of the required scope of works in order that the activity schedule covers the full extent of the work required.

There is a notable increase in the use of target cost contracts which has possibly been encouraged by the increasing use of partnering arrangements. There is also an increasing tendency for greater Contractor involvement in design, with the increasing use of various design and build contracts.

RISK IDENTIFICATION AND MANAGEMENT

Before deciding on a procurement strategy, the risk events which can affect the project objectives should be identified and appropriately allocated. The fundamental principles of risk allocation are:-

- Risks should be allocated to the party best able to control them prior to their occurrence
- Risk allocation should encourage good management by the party who carries the risk
- Motivation is provided by the financial consequence
- Risks should not be allocated to a party who is unable to sustain their consequences
- Risks which are outside the Contractor's control should usually be allocated to the Employer

- Where risk allocation is split, the split should reflect each party's ability to influence the likelihood of occurrence and effect.
- The contract should not be cluttered up with risks of small likelihood and impact**.**

It is now generally accepted that the interests of the Employer are best served by limiting the risks carried by the Contractor to those he can control better than the Employer. The ECC allows the Employer to implement a policy of risk allocation which maximises the benefit and minimises the effects of time and cost.

The ECC uses risk allocation to encourage good management of the project with the risks allocated to the party most able to respond to them. There are two opportunities to manage risk allocation, firstly by the choice of the contract main option, and secondly by making an appropriate allocation of risk by the choice of the secondary options.

PROJECT ORGANISATION

In the Engineering and Construction Contract there is no role that is the equivalent of the Architect or Engineer such as is used in traditional contracts. The contract sets out the roles of the following parties :-

- **The Employer**

The Employer will normally appoint a Project Manager and a Supervisor. The actions of the Project Manager and Supervisor are independent of each other.

- **The Project Manager**

The Project Manager's role is to manage the project of behalf of the Employer with the intention of achieving the objectives of the Employer for the completed project. He has authority to change the work, to instruct the Contractor and generally to apply his managerial and engineering judgement. His role is defined in the contract in terms of the actions and decisions he is to take and it is assumed that he has the Employer's authority to carry out these actions and make decisions which are required of him within time limits stated in the contract.

- **The Supervisor**

The Supervisor is appointed by the Employer to check that the Works are carried out in accordance with the Works Information. His role is defined in the Engineering and Construction Contract in terms of the actions and decisions he is to take. His role may include testing of materials and workmanship and observing tests which the Contractor carries out. He is also concerned with identifying and correcting Defects and certifying Defects when he issues the Defects Certificate.

- **The Adjudicator**

The Adjudicator is appointed jointly by the Employer and Contractor and only becomes involved when a dispute is referred to him. As a person independent of both the Employer and Contractor he is required to give his decisions within stated time limits. If either party does not accept the decision then they may proceed to arbitration. The Adjudicator's fee is shared equally between the parties.

- **Delegation**

The contract enables the Project Manager and Supervisor, after notifying the Contractor, to delegate their actions. The Guidance Notes make the point that the Project Manager will not normally delegate actions to the Supervisor, or the other way round, but in smaller contracts it is accepted that it may be convenient and practical to do so.

OVERVIEW OF CONTRACT MAIN AND SECONDARY OPTIONS

- **MAIN OPTIONS**

The ECC has **six main options** one of which must be chosen for each contract. These are:-

- Option A - Priced contract with activity schedules
- Option B - Priced contract with bills of quantities
- Option C - Target contract with activity schedules
- Option D - Target contract with bills of quantities
- Option E - Cost reimbursable contract.
- Option F - Management contract.

- **Options A and B** are priced contracts in which the risks of being able to carry out the work at the agreed prices are largely borne by the Contractor.
- **Options C and D** are target contracts in which the Employer and Contractor share the financial risks in an agreed proportion.
- **Options E and F** are two types of cost reimbursable contract in which the financial risk is largely borne by the Employer.

For convenience the range of contracts available within the standard ECC documentation can be conveniently split as follows:-

- Priced contracts
- Target Cost contracts
- Cost-reimbursable contracts

- **PRICED CONTRACTS**

Priced contracts are normally used when the Employer is able to provide the Contractor with a definitive description of what is required. This does not necessarily mean a complete design, but a clear statement of what is required e.g. as a scope design, performance specification and a statement of the purpose of the project.

- **Option A (with activity schedules)**

An activity is a discrete part of the whole works as defined in the Works Information. Establishing the quantities of work involved to achieve the completion of each activity is the responsibility of the Contractor. The price for each activity is in effect a lump sum for that activity and must include for everything necessary to complete the activity. Contractors are not paid for changes in quantity of the permanent work, unless an instruction changes the Works Information. This transfers some risk to the Contractor. The sum of the tendered lump sums for each of the activities is the tendered Price for the whole of the Works.

Activity schedules are activities in the programme for which the Contractor gets paid when he has completed that activity. The activity schedule is therefore closely linked to the construction programme prepared by the Contractor. It is therefore sensible to arrange that the Contractor also prepares the detail and breakdown of the activity schedule.

It is likely that the total administrative and management input from commencement of construction to settlement of final account is slightly less under Option A compared with a conventional contract form, and slightly more under option B. With the apparent practical advantages of activity schedules over bills of quantities there is evidence that more experienced users are moving away from option B towards option A.

- **Option B (with bills of quantities)**

Bills of quantities are the usual payment mechanism for work procured under the traditional procurement method and generally the works are substantially designed before tenders are sought from Contractors. They do, however,

have some fundamental flaws, the most significant being that the cost is not always directly proportional to quantity of work due to the financial build up of the contract and problems often result whenever the scope of work changes.

Most standard methods of measurement assume the work is fully detailed and the tender bills of quantities require the design to be finalised at tender enquiry.

- **TARGET COST CONTRACTS**
- **Options C (with activity schedule) and Option D (bill of quantities)**

Target cost contracts are appropriate where the scope of works is sufficiently developed for the Contractor to be able to price the works. The tendered Price based on either the Activity Schedule or the Bill of Quantities is the Target Cost.

The Contractor is not paid according to the Activity Schedule or the Bill of quantities but is reimbursed his Actual Costs plus a Fee, for his overheads and profit, in the same way as in a cost reimbursable contract. However, any total cost over run or under run, when compared to the Target Cost, is shared between the Contractor and Employer in a pre-agreed way. This arrangement motivates the parties to the contract to decrease costs.

Greater Employer involvement in the day-to-day management is essential in this form of contract and unfamiliar administrative procedures, which include open book accounting, may lead to higher administrative costs. They are therefore less likely to be as suitable for low value contracts.

- **COST REIMBURSABLE CONTRACTS**
- **Cost Reimbursable contract: Option E.**

Under option E of the ECC, the Contractor is reimbursed his Actual Costs plus a Fee for his off site overheads and profit. This Fee is calculated by applying the fee percentage, given at tender by the Contractor, to Actual Cost.

It therefore gives little incentive for the Contractor to minimise costs during construction, but this particular strategy may be appropriate where time or quality are overriding priorities or where the scope is not known eg emergency work.

- **Management contracts** : **Option F**

Option F includes for both management contracts and construction management contracts. They are not the same and approach the procurement route in different ways. The Contractor is paid Actual Costs, which include the actual total costs of subcontractors plus a Fee. The Fee is calculated by applying a tendered fee percentage to the Contractor's Actual Costs.

In management contracts design, construction and installation are intended to be subcontracted by the main Contractor using the ECC subcontract agreement. The Contractor’s principal role is management of the works packages.

In construction management contracts all the works contracts are let between the Client and works contractors as main contracts, but are administered on behalf of the Client by a construction manager. To use the construction management approach, the Employer would let the construction management and the design contracts on the Professional Services Contract and the works packages on the ECC.

PAYMENT OPTIONS

The range of payment options within NEC offer differing financial risk considerations and incentives:-

NEC Option	Incentives	Financial Risks	Other Risks
Option A – priced contract with activity schedule	Payment on completion of activity encourages progress	With Contractor to complete the works within the tendered price	Contractor usually bears the risk of the completeness and accuracy of the activity schedule
Option B – priced contract with bill of quantities	Contractor motivated to keep within his tendered price	With Contractor to complete the works within the tendered price	Employer usually bears the risk of the completeness and accuracy of the bill of quantities
Option C – target cost with activity schedule	Shared financial incentive encourages co-operation to reduce cost	Shared on a pay/gain basis	Contractor bears the risk of the completeness and accuracy of the activity schedule
Option D – Target cost with bill of quantities	Shared financial incentive encourages co-operation to reduce cost	Shared on a pay/gain basis	Employer usually bears the risk of the completeness and accuracy of the bill of quantities
Option E – Cost reimbursable	No real incentive	Employer	Project outturn cost uncertain
Option F – Management contract	No real incentive	Employer	Project outturn cost uncertain

- **SECONDARY OPTIONS**

Whichever main option is chosen, many of the procedures and systems necessary to administer the contract will stay the same. To further refine the contract strategy, secondary options are chosen:-

- **Option G: Performance bond and Option H: Parent company guarantee**

These secondary options enable the Employer to re-claim monies should the Contractor fail to perform, or go into liquidation. The performance bond is more commonly used because payment is not dependant on the parent company. The form and amount of the bond or guarantee must be stated in the Contract.

- **Option J: Advanced Payment to the Contractor**

This would be appropriate when the Contractor will incur significant “up front” costs before the start of work which generates income. For instance, for the provision of extensive common facilities for the use of other contractors, the provision of specialist equipment etc.. The amount of the Payments is stated in the Contract together with any requirements for a bond or security.

- **Option K: Multiple currencies (used only with Options A and B)**

Used in priced contracts only. Cost reimbursable and management contracts have their own particular arrangements.

- **Option L: Sectional Completion**

Should be included in Contract when the Employer requires parts of the works (Sections) to be completed before the whole of the works. This includes what work is to be completed in each section.

