

NSW Heritage

PIPE ORGAN CONSERVATION AND MAINTENANCE GUIDE

**in association with
ORGAN HISTORICAL TRUST OF AUSTRALIA**

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**A revision of the *Australian Pipe Organ Preservation Standards* of the
Organ Historical Trust of Australia**

All Saints' Anglican Church, Woollahra, Sydney
Illustration by Graeme Rushworth

INTRODUCTION

Pipe organs are a unique and very significant part of the heritage of Australia and the country is well known internationally for its extensive collection of these instruments. The *Pipe Organ Conservation and Maintenance Guide* is designed for owners, users and conservators of pipe organs.

The organ is a very specialised heritage item - primarily a musical instrument but also part-machine, part-decorative furniture and part of the form of a building. The detailed conservation of organs cannot be guided exclusively by the general conservation charter for heritage items in Australia, the ICOMOS *Burra Charter*, which addresses places (see Further Reading). The present guide is linked to the fundamental principles of the general heritage guidelines but adapts these principles to the unique circumstances of the organ. Unlike the earlier version, however, it seeks to achieve greater conformity with universal heritage principles by linking more closely the general heritage guidelines with the specific and long-practised principles of organ conservation.

These pipe organ guidelines address **conservation and maintenance** only. **Assessment of significance** is the first step in the process of managing an organ and must be undertaken in order to guide subsequent conservation and maintenance work. The *Burra Charter*, supported in NSW by the *NSW Heritage Manual* and *Caring for Heritage Objects* (see Further Reading), should be used to help assess significance and a conservation management plan should be produced to guide conservation. (Bear in mind that this assessment should address all aspects of an organ, from its musical quality to its historical, social and aesthetic contexts in the building and community in which it resides.) This process has barely commenced with pipe organs in Australia and much existing assessment is too narrow in scope. However, there is a good body of information in earlier technical documentation undertaken by the Organ Historical Trust of Australia (OHTA) and other published historical studies (see Further Reading).

This guide has been prepared by the NSW Heritage Office to update and supersede both OHTA's *Australian Pipe Organ Preservation Standards* and the New South Wales Heritage Council's *A Guide to the Conservation and Maintenance of Pipe Organs*, both originally published more than a decade ago. The *Australian Pipe Organ Preservation Standards*, from which this guide is directly adapted, were originally drafted by John Stiller in 1978 and were based on the German organ

conservation document *Weilheimer Orgelregulativ* (1970). Some amendments have been made to the text of the OHTA document to maintain conformity with the language and principles of the general heritage guidelines.

INDIVIDUAL STATE REQUIREMENTS

NSW

These guidelines should be consulted prior to commencing work on a significant organ or prior to applying for funding under the NSW Heritage Assistance and Heritage 2001 grants programs. Note that some organs in NSW may be protected by conservation orders under the *NSW Heritage Act, 1977*. Contact the NSW Heritage Office for advice. The guidelines refer in a number of places to the need for specialist advice. Lists of pipe organ consultants and builders/conservators can be obtained from the NSW Heritage Office.

OTHER STATES

Heritage Victoria lists significant instruments and can provide conservation funding (see Contacts). The ACT also has controls under its heritage legislation which can be used to protect pipe organs. Contact the relevant state or territory government heritage agency for further information. The relevant state National Trusts can also be approached for assistance if there is concern about an organ.

PIPE ORGAN CONSERVATION STANDARDS

1. CONSERVATION

Conservation is the process of looking after an organ so as to maintain its heritage significance. In principle, *conservation* embodies all processes directed to this end (that is, including those listed below such as *maintenance* and *restoration*). In a specific sense, it also means preservation or preventative conservation: the steps taken to maintain an organ in its existing state and to prevent its deterioration.

In practical terms, the *conservation* of an organ can be ensured through the maintenance of favourable climatic and room conditions. If the room is heated, attention must be given to room temperature; regular control of the relative air humidity is also recommended, to prevent the wooden parts from drying out. Quick heating, stirring up of dust, and large temperature fluctuations are to be avoided. Wood-damaging insects must be combated by insecticides. In short, the best conservation often means leaving the organ itself alone but ensuring that it has a favourable environment and is maintained so that the need for restoration work does not arise.

