

Restoration Documentation - a New Zealand Perspective

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An illustrated lecture outlining the techniques and philosophy of documentation and assessment as evolved and practised by the South Island Organ Co Ltd of New Zealand of which I am one of three Directors, that is in the process of organ restoration.

When I began my organbuilding career in 1965, the concept of organ conservation in New Zealand was hardly thought of as we understand it today. I have only recently come to realise how far ahead of his time was Ralph Sewell, a name which probably won't be known probably in Australia but is well known in New Zealand. Ralph Sewell was a boatbuilder turned organbuilder who trained in Auckland with Bill Croft who was the director of George Croft & Son which was at that time the main established organbuilding firm in New Zealand, and he trained with Bill Croft during the '50s and '60s then worked on his own account through the '60s and '70s restoring organs which were too small or too old to be of interest to the Croft establishment. In other words, all these very old and small organs were just passed on to Ralph to deal with. To him we owe the survival of some of New Zealand's most valuable historic organs such as the Snetzler at Te Aroha, the Avery at Ponsonby, the Webster at Auckland Museum, that was the first organ made in New Zealand in the 1840s, the Bishop barrel organ at Paihia and the Bevington at Waimate North. A taped interview of Ralph Sewell by Ron Newton in 1992 makes it clear that his strongly conservationist approach at that time was not generally appreciated by his clients or the organ world at large, whose focus on modernisation, standardisation and improvement resulted in the value of his work being largely unrecognised.

Otherwise any restoration work done in New Zealand in the first 25-year period after the second world war was classed by builders as *Cleaning & Overhaul*, and was reserved by establishment organbuilders for slack periods, on organs where insufficient funds or lack of interest precluded the preferred possibilities of replacement or rebuilding.

The South Island Organ Co's restoration of the two-manual 1877 Bevington at All Saints' Anglican Church in Dunedin, which is in the far south of the South Island, in 1968-9 (in other words, that is about a year after the company was founded) was the company's first serious attempt at restoration, but it came about for similar reasons to those just outlined. Of course, some changes such

as the fitting of tuning slides, shortening the pallets, new plastic stopknobs, a balanced swell pedal and the removal of the hand-blowing mechanism were made that today would not be countenanced. However, the Company's youthful zeal, coupled with the fundamental quality of that organ and the skill required to deal with the excessive rust damage and wear and tear because it was an organ very close to the University, so it was used extensively by students, engendered a sense of achievement and respect for the idea of restoration that began a process of rethinking. This flowered again in the late '70s with the restoration in Christchurch of the three-manual 1878 Halmshaw & Sons organ, that is a Birmingham organ, a firm that is very little known in England today as far as I can make out, but who sent a number of organs to New Zealand, including one identical to this one, and this organ is in the Cathedral of the Blessed Sacrament in Christchurch, which would be New Zealand's premier architectural cathedral - a magnificent building and a magnificent organ.

The significance of this project was that the Company for the first time saw restoration as the best option and fought off concerted opposition from those who saw this organ as quaint but quite unsuitable for the Cathedral. Fortunately the cost of restoration was much more in tune with the Cathedral's budget, because at the same time the cathedral was undertaking a massive restoration of its stonework and its interior. The whole cathedral is built in a classical style and it is built in Oamaru stone. Any of you who know about Oamaru stone know it is a white limestone and a lot of it was exported to Australia. I am not sure if you would find it in Sydney, but certainly you see it around Melbourne quite a lot. Those of you who have been to Melbourne in recent years will have noticed the scaffolding around Scots' Church for years and years and that is because all that stonework was Oamaru stone. The cost of restoration, as I was saying, was much more in tune with the cathedral's budget than the options of a major rebuild or new instrument, a factor which finally (as so often) clinched the argument in favour of preserving this, New Zealand's most significant surviving 19th century organ.