- **Option M: Limitation of the Contractor's liability for his design to reasonable skill and care**

Without this clause, the standard of liability in most construction contracts is generally taken to be “fitness for purpose”. This option reduces the liability to “reasonable skill and care” and is the more usual standard for any design consultancy.

- **Option N: Price adjustment for inflation (used only with Options A, B, C and D)**

This option enables the Employer to carry the risk of inflation. Without the clause the Contractor carries that risk.

- **Option P: Retention (used only with Options A, B, C, D and E)**

The retention free amount and the retention percentage must be stated

- **Option Q: Bonus for early Completion**

Where the Employer receives benefit from early completion, this clause enables some of this benefit to be given to the Contractor, thus motivating early completion.

- **Option R: Delay damages and Option S: Low performance damages**

What are usually referred to as liquidated damages in other construction contracts are called delay damages in the ECC. Low performance damages can only be applied where performance specifications are used and enable the contract to be completed, albeit with reduced performance.

- **Option T: Changes in the law**

This clause removes from the Contractor the financial consequences which might arise from a change in the law.

- **Option U: The Construction (Design and Management) Regulations 1994 (to be used for contracts in the UK)**

These Regulations apply to the majority, but not all, of construction work in the UK. This clause should be included when the Regulations apply. This ensures that a legitimate instruction given by the Planning Supervisor has contractual effect.

- **Option V: Trust Fund**

The Trust fund option was written in response to the Latham recommendation that they be used as a means of ensuring payment down the contractual chain should one party fail financially. However there appears little enthusiasm for its use.

- **Option X: Partnering Agreement**

This option enables a multi-party partnering agreement to be implemented.

- **Option Y(UK)2: The Housing Grants, Construction and Regeneration Act 1996**

Amendment dated April 1998. This option applies in the UK only where the Act applies and sets down the requirements relating to payment and the parties statutory right to adjudication "at any time".

- **Option Y(UK)3: Contracts (Rights of Third Parties) Act 1999**

This inclusion of this option enables the rights of any third parties to be written out.

- **Option Z: Additional conditions of contract**

This allows additional conditions to be added to further tailor the contract strategy. This may include adding or deleting compensation events. The flexibility inherent in the NEC system is designed so that amendments to the contract are kept to a minimum.

Should it be necessary to amend standard clauses it is recommended that all the changes are shown under Option Z. This ensures that all the changes are highlighted.

THE WORKS INFORMATION AND SITE INFORMATION

The Works Information is the key set of documentation included in the contract in which the Employer sets out the complete scope and requirements for the construction of the works and including :-

- The **Site Information**
- general arrangement and location drawings, working and detail drawings and specifications very much in the traditional manner.
- particular requirements in relation to the delivery and storage of materials.
- particular requirement with regard to health and safety including the inclusion of a health and safety plan for the project.
- a statement of those parts of the works to be designed by the contractor and the extent and details of any design brief, procedural requirements etc..
- the requirements with regard to completion of the whole or parts of the works.
- details of the other contractors, the areas of the site they will occupy and the times.
- details of subcontracting arrangements.
- the requirements for additional information to be provided by the contractor in support of the programme for the works
- details of the testing requirements and arrangements.
- a statement with regard to title of materials etc. when they are removed from site.

The **Site Information** is information which describes the Site and its surroundings and is included in part one of the Contract Data. Normally only factual information is given. It might include the following :-

- Subsoil investigations, records and test results.
- Reports obtained by the Employer.
- References to publicly available information about the Site.
- Information about plant and services.
- Information about piped and other services.
- Information about buildings, structures etc adjacent to or on the Site

EMPLOYER'S RISK AND COMPENSATION EVENTS

Compensation events are events, which, if they occur and do not arise from the Contractor's fault, entitle the Contractor to be compensated for any effect on both the Prices and the Completion Date. The assessment of a Compensation Event may entitle the Contractor to additional payment and also to additional time. In some cases they may result in reduced payment. The Contractor is paid on the basis of his Actual Costs or forecast Actual Cost for the compensation event.

Compensation events are listed in the core clauses, the main and secondary options and the contract. The Contract also permits the Employer to insert additional compensation events or delete the stated compensation events. Compensation events are the stated Employer's risks, all other risks are borne by the Contractor, and this is a normal contractual position.

COMPENSATION EVENTS

The Contract lists eighteen compensation events which are intended to apply to all the main options:-

(1) Changing the Works Information – Changes to the works may comprise deletion or addition of work or alteration to work and are effected by a Project Manager's instruction to change the Works Information. Only the Project Manager has the power to change the Works Information.

(2) Possession of the Site - The Employer does not give possession of a part of the Site by the later of its possession date and the date required by the Accepted Programme.

(3) Provision by the Employer – Failure by the employer to provide something which he is contractually required to provide by the date given for providing it in the Accepted Programme is a compensation event.

(4) Stopping Work - The Project Manager gives an instruction to stop or not to start any work.

(5) Work of the Employer or Others – The Employer or Others do not work within the times shown on the Accepted Programme or within the conditions stated in the Works Information.

(6) Reply to a communication - The Project Manager or the Supervisor do not reply to a communication from the Contractor within the period required by the contract.

(7) Object of value or historic interest - The Project Manager gives an instruction to deal with an object of value, historic or other interest.

(8) Change of decision – The Project Manager or Supervisor changes a decision previously communicated to the Contractor.

(9) Withholding an acceptance - The Project Manager withholds an acceptance for a reason not stated in the contract.

(10) Searching - An instruction by the Supervisor for the Contractor to search for a defect is a compensation event unless the search is needed because the Contractor gave insufficient notice of doing work which obstructed a required test or inspection.

(11) Delayed tests and inspections - Any test or inspection done by the Supervisor which causes unnecessary delay is a compensation event.

(12) Physical conditions - The Contractor encounters physical conditions which :-

- are within the Site
- are not weather conditions
- which an experienced Contractor would have judged to have such a small chance of occurring that it would have been unreasonable for him to have allowed for them.

The criteria for judging the physical conditions is that the Contractor is considered to have taken into account :-

- The Site Information
- publicly available information referred to in the Site Information.
- information obtainable from a visual inspection of the Site.

- other information which an experienced Contractor could reasonably be expected to have or to obtain.

The Employer is responsible for inconsistencies in the Site Information and the Contractor is assumed to have taken into account the physical conditions least favourable to the party which put forward the document (contra preferentum rule).

(13) Adverse weather - Rather than rely on subjective generalisations about 'exceptionally inclement weather' normally included in standard forms of contract, the Engineering and Construction Contract includes a more objective and measurable approach.

Weather data, compiled by an independent authority and agreed by both Parties beforehand, is made available establishing the levels of selected relevant weather conditions for the Site for each calendar month which have had a period of return of more than ten years. Relevant weather might include daily rainfall, monthly cumulative rainfall, cold weather and snow.

A weather measurement, the value of which by comparison with weather data identified in the contract, is shown to occur on average less frequently than once in ten years is an Employer's risk. Weather which the weather data show likely to occur within a ten-year period is a Contractor's risk, in relation to both cost and time.

Additional measurements can be added in the Contract Data for measurements relevant to the particular Site or to particular operations to be carried out.

(14) Employer's risk event occurs - The Employer's risks are stated in the contract and include claims due to faults of the Employer and loss or damage due to the Employer's use of the works. These are the usual risks borne by the Employer and include matters such as 'force majeure'.

(15) Employer's use of the works - The Employer may use part of the works before Completion and he takes over that part. If take over occurs before the Completion Date, it is a compensation event.

(16) Materials etc. for tests - If the Employer does not provide materials for tests etc. as required by the contract and as stated in the Works Information.

(17) Assumptions about compensation events - In asking the Contractor for a quotation, the Project Manager may state assumptions and the assessment is based on these assumptions. If the Project Manager later changes the stated assumptions it becomes a further compensation event.

(18) Employer's breach of contract - This an 'umbrella' clause to include breaches of contract by the Employer within the compensation event procedure, providing it is notified before the Defects Date.

There are additional compensation events possible by the use of a bill of quantities:-

- **Re-rating due to change to quantities** – The contract permits tendered rates in bills of quantities to be changed if the re-measured quantities differ from those billed. A compensation event occurs when:-
  - the difference causes the Actual Cost per unit quantity to change, and
  - the measured value of the item involved is significant to the extent that it is more than 0.1% of the tender sum.
- **Change in quantities –** a difference between the measured quantity of work for an item and the billed quantity which delays Completion is a compensation event.

- **Errors in bill of quantities** - The Project Manager is required to correct mistakes in the bill of quantities which are: -
    - departures from the method of measurement, or
    - due to ambiguities or inconsistencies.

PARTICULAR ISSUES

- **Preparation of NEC tender inquiry documents**

The use of ECC requires more rigorous preparation of tender inquiry documents since no aspect of change to the stated scope of works is the responsibility of the Contractor. The Employer is required to provide the necessary information setting out the project requirements in the Works Information included in the contract. The Works Information is, therefore, the ruling document clarifying the Contractor's responsibilities and ensures that he is in a position to tender with more confidence and provide a more realistic price to the Employer.

- **Contractor's design**

In order to optimise the design and eliminate unnecessary cost, flexibility in the design arrangements are often necessary. Increasingly Employers are using Contractor designs of the permanent work on the basis that the Contractor will use his expertise and consider "buildability" in the design, with the result that the design is both safer and cheaper to build. ECC can accommodate this requirement to any extent of Contractor design.

- **Programme and time**

The philosophy in relation to a formalised construction programme between the traditional forms of contract and ECC is quite different. Most traditional forms require the production of a construction programme and it's updating if it becomes unrepresentative of actual progress. Traditionally the contract programme often becomes a vehicle for the consideration of delay and the justification for extending the time for completion.

ECC, however, envisages the programme being used by all parties to consider progress, delays, delays to completion and to enable the regulation of future actions to achieve an acceptable outcome. It can be particularly helpful in looking at alternative scenarios for carrying out additional work or dealing with delays and assist in providing the optimum solution against the project objectives.