2. MAINTENANCE

Maintenance is the continuous protective care of an organ. This signifies the regulation, tuning and *repair* (see below) of **minor** defects in an organ.

2.1 Significant organs require especially careful maintenance.

2.1.1 Instruments which are significant because of their tonal qualities may be tuned twice per year, at the end of each of the cold and warm seasons. When this is done, the original pitch, temperament and voicing (if still in original form) should not be altered. Maintenance also includes playing through every note on every register (i.e. a stop or rank of pipes) at frequent time intervals for organs that are seldom used, in order to prevent the settling of dust and dirt in pipes and other parts vital to wind conduction. Maintenance of old organs also includes ensuring that the necessary degree of air humidity exists.

2.1.2 The organ is a working heritage item and components will thus wear out through use. It is permissible to renew such perishable materials such as leather, felt and key coverings. (See also 3.4 below.)

2.2 All work connected with the maintenance of an organ should be carried out by professionals. This work should remain in the hands of one person or firm and it should be governed by contract.

2.2.1 Only an organbuilder who can be trusted with, and has a demonstrated appreciation of historic values, should be commissioned with the maintenance of such instruments.

2.2.2 The repair of minor faults and defects discovered during tuning should be included in the tuning and maintenance contract.

2.2.3 Also to be included in the tuning and maintenance of an organ is the observation and reporting of the instrument's current condition, especially in regard to the appearance of wind leaks, cracks/splits, oxidation of metal components, wood-damaging insects, decay, water penetration, deterioration or wear.

2.3 The organist should be a person who can be trusted with the organ.

2.3.1 It is recommended that appointed organists should be persons who:

- have understanding and appreciation of the instrument entrusted to them;
- are capable of observing, assessing and reporting the current condition of the instrument.

2.3.2 Only in extraordinary circumstances should the resident organist be allowed to tune, and then only the reeds, after appropriate instruction from the usual tuner, and if they are accessible without disturbance to other pipes.

Admission to the inside of the organ should be restricted only to organ specialists, or to persons under their supervision.

The interior of an organ should never be used for storage of furniture, flower vases and other church materials.

If major damage is discovered, the owners of the organ, the maintenance contractor, and either the Organ Historical Trust of Australia or the National Trust in each state should be advised. In NSW, the NSW Heritage Office should also be consulted, so that the required repairs can be initiated.

3. REPAIR

This term refers to the *repair* of damage which influences the appearance or function of the instrument and is **undertaken in the course of *maintenance***. As defined here, this terminology is only valid if the old parts of the organ are not changed and should not involve *restoration* or *reconstruction* (see below).

Repair aims to preserve an endangered or deteriorated instrument in its present form.

- 3.1 As a rule, repairs are undertaken on instruments which have remained unaltered, but which nevertheless are damaged or worn. The term *repair* is also used when an instrument is not in completely original condition, and a return to the original condition, due to particular circumstances, cannot be considered, so that only a repair of what exists can be undertaken.
- 3.2 Thorough cleaning and dust removal throughout the whole organ, rounding-out crushed or dented pipes, regulation and re-bushing of the action, measures taken against wood-damaging insects, oxidation and deterioration are all included in the term *repair*. In combating insects, oxidation and deterioration, only preservatives which have proved themselves practically and have no residue should be used, and it is most important that an expert should be consulted.
- 3.3 No alterations should be made during the process of repairing. The original voicing must be carefully preserved.
- 3.4 For the treatment of parts affected by damage or wear, the following measures must be taken into consideration, according to the degree of damage:
 - 3.4.1 Treatment with proven impregnation preparatives, whereby the instrument must be dismantled. (This may also include the dismantling of the soundboard or wind chest with the opening of the note channels.)
 - 3.4.2 If the damage is so far advanced that the treatment with preservative preparations cannot guarantee the instrument's further

preservation or playability, the affected parts must be exchanged for new parts. Any such parts which affect the sound of the instrument **must** be remade as exact (but distinguishable) copies of the original parts. This is *reconstruction* (see below for further advice).