- **Early warning procedure**

This is seen by many as the "jewel in the crown" of ECC. The contract places an obligation on the parties to each notify the other of any matter which could increase the total of the Prices, delay Completion or impair the performance of the works in use. The notifying party can also call a meeting to discuss the matter and the other party is obliged to attend.

The importance of this requirement is that the parties are motivated to identify problems as early as possible and have a proactive approach to jointly find a solution, rather than putting off decisions or ignoring their resolution. The procedure covers any matter and has no consideration as to whose fault it was, or where the liability lies. The desired outcome is to provide agreed solutions to problems before they have any adverse effect on progress.

- **Valuation of change and compensation events**

There is a fundamental difference in the valuation of change. Under traditional forms of contract the change is usually instructed by the Engineer or Architect, and the price is subsequently determined, based on the tender pricing structure in the Contract. The pricing of change is often carried out some considerable time after the work is carried out, creating uncertainty in the eventual outturn cost to the Employer and delay costs are usually dealt with as a separate issue.

Under NEC, whenever possible, the Contractor is required to submit a quotation for the changes to both time and cost based on Actual Cost or forecast Actual Cost as defined in the contract. The Project Manager's acceptance of that quotation, or his own assessment, implements the change. The intention is that, whenever possible, the cost and time implications are established before the implementation of the change. The ECC approach has the advantage that the Project Manager knows what costs the Employer is committed to, usually before the changed work is started.

- **Disputes Resolution**

The ICE Conditions of Contract offer Conciliation and Arbitration as dispute resolution procedures together with Adjudication in accordance with the Housing Grants Construction and Regeneration Act 1996.

NEC offers a choice of tribunal which, in effect, means arbitration or litigation. Adjudication is also included and, in the United Kingdom, this is a revised procedure in accordance with the Housing Grants Construction and Regeneration Act 1996. For contracts outside the UK or outside the coverage of the Act the standard adjudication provisions included in the contract can be used.

NEC: ENGINEERING AND CONSTRUCTION SHORT CONTRACT

Introduction

The following notes are an introduction to the Engineering and Construction Contract and explain some of the particular features and some of the differences with the Engineering and Construction Contract (black book).

1. Objectives

The EC Short Contract has been designed for use with contracts for engineering and construction work which do not require sophisticated management techniques. The EC Short Contract is not considered to be a minor works form as it imposes no financial ceiling on the value of projects on which it can be used. It has been developed as an alternative to the Engineering and Construction Contract for contracts which:-

- do not require sophisticated management techniques
- comprise straightforward, uncomplicated work
- impose only low risks on both the employer and the contractor.

and particularly its focus on good management of the relationship between the two parties to the contract and, hence, of the work included in the contract.

It can be used in a wide variety of commercial situations, for a wide variety of work and in any location. It is intended that users of the Short Contract will range from larger organisations which carry out numerous simpler contracts to the domestic householder who needs a user- friendly contract to engage a contractor for a single project.

It is a clear and simple document using language and a structure which are straightforward and easily understood. The Short Contract shares the same characteristics as the existing NEC family with the key features which are shared between the Engineering and Construction Contract and the Short Contract of flexibility, clarity and stimulus for good management. Indeed many of the provisions are exactly the same. The Short Contract simply omits provisions which can be dispensed with in low risk or less complex projects (e.g. acceptance of subcontractors) and some procedures have been redrafted where the approach could be simplified (e.g. early warning).

Existing users of the NEC family of contracts will immediately recognise that the Short Contract is structured in the same style as the Engineering and Construction Contract. There are provisions for early warnings, programmes and compensation events, though they have been shortened to suit the simpler nature of the contracts on which it will be used.

A notable difference from Engineering and Construction Contract is that the role of Project Manager is not included, the contractual interfaces being directly between the Employer and Contractor. There are also spaces for inserting insurance and dispute provisions.

The Short Contract does not have the facility for main and secondary options but the Employer can insert additional conditions in the Contract Data and the use of a Price List which allows the flexibility of using lump sums or rates.

There is no facility for early-warning meetings. However, this is adequately covered by the requirement for the parties to make and consider proposals for how the effect of a notified matter can be avoided or reduced.

The essential defects clauses from Engineering and Construction Contract are retained, though the facility to accept a defect is excluded.

The form can be used as a subcontract to a Short Contract main contract or as an alternative to the Engineering and Construction Subcontract.

2. Complete package

The Short Contract is published as a complete package and includes Conditions of Contract and pre-printed forms which are:-

- Title page
- Contract Data
- Contractor's offer
- Employer's acceptance
- Price List
- Works Information
- Site Information.

When all the forms have been completed for a particular contract the package will comprise the complete contract document, together with the drawings and anything referred to in the Works Information.

4. Time

The Contract Data allows the *Employer* to state his requirements for a programme and the essentials of *starting date*, Completion and submission of programme are covered.

5. Payment methods

No optional clauses are provided but flexibility in choice of payment mechanisms is maintained by the use of the Price List which is explained in the box printed above it together with the box in the *Contractor's* Offer. This will allow a range of payment methods to be used including:-

- lump sum (including activity schedules)
- bill of quantities
- schedule of rates (no quantities available at tender)
- payment for time and materials expended (cost reimbursable)

6. Payment

The *Contractor* is required to apply for payment. This is different to the Engineering and Construction Contract, where the *Project Manager* assesses and certifies payment and takes into account any application made by the *Contractor*.

7. Compensation events

The list of compensation events is a shortened form of the Engineering and Construction Contract, but mention should be made of the following:-

- Loss of Plant and Materials or damage to the *works* is included, though this is notably absent from the Engineering and Construction Contract.
- The weather provisions have been condensed into periods each of at least one full working day, which are in total more than one seventh of the contract period.
- An event which delays completion by more than 2 weeks and which the contractor could not reasonably have prevented or controlled or which would have had such a small chance of occurring, and is not one of the other events, is a compensation event.

8. Contract Data

The Contract Data is found at the front of the document. Engineering and Construction Contract users will recognise the layout of the forms which are clear and simple in their content and structure covering the names of the Parties, the *contractor's* offer and the *employer's* acceptance, dates, the provision for retention, and naming of the *Adjudicator*.

9. Works Information

The Works Information is also familiar to Engineering and Construction Contract users in specifying or describing the *works* and any constraints on how the *Contractor* provides the works.

CONCLUSIONS

A construction contract is basically no different to any other commercial arrangement which requires the delivery of a specific outcome to a specified quality, at an acceptable cost and in an acceptable time. As well as the need to control quality there is also the need to monitor the progress of the project realistically and control outturn cost, particularly where there are financial constraints or limitations. Certainty of outcome is important if the Employer's capital investment is to perform as intended in terms of his business and that value for money is achieved.

The ECC standard form of contract is able to respond to these requirements by virtue of the flexible contract strategy which enables the optimum procurement strategy to be used, based on the Employer's objectives. Each individual contract can be tailored from a set of standard clauses, rather than the changing of standard clauses on a 'bespoke' basis. The early warning and compensation event procedures encourage good proactive management and the increased and improved ability to control time, cost and quality should, therefore, become a realistic expectation with benefits to all parties to the contract.

* Copies of the NEC Contracts are available from Thomas Telford Publishing

Water Management on Inland Waterways

By

Roy Sutton BA, MSc, CEng, MICE

(with contributions from Tony Harrison, John Pomfret, Phil Sharpe, British Waterways and the Environment Agency)

INTRODUCTION

1. Operation of inland waterways requires management of abstractions, flood prevention and impoundment of natural flow. This chapter describes some of the factors that must be considered when managing water for canal and river navigations in non-tidal conditions. It also identifies potential sources of information and data on water resources. A few examples are given of techniques that can be applied to such data to derive useful information.

RESOURCES AVAILABLE

2. Flow in river navigations that have locks must be sufficient to provide lockage water (in addition to other demands such as losses and third-party abstractions) if back-pumping is to be avoided. The Environment Agency (EA) may impose additional minimum flow requirements for adjacent weirs, fish-passes or mills. EA will require an 'Environmental Appraisal Report / Environmental Statement' before giving 'Land Drainage Consent' for works to be carried out on a 'Main River' (see Cl.23) [(1)]. This must cover issues such as water requirements, water quality and turbidity as well as impacts on flora and fauna. An abstraction licence is normally required (under Section 2 of the Water Act 2003) to undertake works to impound a river. An 'environmental appraisal' will normally be required by The Environment Agency before this is granted.

3. The local authority's planning department will require a full 'Environmental Impact Assessment' if the lock is a new structure and the project exceeds one hectare or will have a significant environmental impact [(2)] before they will give planning permission.

4. The Water Resources Act 1991 requires bodies (other than 'navigation authorities', who are exempted until Section 2 of the Water Act 2003 becomes fully enforceable after 2005) to obtain an 'Impoundment Licence' from EA if they plan to raise water levels. In that case any 'Water Level Management Plan' (WLMP) for the reaches concerned will be taken into consideration. WLMP areas are Sites of Special Scientific Interest (SSSI) or have a conservation interest where control of water levels is important to the maintenance or rehabilitation of that interest. A 'Procedural Guide' [(3)] describes how WLMPs balance and integrate the water level requirements for a range of activities in particular areas, including agriculture, flood defence and conservation. WLPMs are described on the DEFRA website [(4)].

5. Abstraction from a river or stream into an artificial channel requires an abstraction licence from EA, even if the water is to be subsequently returned to that river or stream by leakage or discharge. The Environment Agency has powers to seek any additional information that is reasonable to support a licence application. If abstraction is likely to create an environmental impact then an environmental appraisal will be required. Abstraction licences for navigation are granted (or not) on the same basis as for any commercial abstraction. EA often places restrictions on the amount that can be abstracted or on dates during which abstractions can be made (for example abstractions may be permitted in winter but not in summer). Alternatively, abstractions may be permitted only at times when flow in the watercourse exceeds a defined 'hands-off' (or compensation) level. These restrictions encourage farmers to use reservoirs to store water that is abstracted in winter for use in the summer. The same philosophy applies to waterway supplies. In considering applications for abstraction licences EA will apply the 'Catchment Abstraction Management Strategy' (CAMS) for the catchment concerned (see Cl.12).

6. Drought Orders allow water companies to vary their arrangements for abstracting or discharging water or to prohibit or limit particular uses of water [(5)]. Orders are issued (not less than seven days after publication of adverts in local papers) by the Department for Environment, Food and Rural Affairs (DEFRA), who must be satisfied that, because of an exceptional shortage of rain, there is either a serious deficiency of water supplies in an area or a threat to flora or fauna which are dependent on the source waters. Each EA Region has a drought plan for managing and co-ordinating drought activities including arrangements for membership of Regional and Area drought teams, monitoring and reporting and the triggers for implementing particular actions, the regional communications plan and outline action plans for other key aspects of drought activity. Each plan is reviewed to ensure that it takes appropriate account of the water companies' current drought plans. Once this has been done it is made available for inspection at relevant regional and area offices

7. Many reservoirs have been built to supply water to canals. British Waterways (BW), with 2000km of waterway, is responsible for 89 reservoirs [(6)]. 'Actual capacities' of some are: Naseby 1090,000m^3, Welford 321,000m^3, Daventry 1016,000m^3, Boddington 887,000m^3 [(7)]. 'Usable capacities' are generally at least 90% of actual capacities. Under the Reservoirs Act 1975 any water body of over 25,000m^3 (roughly a football pitch 14ft deep) above normal ground level must be under the control of a supervising engineer appointed from a 'Panel' of experienced dam engineers registered by DEFRA [(8)]. At present local authorities administer the Reservoirs Act 1975 but under the Water Act, 2003 responsibility will pass to EA. The reservoir must be inspected, at least every ten years, by an 'Inspecting Engineer' appointed from a more experienced Panel. Main concerns of a 'Panel Engineer' will be structural stability of the dam, sufficient spillway capacity to carry the design flood and sufficient freeboard to prevent overtopping by waves (that could endanger dam stability by inundating embankment fill). The design flood varies according to the consequence of failure of the dam concerned. Reservoirs under 25,000m^3 are not subject to mandatory control; but owners would be foolish not to employ experienced engineers in their design and management.

8. Groundwater is becoming an increasingly important water resource for inland waterways. In some cases pumps that formerly drained mine-workings have been switched off, allowing water levels to rise to the extent that waterways are encouraged to pump to prevent immersion damage to infrastructure (an example being BW's abstractions at Bradley which now supplement supplies as far away as the Oxford canal). In other cases groundwater is a last resort when all other resources are fully abstracted (an example being the trial abstractions for the western extension of the Basingstoke Canal). Groundwater from a new borehole supplies the Ashby Canal at Moira. Groundwater abstractions must be licensed by EA and are (or, by 2008, will be) covered by the CAMS. Dependent on the nature of the geology they may or may not be integrated into the same 'Water Management Units' as surface water and may thus be considered separately. Groundwater can be expensive. The Basingstoke Canal borehole was costed [(9)] at £150,000 for boring (400m) and pumps with a further £100,000 for treatment works (1994 prices). Running costs can also be high, with dosing often needed to precipitate iron and high power requirements for pumping.

9. Where there is sufficient water to replenish leakage and evapotranspiration but insufficient water for lockage requirements and where abstraction from other sources is impossible or expensive then back-pumping offers a solution. It is environmentally attractive, despite its demand for power, since it makes no demands on other resources. There is at least one legal dispute (in late 2004) whether an abstraction licence is required for back-pumping from an EA main river even when the entire abstraction is

returned to its source. Design of back-pumping installations is discussed in Cl.54 (below).

10. Drainage inputs have long supplied waterways and many artificial cuts were constructed principally as drainage channels, including almost all Fenland waterways. More recently runoff from Dunsfold Aerodrome Runway is being used to supplement the Wey & Arun summit pound. One of the key benefits of the Bedford to Milton Keynes waterway is its ability to receive and store floodwater from urban developments (in addition to its ability to transport it) so that it can be released into natural watercourses more slowly than would otherwise be the case; so attenuating downstream flooding and reducing the costs of additional control structures in natural watercourses. Surface water (stormwater) drainage inputs suffer from a very wide range of flow; insufficient during drought and extremely high during storms. High inflows have to be managed by provision of outlet spillways and weirs to prevent flooding of the waterway. Outlet discharges into natural watercourses must themselves be regulated to minimise the effects of downstream flooding. Handling flood inflows is very expensive. The Court of Appeal ruled in 2001 that reasonable compensation must be paid to cover the extra costs incurred by BW in handling additional discharges from a nine-inch pipe constructed by Severn Trent Water to discharge surface water from a new development into the Stourbridge Canal [(10)].

11. Wolverhampton Sewage Treatment Works (STW) discharges to the Staffordshire and Worcestershire Canal and the Birmingham and Liverpool Junction Canal. STW effluent must have undergone at least secondary treatment to protect the ecological health and aquatic life of the receiving water. Discharges are normally monitored for heavy metals, biological oxygen demand (BOD), pH, temperature, ammonia, nitrates, suspended solids, chloride and many organics. EA normally effectively controls BOD, pH, ammonia, suspended solids, organics and heavy metal impurities under the terms of the discharge consent. However, EA is less zealous in controlling excessive nitrate and phosphate levels or the temperature of discharges which can lead to excessive weed growth, destruction of natural plant life, siltation and ultimately eutrophication with algal blooms making the water poisonous [(11)]. Expensive tertiary treatment or phosphate stripping may well be justified by their environmental benefits. EA should be encouraged, where appropriate, to tighten the consent conditions on discharges.

CATCHMENT ABSTRACTION MANAGEMENT STRATEGIES (CAMS)

12. Abstraction from rivers, canals, reservoirs or underground strata is managed by the Environment Agency. The present system of licence control, introduced under the Water Resources Act 1963, allows waterways which were originally granted rights of surface water abstraction through their parliamentary bills to continue to abstract without the need for a licence. Licences issued before 2001 under the present system are generally not time-limited.

13. The present system is being ended by the introduction of the requirements of the ‘Water Act 2003’. The Act implements government decisions, taken following consultation, which are described in ‘Taking Water Responsibly’ [(12)]. The main change is that nearly all abstractions (above a very low, effectively domestic, level) must now be licensed. This includes all waterway abstraction and extinguishes existing abstraction rights. The current exemption of navigation authorities under the Water Resources Act 1991 will end after December 2005 as the Water Act 2003 is fully applied. But Section 5 of the Water Act 2003 allows navigation authorities to continue to transfer water entirely within their own system or to transfer water from their own reservoirs into their own

system without an abstraction licence. Another major change is that all licences are now to be time limited. Existing licences will all be replaced by 2016. Licences or parts of licences not used within a period of four years may now be revoked without compensation.

14. CAMS is the vehicle for reviewing time-limited licences, determining whether they should be renewed and, if so, on what terms. There is a presumption of renewal if the licence holder can demonstrate continued need, efficiency and environmental sustainability. The philosophy of CAMS is defined in 'Managing Water Abstraction' [13]. CAMS includes provision for commercial 'licence trading'. So if all available resource at the point of proposed abstraction is already licensed then applicants for new abstraction licences may only be successful if they are able to persuade (by payment) an already licensed abstractor to relinquish part of their licence. This is a major potential threat to navigation rights and IWA objected to these principles when they were first proposed.

15. Each CAMS document applies to a specific catchment or group of catchments and defines what resources are considered to be available (bearing in mind the requirements of the environment and the impacts of abstraction and discharge) in a number of 'water management units' (effectively reaches) above 'river assessment points' (generally gauging stations) within each catchment. Licences are issued depending upon resource availability and the sustainability appraisal undertaken as part of the CAMS process.

16. CAMS documents are published by EA following meetings with a 'Stakeholder Group' comprised of abstractors (water companies, businesses and farmers), development agencies and environmental interests (English Nature, conservation trusts and leisure bodies, including IWA). Public consultation occurs before and during the Stakeholder Group meetings. Large amounts of very useful data is made available in that period and those with an interest should try to secure the CAMS 'Technical Information' CD. The CAMS development process takes roughly two years and is fully described in 'Managing Water Abstraction' [13]. In the author's experience of attending CAMS Stakeholder Group meetings consensus recommendations may not be accepted if contrary to the policies of EA or DEFRA (who consider domestic water supply of over-riding importance). CAMS documents are being published for every catchment over a five year period until 2008. They will then be reviewed every six years.

17. The "Council Directive establishing a Framework for Community Action in the field of Water Policy" ('Water Framework Directive' or 'WFD') was published in the Official Journal of the European Union in late 2000. The WFD establishes a common approach to protecting and setting environmental objectives for all ground waters and surface waters (defined as rivers, canals, lakes, reservoirs, transitional and coastal waters up to one mile from the shore). 'Good surface water status' including good ecological status and good chemical status is its objective. Artificially constructed bodies of water (known as 'Heavily Modified Water Bodies', HMWB) will be required to achieve a status of 'good ecological potential' and good chemical status [14]. The difference between good ecological potential and good ecological status is that allowance is made in the former for physical characteristics such as bank protection, weirs and channel straightening which have been engineered to allow navigation and other human activities. However, ecological mitigation must be applied for this standard to be met.

18. The WFD requires that statutory strategic management plans be produced for each River Basin District (RBD) by 2009. These plans, known as River Basin Management Plans (RBMP's), will set out how the objectives for all the water bodies within each river basin are to be achieved. The process for delivering the Water Framework

Directive is still being developed. There will undoubtedly be links between the CAMS Process and the Water Framework Directive Process in the future but until the latter is established the detail is uncertain.