- 3.4.3 The addition of an electric blower should not occur when the instrument is a special furniture or museum piece (e.g. organs of D. H. Lemke). With such instruments **all** technical details concerned with wind supply must be remade (if this is necessary) as exact copies of the original. (See under *Reconstruction*.)
- 3.5 For any repair work, section 2.2 above is to be strictly adhered to. Therefore, only an organbuilder who possesses a personal and professional guarantee that the work will be carried out faultlessly in accordance with the assessment of significance may be entrusted with repair work on historic organs. Above all, the organbuilder must have experience in the type of work to be undertaken.
- 3.6 If not already done, a detailed documentation should be undertaken prior to major repair work, and a work program prepared from this documentation.

4. RESTORATION AND RECONSTRUCTION

Together with preservation (see *Conservation*), these are the main processes associated with work which is needed to return an organ to a former higher standard.

Restoration is the returning of an altered instrument to an earlier documented condition by removing additions or by reassembling existing components without the introduction of new material (excepting, in the case of an organ, the components which perish with the working of the instrument such as felt, leather, wire and ivory or their acceptable substitutes).

Reconstruction is the returning of an altered instrument to as near as possible to an earlier documented condition and is distinguished from *restoration* by the introduction of lost or missing materials (new or old) into the organ. New material should be clearly distinguishable from the original, by labeling or documentation if necessary. [See also 5.1 *Conjectural construction*.]

- 4.1 In contrast to preventative conservation or preservation, *restoration* and *reconstruction* strive not only to preserve the existing historic parts of the organ, but at the same time, to undo alterations which the instruments may have previously undergone. Note, however, that it is not necessary that a *restoration* or *reconstruction* **must** return an organ to its original form. That is, not all alterations need to be undone, but more importantly, it is preferable to return the organ to an artistically-worthy form and condition that is advantageous to the organ. It is usually inadvisable to take the organ back in time past a condition or form which itself has historic value. (For example, an organ built in the 1860s which was enlarged in the 1880s and was further altered, rebuilt or electrified in the 1950s might be restored only to its 1880s rather than 1860s form - the prior assessment of significance will guide the decisions on this.)
- 4.2 Occasionally, an historic organ only altered in the twentieth century need not be restored, but only *maintained* (with minor *repairs*), especially when the instrument sounds satisfactory, and if unfavourable conditions exist for a good *restoration* or *reconstruction* to take place (e.g. when the original specification is unknown).

4.3 Before *restoration* or *reconstruction*, a thorough detailed documentation of the organ should be undertaken before the instrument is dismantled. On the basis of this documentation, a work program will be scheduled, which can be adapted to any new factors which may become apparent when the organ is dismantled. The course of the work must be thoroughly recorded in a written report. There may be a need for review of the conservation management plan if significant new information is revealed during dismantling.

4.4 During *restoration* or *reconstruction*, influences and elements foreign to the style of the organ are to be **removed**.

4.4.1 When considering in the conservation management plan which alterations are to be removed, the following points should be taken into consideration:

Alterations which change the tonal structure of the organ:

- I. Alterations to the specification, especially of a significant reduction of the principal chorus, or the replacement of mutations or reeds by 8-foot stops (e.g. removal or alteration of upperwork and mixtures, or the replacement of a Twelfth 2-2/3 by a Dulciana 8, or vice versa).
- II. Alterations to the soundboards or wind chests. Due to the significant influence of the type of soundboard or wind chest on the tonal qualities of the organ, old organs must always have slider-chests or their original form of chest.
- III. Alterations to the action. Old organs should have (or have restored to them) their original type of action - usually mechanical or pneumatic. The existence of several different types of actions within a single organ is to be especially avoided unless originally present.
- IV. Alterations to the voicing and intonation:
 - Wherever possible, with the flue pipes, non-original foot restrictions are to be removed. The same applies to non-original nicking and tuning and voicing aids. Flue and lip positions must be returned to their original settings, and the height of cut-up must be restored to the original.
 - With reeds, non-original leathering and voicing aids are to be removed.