CATCHMENT FLOOD MANAGEMENT STRATEGIES AND PLANS

19. Catchment Flood Management Plans (CFMPs) are a planning tool through which EA aims to work in partnership with other key decision-makers within a river catchment to identify and agree long term sustainable policies for flood risk management.[15] Development of a CFMP is an iterative process, supporting an integrated approach to land use planning and management and WFD River Basin Management Plans CFMPs will involve a process of flood risk assessment to identify the size and location of various influences that can make a difference to the probability and consequences of flooding in the catchment. In gaining this understanding EA determine the effect of potential changes in the catchment on flood risk, be they local or widespread. Potential changes may, for example, include new development, changes in land management, flood protection measures and climate change. With a full understanding of the flood risks over the next fifty to a hundred years, resources can be targeted at areas of greatest need. CFMPs will not determine specific flood risk reduction measures. Further investigation of the flood risk issues (e.g. through Strategy Plans or Projects) will facilitate delivery of flood risk reduction measures that maximise return on investment.

DATA SOURCES

20. Flow quantity must be known before abstractions can be made and before flood or other control structures can be designed. For this purpose a nationwide network of measurement weirs and flumes has been established. Nowadays most (but not all) of these ‘gauging stations’ come under the control of EA. They generally fall into three types: (i) standard weirs calibrated (rated) by calculating the relationship between upstream water level and flow (ii) specially built weirs with a triangular channel section (known as ‘flat vee’ weirs) that are designed to more accurately assess low flows and (iii) ultrasonic stations which are often established at fixed constrictions such as bridges.

21. Most gauging stations measure at fifteen-minute intervals. But most interest is in the extreme events: greatest floods and most extreme droughts. These are summarised for nearly all gauging stations in the UK in the ‘Hydrometric Register and Statistics’[16] which gives the extreme and mean flows. An additional source of summary River Flow Data is the National River Flow Archive [17].

22. The Hydrometric Departments of Environment Agency regions can provide the records for more specific periods or for gauging stations not in the ‘Hydrometric Register and Statistics’. However, the Agency would need to be convinced of the justification. One such would be the need to know all the flood flows over the length of the record in order to undertake a ‘Gumbel’ flood return analysis (see Cl.32).

23. EA employs contractors to undertake cross-sectional mapping of many ‘main rivers’ (longitudinal sections are a derivative of these). The purpose of these surveys is to obtain an accurate physical representation for input to computer models used to analyse floods. Again, EA will supply this information if it is convinced of the justification. ‘Main rivers’ are rivers designated as such on ‘main river maps’ issued by DEFRA. EA

has power to control activities affecting main river channels and flood defences through the Environment Act 1995 and the Land Drainage Act 1991 (as amended in 1994).

24. EA maintains lists of discharge consents and abstraction licences. It is obliged to make these available to enquirers, along with quantity and quality information.

25. EA monitors water quality in main rivers and is obliged to make the records available on request and to publish water quality assessments.

26. EA publishes (on its website[18]) maps that define the extents of flood plains. Developments in flood plains may need land drainage consent if they affect the river channel but otherwise EA can only advise. PPG25 encourages the planning authority to consult EA about any development that affects flood risk before planning permission is granted and EA will expect to see a flood risk assessment in accordance with Appendix F of PPG 25 [18]. EA may object to reductions in flood storage or to works affecting flood levels or to developments being at risk of inundation. Although planning authorities are not obliged to refuse permission an EA objection to a major development on flooding grounds will usually trigger a public inquiry.

LOW FLOW STATISTICS

27. Frequent closure of navigation due to restriction in water supply would disrupt many waterside businesses with consequent social impacts in terms of employment. The effect of drought on the amount of water available for lockages should be analysed to enable the frequency and extent of navigation restrictions to be assessed. To enable this to be done low flows must be estimated with reasonable accuracy. Complete records from a gauging station on the watercourse would be the ideal data, but failing this the low-flow data from a reasonably close downstream gauging station can be factored in direct proportion to the relative catchment areas. If complete gauging station records are available, and if the financial resources to undertake the study are available, then a 'Water Balance' analysis (see Cl.51) for daily or (at most) weekly intervals would be the best option.

28. In the absence of complete gauging station records low flows can be estimated from the *UK Hydrometric Register and Statistics* [16] data for the nearest downstream gauging station factored in proportion to catchment area. Three statistics of particular interest are normally given for each year of record. (i) The '95 Percentile' flow (also known as 'Q95') is the flow that was equalled or exceeded for 95% of the term of the record. It is a measure of the amount and duration of low flow. (ii) The 'Minimum Daily Flow' is the minimum recorded mean daily flow in the term of the record. (iii) The '50 Percentile Flow' is the flow that was equalled or exceeded for 50% of the term of the record. Gauging stations will generally not record low flows accurately unless they have been specifically designed to do so. So the Q95 and Minimum Daily Flow statistics have to be treated with caution. EA can estimate flows in ungauged catchments with a computerised model called '*Low Flows 2000'*, used for some CAMS assessments.

29. There is no basis for assuming that the flow is below Q95 for 18 continuous days per year (since several discrete periods could be involved). But making the assumption that flow is the mean of Q95 and Minimum Daily Flow for 18 days gives a conservative basis for assessment of the water available for lockage for that particular year. If it appears that the water supply is severely restricted then the duration of restriction beyond the period of 18 days may be crudely estimated by graphing the three statistics

of interest for each year with linear percentage as one axis (Minimum Daily Flow being Q100). A Q90 may be derived and the flow for the 18 days bounding the Q95 flow period may be taken to be the mean of Q90 and Q95. This approach is conservative but will give a 'feel' for the situation. A conservative approach is reasonable given that the low flow statistics have to be treated with caution. It should be borne in mind that generally at least five years of Q100, Q95 and Q50 are available and making the assumptions above allows the restrictions for each year to be assessed. By considering all the restrictions over a five-or-more year period a good degree of certainty is achieved.

30. 'Base Flow Index' (BFI) is a measure of the proportion of total river flow that derives from stored sources. Clay catchments normally have BFI around 0.15 to 0.35 whereas a chalk stream may have BFI 0.90. A high BFI makes a river less susceptible to lengthy periods of drought.

HIGH FLOW STATISTICS

31. Flood flows must be accurately predicted to enable sufficient capacity to be provided in hydraulic structures. Before calculating flows it is important to determine an acceptable 'return period'. The 'return period' of a flow is the reciprocal of its frequency of occurrence. So a structure with a return period of 100 years should be overtopped, on average, only once in 100 years (but could still be overtopped two years in succession). The acceptable return period varies with level of risk. For agricultural land a return period of as little as 1 year may be acceptable. For domestic property 100 years is the norm. For a large dam spillway upstream of an urban centre 10,000 years or more would be considered.

32. The *UK Hydrometric Register and Statistics* [16] data contains the peak flows for the period of the record (normally over twenty years) and the peak flows of each of the five years of annual records. These allow six points to be used in a graph to enable a crude estimate to be made of the flood flow for a given return period. However, it is far more satisfactory to use the entire data record of the gauging station to obtain details of each flood event. 'Gumbel' analysis, at the simplest level, can be understood by considering the most significant flood flow in a given period to have a return period of the length of record, the next most significant flood flow a return period of half the length of record. In practice that understanding, though correct in principle, is statistically inaccurate and the actual return periods are derived using Gringorten's formula [20] ….

$$\mathbf{Tr = (n+0.12)/(m-0.44)}$$

where 'n' is the number of events and
'm' is the current event ranking ie '1', '2', etc.

33. Appendix B illustrates how return periods for flood records are calculated using the Gringorten formula. It also shows how flood flows for each event are plotted on 'Gumbel' graph paper to give a straight line graph which can then be extrapolated to provide estimates of flood flows for return periods exceeding the period of record.

34. When the full gauging station flow records are available then flood events during a particular period in each year may be isolated. This is done in Appendix B, which shows a lower likely flood flow (for the same return period in years) if only the summer months (April to October) are considered. Because the required discharge capacity in these months is lower the weirs may be raised (by fitting boards to the crest) during the

summer; thus improving the navigable characteristics of the waterway during summer when there is most demand to do so.

35. If the point of interest is not at a gauging station then the flood flow from a subsidiary catchment cannot safely be calculated by factoring flows in proportion to the relative catchment areas. That is because floods can arise from downpours in a relatively small area. A safer assessment can be made using hydrograph analysis and flood routing [(21)]; but description is beyond the scope of this paper.

ESTIMATING FLOWS

36. The flow in a small stream can be crudely estimated using 'Pooh Sticks'. Markers are placed a known length (say 10m) apart on a typical, relatively straight, section of the stream. Then the time taken for small floating twigs to pass between the markers is accurately measured and the average speed of those twigs that do not snag is calculated. The cross-sectional area of the stream at several points within the marked length is calculated by measuring depths at fixed distances across the width and an average cross-section area is derived. The approximate flow is 0.85 x Surface Speed x Cross Section [(22)]. This method is best applied to low flows during summer. A series of measurements done over a period is required for reliable data.

37. Flow over the crest of weirs is controlled by the formula given in Cl.57 (below). So flow over a weir can be estimated by recording (i) the 'Head' between the crest of the weir and the upstream water level (or, failing this, the depth of flow over the crest), (ii) the length of the crest of the weir and (iii) the shape of the crest to determine an appropriate discharge coefficient.

38. Catchment rainfall runoff into rural waterways can be estimated directly if there is no alternative (such as a nearby representative gauging station). It depends on the catchment area (which can be estimated from ordnance survey mapping), the catchment slope, catchment shape and orientation, rainfall and soil index. A thorough description is given in Wilson [(23)] which also gives maps showing Standard Average Annual Rainfall, 2-day M5 Rainfall, ratio 60-minute M5 to 2-day M5 and soils classification for runoff potential. Artificial influences such as drainage systems discharging (or abstracting) should also be considered.