- Completely ruined pipes are to be replaced by new pipes having the same measurements and forms in all parts (including ornamentation, diapering etc., if present) and of identical metal composition or wood. The original pipes should be retained and stored.
- V. Alterations to the wind pressure. Wind pressures must be returned to the original values. Any alterations to the voicing which may have occurred when wind pressure was raised must be restored to the original. [See (IV) above.] The same applies to wind pressures which may have been reduced.
- VI. Alterations to the pitch. Pitch alterations also cause tonal alterations, and the temptation to retune an old organ to present-day standard or a non-original pitch is not acceptable. If the original pitch has been altered over the years, it should be restored to its original, if at all possible, and non-original tuning aids removed. If an old organ is not ideal for accompaniment purposes on account of its unusual pitch, the purchase of an additional accompanying organ, quite independent from the old organ, is recommended.
- VII. Alterations due to the addition of another manual which is not suited tonally or structurally to the original concept of the particular organ.

Alterations which interfere with the original style of the case are to be removed. Such alterations include:

- Painting-over of decorated display pipes - the original decoration should be restored, if possible.
- Disfiguring enlargements and additions such as light fittings, heaters, switches, electrical conduits, etc.

Stylistic alterations which fit in tonally and architecturally with the original may remain.

- 4.5 In a restoration of museum quality, repairs that remove patina, and other evidence of aging, should be avoided. In organs that remain in constant use it may, for example, be desirable to protect timber surfaces by repolishing, where the original polish has disintegrated. Great care must be taken to avoid finishes not envisaged by the original builder.

5. CONJECTURAL CONSTRUCTION, ENLARGEMENT AND REBUILDING

5.1 *Conjectural construction* is outside the scope of usual heritage practice, but may be necessary to bring an organ to complete working condition. It involves the new manufacture of lost or missing parts whose original condition is wholly or partly unknown. That is, no documented construction methods are available. Conjectural construction work on a significant organ should be fully documented and identified and be suited in quality and function to existing work.

5.2 A significant organ should not be altered through *enlargement* or *rebuilding* as its significance may be compromised. *Enlargement* means the fitting or addition of parts which were not present in the original, but without any changes to existing parts. *Rebuilding* means the free alteration of the existing form of the organ with no intention of serving any of the purposes of conservation. (Note that the removal of a non-original register and its replacement by another register which was present in the original is not part of a rebuild but is *reconstruction*. The replacement of single pipes which have become unusable is *repair*.)

6. ADDITIONAL POINTS

6.1 In respect of all types of conservation work (including repair, restoration and reconstruction) correct procedure must be observed by both organ adviser (consultant) and organbuilder. It is especially important to indicate which parts of the organ are to be renewed. Also during this work, all the required measurements and documentation can be undertaken and completed.

6.2 The following should **not** occur:

- Replacing old stop labels with new ones which have a different style of lettering. Old stop labels which have lettering which has become illegible should be restored to their original appearance or replaced by new ones which are in the same style as the originals.
- Replacing old stopknobs with new ones of a different style. It is possible to make exact copies of old stopknobs which may have become unusable due to wear and deterioration, and this is the course which should be followed.
- The replacement of original single, double or triple-rise bellows with an electric fan supplying a constant pressure or with spring

regulators. Bellows (and other components such as wind trunks) which affect the wind characteristics of a particular organ should be restored rather than replaced. Pre-electric blowing apparatus should also be retained, together with other associated objects such as telltales, etc. Even if it is not possible to restore or repair these objects, they should still be retained as part of the historic interest of the organ.

- Replacing mechanical key and stop action. Even the use of modern mechanical action (using modern materials) is questionable when applied to instruments of historic value.
- The installation of slider seals, telescopic joints, etc. in soundboards or wind chests. It has been found that these alterations affect the tone of the instrument. Also the introduction of such devices is out of character with the style and practice of the original builder, and in some instances they have been shown to have had a short life.
- The replacement of a hitch down or lever swell shutter control with a balanced swell pedal, and the replacement of an old pedal board with one conforming to modern standards should not occur. While these adaptations may make the instrument easier to play for some present day performers, they constitute a departure from the original instrument and the style in which that instrument was played.