WATER LOSSES

39. Leakage is very variable and difficult to assess for traditional clay-lined or unlined canals. However, British Waterways carried out an analysis of leakage in these types of waterways in 1994 [(24)]. Eighteen cruiseways and remainder waterways were monitored and the leakage of fourteen of them was found to range between 2.0 and 3.5 Ml/km/week. The average rate of loss for the fourteen sites was 2.6 Ml/km/week ($371m^3$/km/day) (ie 31mm/day drop in water level on a typical 12m wide canal).

40. Seepage is the rate of loss of water by steady flow past the grains of the lining material (distinct from leakage, which includes loss through burrows, roots and areas of poor lining material). Seepage through a modern, thoroughly engineered clay puddle is low. It depends on the permeability (k) of the clay and this could vary by a factor of 10 around a median value. BW has developed a specification [(25)] for a high standard clay puddle that states that the coefficient of permeability of the remoulded material should

not exceed 10^{-7}cm/sec. So if, for example, a canal is 1.5m deep and has clay lining 0.4m thick and k is 10^{-7}cm/sec (ie 10^{-9}m/sec) then the rate of loss is

10^{-9} x (1.5 + (0.4 / 2)) / 0.4 m/sec

which is

(60 x 60 x 24) x 1000 x 10^{-9} x (1.5 + (0.4 / 2)) / 0.4 = 0.367mm/day.

This very low rate for seepage could be realistically used for total leakage if BW's specification (for very plastic, flexible puddle) is applied and provided the puddle does not subsequently crack by completely drying out and it is not penetrated by roots or (especially) by animals.

41. Seepage through modern linings such as bentonite matting or butyl rubber is similar to, or lower than, that for the fully engineered clay puddle. Manufacturers' data for permeability assumes the lining is laid fully in accordance with their recommendations. In practice jointing faults create most leakage. Modern 'thin' linings should be covered by a layer of material thick enough to ensure that impact by boats or penetration by poles does not damage the lining. Generally this means a 100mm layer of weak concrete, or at least 300mm of gravel, which helps protect the joints and prevent shear failure. Future leakage would probably be greater without such protection.

42. Evaporation is generally calculated using Penman's equation. This extremely complex formula relates (i) radiation flux (cal/cm^2/day – derived from date and latitude), (ii) average cloud cover (%), (iii) long-term average temperature (deg C), (iv) height above ground (generally 0m for waterways unless on an exposed embankment) and (v) average wind speed (m/s) to derive a rate of evaporation (mm/day). The formula is applied to irrigation projects using computers. The nomogram in Wilson [22] is the simplest means to estimate canal evaporation losses. For Manchester waterways the nomogram suggests evaporation is 5.2mm/day in summer. Annual evaporation of around 500mm/year varies little across the country.

WATER DEMAND

43. To calculate the water demand for lockage the number of boats using the waterway must be estimated. British Waterways' Business Planning and Research Unit, based at Watford, has developed a 'demand and network model' that estimates the number of boat movements that might be generated by opening new waterways, moorings or marinas [26]. Since its original development the model has been updated and 'calibrated' by feeding in measured outcomes. It is unquestionably the best means to estimate demand in those situations where it is applicable and where there are no restrictions to boat access.

44. Restrictions to boat access are generally imposed for environmental reasons or for safety or arise from physical obstruction. Boat movements are restricted on several canals (most notably Basingstoke and Montgomery) to protect flora and fauna. The Cam is closed to powered craft above Jesus Lock for safety reasons. The double five flight at Foxton locks is a significant physical restriction on summer weekend traffic. Restrictions can also arise because of lack of moorings, failure to dredge or low structures. All restrictions need to be considered (along with the possibility of their future removal) in estimating usage.

45. Leisure usage of canals varies throughout the year and so, consequently, does lock usage. Statistics for the Leeds and Liverpool Canal [27] show 34.2% of all lock usage occurring during the eight busiest weeks of the year (in July and August). British

Waterways' national weekly distribution of lock usage (revised in 2001) shows that 39% of total annual lockage occurs in July and August.

46. Myth abounds over the water demands of locks, staircase flights and side-ponds. The basic measure of usage is a single 'cycle' (of one boat travelling down and one boat travelling up a lock or flight). The water demand of one 'cycle' of a 'basic' single narrow lock 72ft long, 7ft 6in wide and with 9ft rise is roughly 23x2.3x2.75 = 145m^3. Where a large side-pond is filled from and emptied directly into the chamber of a single (non-staircase) lock using a sluice then each cycle requires just over 50% of the demand of the equivalent single lock without side-pond. Each cycle of a 'staircase' flight of two directly-connected locks without side-ponds (either 'effective pounds' between the chambers or sluices off the chambers) requires double the demand of a single lock of the same dimensions of one of the chambers in the flight. Demand is tripled for a staircase flight of three as illustrated in Appendix A. More complex arrangements can be assessed using the methodology shown in Appendix A.

47. Boats 'taking turns' at a single lock satisfy the 'cycle' calculation of demand; each full-length boat effectively using ½ lockfull of water. However, if the waterway is very lightly used then boaters will set a lock rather than wait for a boat coming in the opposite direction to use it. If equal numbers of craft with impatient crews travel in each direction on a lightly used waterway there is a 50% chance that any given boat will set any given lock. So the average demand for a single full-length boat passing a single lock (in either direction) on a lightly used waterway is ¾ lockfull [(28)]. However, the opposite applies to staircases. Their maximum demand of n lockfulls (where n is the number of chambers) occurs every time direction is reversed and their demand is minimised to that of a single lock by boats following each other through in uni-directional convoys if possible.

48. Where locks are relatively closely spaced and boats travelling in the same direction congregate in one pound (perhaps where the pub is) there is inevitable wastage at single locks if numbers of boats set off in the same direction at the same time. Similarly there is wastage if traffic flow is 'tidal' (for example to a rally). Users may share locks to save water. The average number of boats sharing a lock is obviously physically dependent on boat size and lock chamber size; but it also depends on whether the level of traffic encourages boaters to share.

49. So simple water demand calculation by 'cycles', as described in Cl.46 (above), must be modified by considering the factors described subsequently. Ideally, a survey of boat traffic and water usage can be carried out at a similar location to that being considered. Statistics for broad locks on the Leeds & Liverpool Canal [(29)] show a very strong correlation to a relationship

    'Lockfulls used per day' = 0.4733 x 'Boat movements per day' + 1.266.

    This is based on between 10 and 40 boat movements per day (total of both directions) and refers to broad canals in the North West in the early 1980s. The mix of craft size may well be different now.

50. In addition to lockage demands an allowance needs to be made for lock gate leakage and every effort should be made to minimise this by good maintenance. Industrial and agricultural abstractions may have to be considered: commercial sales of water earned £3M for BW in 1998/99.

51. To calculate the entire water demand a 'Canal Water Balance' computer model can be created that considers all inflows, outflows and contained flows for a length of navigation [(30)]. A variety of scenarios can then be rapidly considered on a 'what if' basis

that considers various drought return periods and associated water availability and demands.

PIPE FLOW AND BACKPUMPING

52. Flow through a pipe is approximately proportional to the square root of the 'head' over the length of the pipe. This may be 'gravity head' (eg the difference in level between a reservoir and a canal) or it may be 'pumping head' (the height that a vertical column of water will reach under the pressure from the pump delivery tube). The head provides for (in approximate order of normal importance) (i) pipe friction losses ('friction head'), (ii) energy to give velocity ('velocity head'), (iii) inlet and outlet losses. Dividing 'Friction head' by the length of the pipe gives the 'Hydraulic Gradient', which is used for most pipe sizing.

53. A crude assessment of the likely flow through a fully submerged pipe for a given friction head may be obtained using 'Manning's Formula' that becomes (for a circular pipe)….

$$V = 0.397 \times D^{2/3} \times S^{1/2} / n$$

Where 'V' is velocity (in m/s),
'D' is pipe diameter (in m),
'S' is hydraulic gradient and
'n' is 'Roughness Coefficient' (constant for a given type of pipe) [31].

The calculation above does not consider inlet and outlet head losses, so is not suitable for application to short culverts (where friction is often the least significant loss). Metric and imperial roughness coefficients differ.

More sophisticated solutions, such as the Colebrook-White formula and Lamont smooth pipe formulae, can relate required diameter and flow only using flow charts or nomograms. In practice most pipe manufacturers supply flow charts that directly relate hydraulic gradient to flow for each of their pipes and these should be used to design any substantial length of pipe.

54. It is generally most cost-effective to use a fairly large diameter pipe for back-pumping installations. The 800m long pipe-run at St John's on the Basingstoke Canal has a 'static head' (difference between upstream and downstream levels) of 10.5m and must deliver 60litres/sec. For 150mm diameter pipe the velocity would be 3.40m/s, giving friction head loss 49.5m and velocity head loss 5.9m. These are added to the static head to give total required pumping head of 66m. For 250mm diameter pipe the velocity would be 1.22m/s, giving friction head loss 3.9m and velocity head loss 0.8m with a total required pumping head of 15m. Power requirements are roughly proportional to the total required head, so 250mm diameter pipe was chosen [32].

55. Provided that the locks are reasonably closely spaced then it is normally more efficient to back-pump up a complete flight than around each individual lock (because a major energy input, impellor loss at the pump, is minimised and because one pumping station is cheaper than many). If back-pumps are installed between each of a series of locks with short pounds then problems can arise with lock surge and the required day-time operation means off-peak electricity cannot be used.

56. Capital costs of back-pumping can be high. The recent installation built by contractors on the Woodham flight of the Basingstoke Canal (six locks) cost £295,000[33](1999 prices) and the volunteer-built installation at St John's (five locks) is likely to cost

around £125,000. By comparison running costs of back-pumps are relatively low. For instance in 1996 all the power to run Watford, Whilton & Buckby, Napton and Marston Doles pumps for a total of 28,383 pump-hours, in which 3,800,000m^3 were pumped, cost £30,500 [(7)]. Back-pumping installations are cheaper to build and operate than new side-ponds even when whole-life costs are considered.