6.3 Other principles should be noted, as follows:

- The treatment of pipework needs very special attention in the context of preservation. Alteration of those parts of a pipe that affect speech should be avoided, except where damage has occurred. Regulation should be minimised.
- Original cone tuning should be preserved or *restored* wherever possible. The fitting of tuning slides to metal pipes should only take place, if at all, where the smallest pipes of a rank have been extremely badly damaged by cone tuning and pipes should not be trimmed down. Even then, tuning slides should only be added to these smallest pipes and their addition should be most carefully considered since this method of tuning is not in keeping with the organbuilding practices of the original builder. In cases where an accredited conservator considers metal pipework to be of such delicate or inferior construction that damage is likely to result from ongoing cone tuning, consideration may be given to the fitting of tuning slides on

small pipes. The cutting of slots in any pipes should not be necessary. Naturally, all of these practices lead to tuning instability. The practice of cone tuning must be undertaken with the utmost care.

- The practice of newly varnishing or painting pipes during the course of any preservation work is open to question. Many vital inscriptions have been removed in the past by these practices; all inscriptions on wood and metal pipes should be preserved.
- The revoicing of undamaged pipework has no place whatever in any organ conservation work unless the existing voicing is non-original. [Refer to 4.4.1 IV.]
- Pipework must be handled with the utmost care during dust removal and cleaning and when it is transferred from one place to another. The delicate and sensitive mouth parts of metal pipes are easily damaged and the regulation of a particular rank of pipes can be easily upset by any but the most careful handling.

Organ pipes should not be cleaned by washing, except in unusual circumstances, and the use of extremely hot water, with or without detergent or cleaning solutions, should be avoided.

- 6.4** In the conservation of significant organs the use of traditional materials is preferred. However, organs are working heritage items and in some instances the introduction of modern materials may be unavoidable and may be done under professional guidance. For example, various synthetic resins may be substituted for ivory and selected grades of alternative timber can be used where the original type of timber in a suitable size is unavailable.

7. EXPERT ADVICE

- 7.1 An *organ consultant* should be engaged in any conservation project (other than *maintenance*) for any organ of heritage significance. The consultant can also investigate the significance of the organ beforehand, if necessary, and prepare a conservation management plan and can, of course, advise on a maintenance program. The NSW Heritage Office can provide a list of consultants in that state. The Organ Historical Trust of Australia can also be contacted for advice regarding consultants (see **Contacts**).
- 7.2 Many *organ builders* are also conservators. The Australian Guild of Master Organbuilders (and, in New South Wales, the NSW Heritage Office) can provide the names of builders who are familiar with implementation of these standards (see **Contacts**).

FURTHER READING

Australia ICOMOS 1992, *The Illustrated Burra Charter*, Australia ICOMOS, Sydney 1992.

[The *Burra Charter* is the Australian adaptation of the *International Charter for the Conservation and Restoration of Monuments and Sites* (ICOMOS, 1966) and is the widely-accepted heritage standard for places of significance.]

NSW Heritage Office 1996, *NSW Heritage Manual*, NSW Heritage Office, Sydney.

[The *Heritage Manual* is the official NSW procedural guidelines for heritage and includes general guidelines for assessment and management of all types of heritage items.]

Organ Historical Trust of Australia 1992, *Australian Pipe Organ Preservation Standards*, OHTA, Camberwell.

[See notes in Introduction above.]

Rushworth, G. 1988, *Historic Organs of New South Wales*, Hale and Iremonger, Sydney.

[Commissioned by the Heritage Council, this is the major reference on organ history in NSW.]

Townley, P. and Parris, R. 1994, *Caring for Heritage Objects*, Powerhouse Museum, Sydney, 1994.

[Commissioned jointly by the Heritage Council and the Powerhouse Museum, this is a first attempt at a universal heritage standard for movable heritage and includes a movable heritage charter and general management guidelines.]

There are some overseas guides to organ conservation which may be useful for comparative purposes. Apart from the German *Weilheimer Orgelregulativ* (1970) mentioned in the introduction, there is an Italian guide by Oscar Mischiati and Luigi Ferdinando Tagliavini: *Estratto da: L'organo Rivista di Cultura organaria e organistica direzione e redazione* (Bologna, 1996).

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