HYDRAULIC STRUCTURES AND CHANNEL DESIGN

57. Modular flow over the crest of weirs may be represented by the formula……

$$\textbf{Flow (in } m^3/s) = C \times L \times H^{3/2}$$

Where: 'C' is a 'Discharge Coefficient' that varies between around 1.77 for a sharp crest, 1.6 for a broad flat crest and 2.2 for a nappe (ideally rounded) crest. The discharge coefficient is affected by change of ratio of water depth behind the weir to H.

'H' is the level difference (in m) between the top of the crest and the upstream water level.

'L' is the effective breadth of the crest (in m). The effective breadth is the overall length minus an allowance for horizontal contraction and side friction.

By measuring these characteristics the flow over a weir can be estimated. Note that 'Head' is the height to 'level' upstream water and that by the time the water has reached the crest of a weir it is moving fast, with the energy of its speed coming from a 'velocity head' loss that results in a lowered water surface making the depth of flow over the crest of a broad crested weir typically 2/3 x 'Head' (but varying with structure type).

58. Waterway weirs generally control the levels of pounds to maintain sufficient freeboard to prevent overtopping of the banks with consequent risk of flooding. Freeboard on canals is generally around 300mm (at normal rates of discharge over the by-wash weir). Allowing for 100mm wave height gives 200mm normal maximum head on by-wash weirs. On river navigations freeboards generally exceed 300mm to provide sufficient capacity to accommodate flood flows. At the upstream end of pounds freeboard will be reduced by the hydraulic gradient of the flow along the river channel combined with increased head over the weir. At the downstream end of pounds freeboard will be reduced by increased head over the weir alone. If freeboard is limited then the maximum allowable head over the weir crest is likewise limited. To increase capacity in such a case either an additional discharge structure must be provided or the weir crest must be lengthened. If the overall width available for a weir is limited and heads are low (as in the case of canal by-washes) then labyrinth weirs (with long, zig-zagging crests) are an attractive means to increase capacity.

59. If the design flow exceeds the discharge capacity of the weir that can be installed in a limited space then 'undershot' (also called 'underflow') sluices might be considered. These might be 'radial' (also called 'tainter') or vertical 'riser' gate controlled. Discharge formulae for standard sluices are given in hydraulic textbooks [(34)]. Water pressure at the level of the orifice gives greater velocity head than for weirs, resulting in sluice flows normally being much greater than for a weir. So flow energy dissipaters are often required for sluices. Sluices must be controlled or they will either leave a pound totally drained when flows are low or will cause flooding downstream when flows are high. Mechanical control by connection to large floats is effective, but prone to jamming and hunting. Electrical control is reliable and causes less hunting (if

properly designed), but is prone to power failure, so batteries and backups are required. On rivers (but not canals) the consequences of a sluice failing are often so significant that at least three sluices are normally installed in parallel (with separate control systems) so that any one can be taken out of service for maintenance and so that risk of failure of more than one sluice at a given time is minimal. For these reasons river sluices required to pass a given design flow may be more expensive than a weir of equivalent capacity.

60. Siphons will discharge even more water per unit width than an undershot sluice. Further, the crest can be set at a level that will prevent the pound from draining. However, the water level must rise significantly above the crest to prime a siphon and once primed the siphon will run until the vacuum is broken when the upstream level falls below the inlet soffit. So they cause water level to vary significantly. On river navigations this is often not important relative to the head changes that would be required to discharge the same flood over a weir. But siphons should not generally be used for canals. Siphons are noted for making disturbing noises. In practice siphons are rarely installed because of the danger of them failing to prime when required. The high velocity discharge of a siphon may require dissipation if scour is to be avoided.

61. Where sluices or siphons are installed on river navigations to discharge flood flows it is common for a weir to be retained so that at normal flows a proportion of total discharge is through the sluices and siphons but the remaining proportion is discharged over the weir such that the pound level is maintained just above weir crest level. This reduces the 'hunting' of water level that would occur if sluices or siphons were used alone.

62. The need to dissipate the energy of fast flows has been mentioned in several preceding paragraphs. If the energy were not dissipated (by conversion from velocity into heat) then the velocity of the flow might cause scouring downstream of the discharge point, threatening to undermine other structures or the discharge structure itself. Dissipaters such as stilling basins (with 'hydraulic jumps'), dragon's teeth, ski-jumps and straight drops might be used for major hydraulic structures. For canals and small rivers the rough lining to a by-wash or a rip-rap lined pool could be suitable dissipaters. Even a straight discharge into standing water acts as a dissipater. A discussion is beyond the range of this paper. Dissipaters are described in several standard books [35] [36].

63. An adequate channel (by-wash) is required between the hydraulic control structure and the dissipater. Provided that the downstream end of an open channel discharges freely and that the channel slope is reasonably uniform then flow is controlled by Manning's original formula….

$$\mathbf{V = R^{2/3} x S^{1/2} / n}$$

where 'V' is velocity (in m/s),
'R' is hydraulic radius (in m),
'S' is gradient and
'n' is 'Roughness Coefficient' [31].

Hydraulic Radius, R, is the cross-sectional area of the channel divided by the wetted perimeter (excluding the water surface). Metric and imperial roughness coefficients differ.

In applying Manning's formula it is important to size the channel based on the section that has the least slope; average slope must not be used. If slope is not reasonably uniform there is a risk of change from critical to subcritical flow with consequent formation of a hydraulic jump.

Roughness Coefficient, n, is approximately constant for a given channel surface. Examples of metric Roughness Coefficients (also known as 'Manning's 'n'') are [37]:-

0.02 to 0.025	Earth, free from weed, straight alignment, stones up to 75cm
0.03 to 0.05	Ditto with poor alignment
0.05 to 0.15	Ditto with weeds and poor alignment
0.03 to 0.04	Gravel, 75mm to 150mm, free from weed, straight alignment.
0.04 to 0.08	Ditto with poor alignment
0.04 to 0.07	Ditto with 150mm stones
0.012 to 0.017	Concrete
0.025 to 0.035	Hand placed pitching
0.013 to 0.02	Dressed stone, jointed
0.01 to 0.014	Cast iron

64. To calculate the channel cross-section geometry for a given slope an iterative procedure must be used.

Example solution: Consider the case of a 0.5m wide rectangular brick channel with a minimum slope of 1:200 (0.005) which must carry 50l/s (0.05m^3/s) and for which the minimum wall height is to be calculated.
1) Manning's 'n' (from the table above) is taken to be 0.03.
2) Make a sensible initial guess for depth, say 100mm. That gives an area 0.05m^2 and a wetted perimeter 0.7m. So hydraulic radius is 0.071m. V = $0.071^{2/3}$x$0.005^{1/2}$/0.03 = 0.40m/s. So flow = 0.40x0.5x0.1 = 0.02m^3/s. That is low.
3) Increase depth to 200mm. That gives an area 0.10m^2 and a wetted perimeter 0.9m. So hydraulic radius is 0.111m. V = $0.111^{2/3}$x$0.005^{1/2}$/0.03 = 0.54m/s. Flow = 0.54x0.5x0.2 = 0.054m^3/s. This is effectively the solution.

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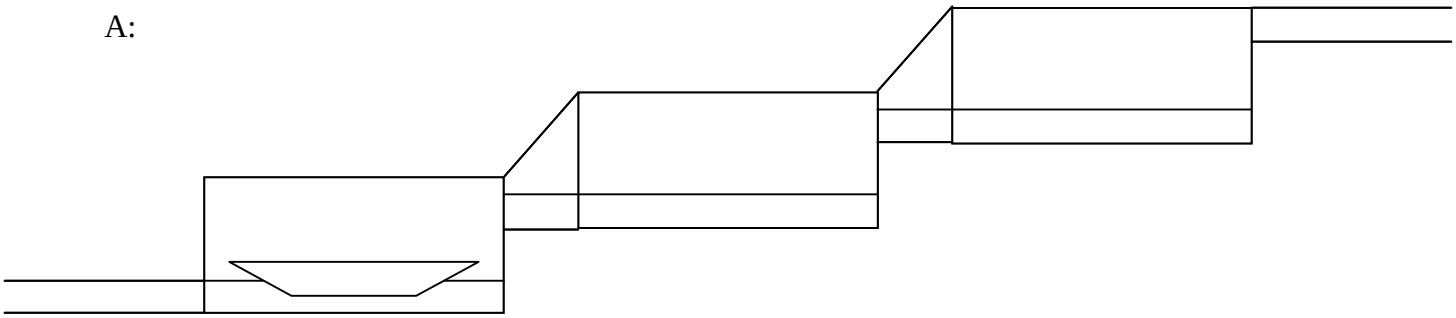
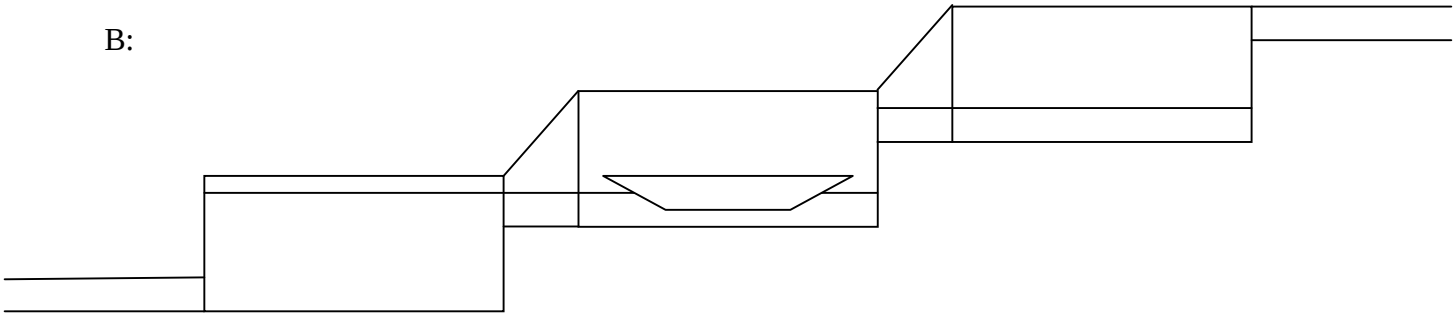
APPENDIX A: Water Demand of a Triple Staircase Flight

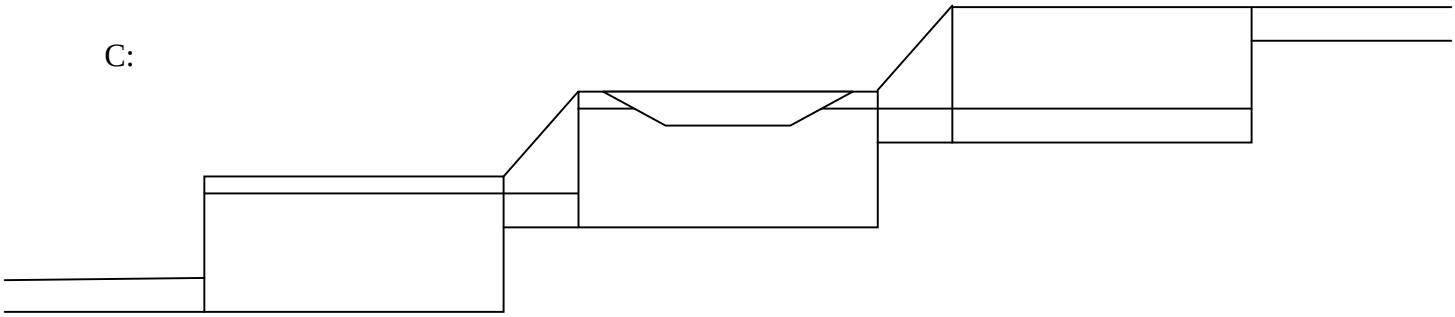
A:



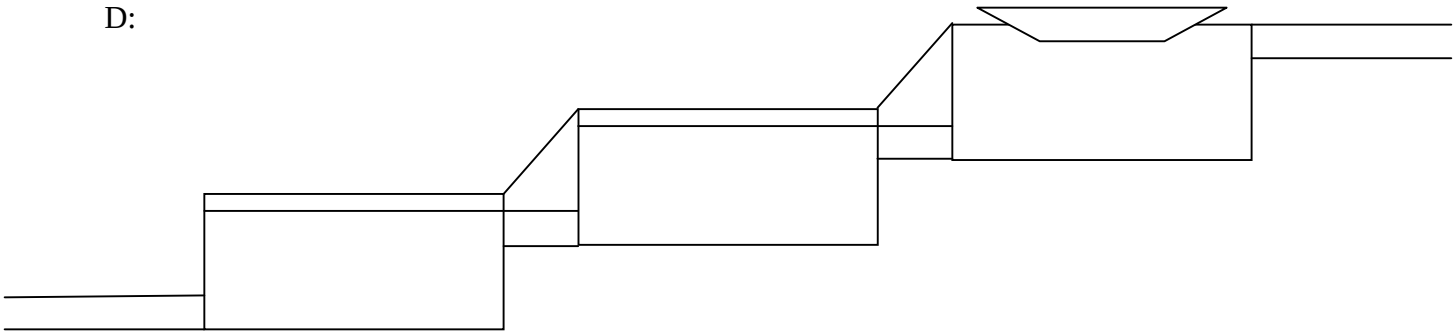
B:



C:



D:



Net water requirement is calculated from top pound abstractions as:-

B:	Bottom chamber filled	1 lock
C:	Middle chamber filled	1 lock
D:	Top chamber filled	1 lock

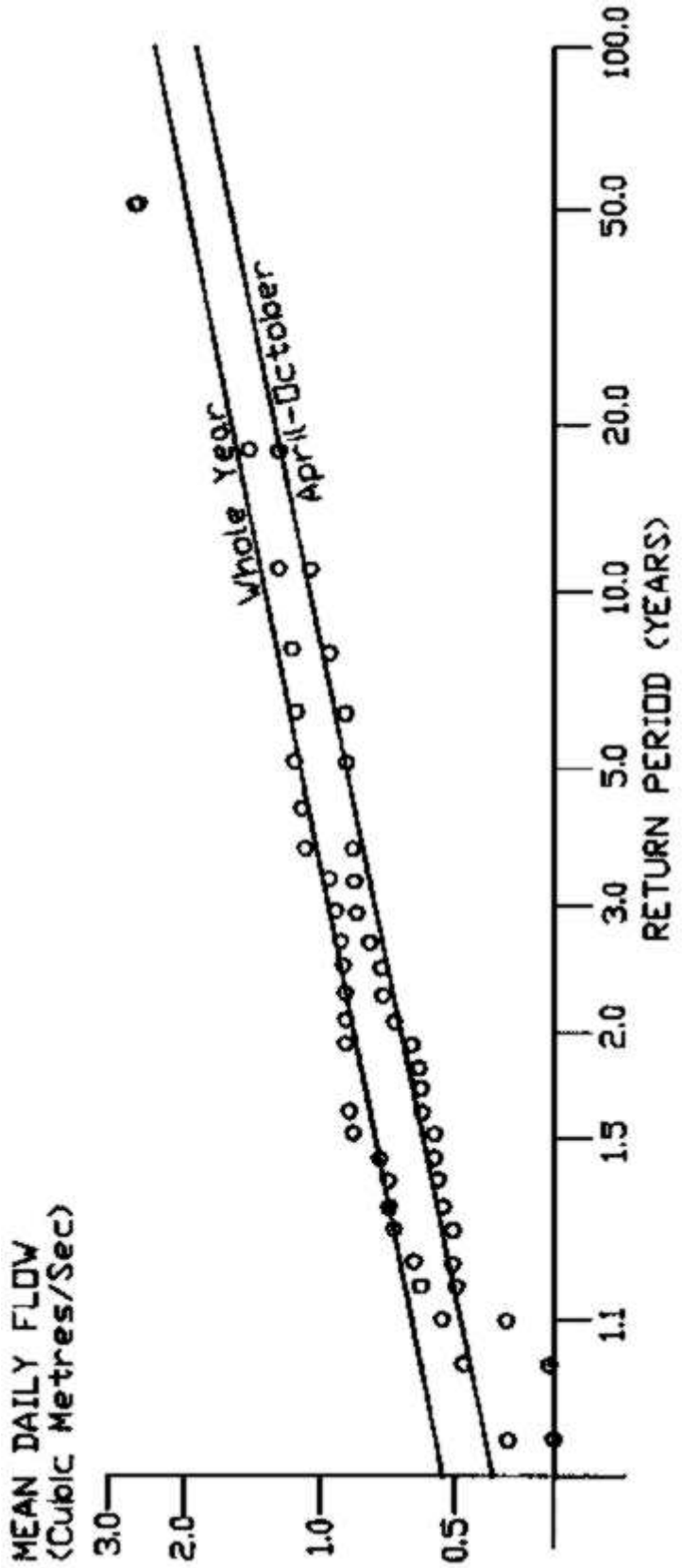
	Total:	3 locks (for full cycle of one down and one up)

There are six distinct lock operations (fillings/emptyings) per full cycle

APPENDIX B1: Honing Weir Flow

Year	Highest Mean Daily (m^3/sec)	Order of Highest	T_r Gringorten (Years)	Highest Instant (m^3/sec)	Ratio Instant /Daily
		Analysis for Whole Year			
1994	0.892	12	2.43	0.923	1.03
1993	1.265	3	10.98	1.265	1.00
1992	0.473	27	1.06	0.488	1.03
1991	0.376	28	1.02		
1990	0.695	21	1.37		
1989	0.695	22	1.30	0.796	1.15
1988	0.862	16	1.81	0.947	1.10
1987	0.965	9	3.29	1.293	1.34
1986	0.614	24	1.19	0.810	1.32
1985	0.855	17	1.70	1.200	1.40
1984	0.870	15	1.93	1.160	1.33
1983	0.880	13	2.24		
1982	1.091	8	3.72		
1981	2.600	1	50.4		
1980	1.140	5	6.17		
1979	0.903	11	2.66		
1978	0.831	19	1.52		
1977	1.097	7	4.29		
1976	0.531	26	1.10		
1975	0.725	20	1.44		
1974	0.675	23	1.25		
1973	0.597	25	1.15		
1972	1.482	2	18.03		
1971	1.140	6	5.06		
1970	1.156	4	7.90		
1969	0.915	10	2.94		
1968	0.870	14	2.07		
1967	0.846	18	1.60		
		Analysis for April-October			
1994	0.892	5	6.17	0.923	1.08
1993	1.265	2	18.03	1.265	1.00
1992	0.381	26	1.10	0.390	1.02
1991	0.303	28	1.00	--	
1990	0.309	27	1.06	--	
1989	0.679	14	2.07	--	
1988	0.617	15	1.93	0.726	1.18
1987	0.965	4	7.90	1.127	1.17
1986	0.590	18	1.60	0.810	1.37
1985	0.822	10	2.94	1.200	1.46
1984	0.840	8	3.72	1.160	1.38
1983	0.724	13	2.24		
1982	1.091	3	10.98		
1981	2.6--	1	50.4		
1980	0.790	11	2.66		
1979	0.550	19	1.52		
1978	0.550	20	1.44		
1977	0.498	24	1.19		
1976	0.531	22	1.30		
1975	0.725	12	2.43		
1974	0.610	16	1.81		
1973	0.597	17	1.70		
1972	0.502	23	1.25		
1971	0.487	25	1.15		
1970	0.828	9	3.29		
1969	0.875	6	5.06		
1968	0.549	21	1.37		
1967	0.846	7	4.29		

APPENDIX B2:


MEAN DAILY FLOW
(Cubic Metres/Sec)
3.0
2.0
1.0
0.5
Whole Year
April-October
1.1
1.5
2.0
3.0
5.0
10.0
20.0
50.0
100.0
RETURN PERIOD (YEARS)