Soon after the completion of this restoration in 1978, I made my first trip to Australia to attend the Melbourne Festival of Organ and Harpsichord and stumbled on the first OHTA Conference which was running concurrently. I have never forgotten the sense of excitement and relief I felt at finding a group of people who were dedicated to the cause of organ preservation and restoration, and my discovery that the truths of this cause, which the Company was struggling to work out from its own convictions and experience in isolation in New Zealand, were not only shared by an organised group in Australia, but had already been formalised in Germany in the *Weilheimer Regulativ*. The success of the cathedral Halmshaw organ restoration, coupled with this timely meeting and a growing sense of the Company's responsibility to influence the fate of much of the country's disappearing organ heritage through its expanding national tuning and maintenance connection, set the company firmly on the path of conservation.

In a very real sense, the quality of organ tuning and maintenance I believe has a powerful effect on the perceived value of instruments and their rate of survival. The Company's philosophy has always been to establish a tuning and

maintenance regime that allows sufficient time to attend to those factors that will, over time, stabilise the tuning, pipe-speech and action regulation, control wind leaks and pressure regulation and achieve the utmost reliability and musical quality, for the given organ's age, condition and environment. Only as a last resort is major work insisted on to keep an organ playable. Too often I have found that organs have been allowed by other builders to deteriorate, in the hope of generating premature major work or replacement, or by owners in the hope of saving on the maintenance budget. In today's environment, this approach is so damaging to the future of the organ that no short term gains in my opinion are worth the risk of poor maintenance.

Far from being a chore or easy money spinner, I have come to regard good tuning and maintenance of organs as one of the most valuable activities and resources of an organ business, particularly if the business is focused on organ restoration. Here, on the tuning rounds, one freely learns the long term effect of all decisions made so easily in the factory; the importance of effective maintenance access and adjustment, the effects of climatic, acoustic, and spatial environments, the suitability of materials and lubricants, and the chance to build up an invaluable database of comparative information from which one may discern the right path in restoring altered organs back to their makers' intentions. Most importantly, one learns to peel off the blinkers so often put in place by our tendency to focus on acoustic effect and contemporary aesthetic style. Only then may we truly appreciate the quality of an organ's design and workmanship, and rediscover its artistic purpose.

To this day the pipe organ industry in New Zealand is completely unregulated and unassisted, except that funding for some projects is aided by a few charitable trusts, and, in very recent years, the New Zealand Lotteries Commission has made some quite generous grants. The Organ Preservation Trust of New Zealand (OPTNZ) is a new light on the conservation horizon, but is still a fledgling body without the power or experience of OHTA.

There is no protection offered by the New Zealand Historic Places Trust, which is the equivalent of the Australian National Trust, who can classify buildings for preservation but not their moveable contents, nor is there any equivalent to the Heritage Council of NSW or the Historic Buildings Council of Victoria. The Antiquities Act in New Zealand offers similar protection in theory against the export of valuable historic organs as does the Australian Protection of Moveable Cultural Heritage Act, but as there is no classification process for organs in New Zealand, this is of doubtful value.

The point I am making in relationship to the documentation of the restoration process, is to show that in the unregulated environment of New Zealand, clients generally do not expect to pay for what they could regard as a non-essential part of the work. Consequently the Company has to pay for this in terms of time and equipment, and must therefore carefully weigh up the value of any documentation.

The Documentation Process

The factors to be considered in restoration documentation are firstly, the value of the organ (which is determined by its size, age, condition, quality and

rarity); secondly, the risk of loss or damage in transit or in the builder's factory, and this is influenced by distance, the security

of the premises, reliability and skill of the staff, climatic control and even political stability; thirdly, the complexity, action-type, and the builders' familiarity with the style of the organ; fourthly, the heritage value and special requirements of the owner or other controlling authorities; and finally, anything of special interest to the Company.

If the documentation process is to be taken seriously, the cost becomes quite significant, and after a recent restoration tender in which the Company for the first time described in detail the documentation it considered appropriate, and costed it at approximately 2% of the tender price, the client asked for this to be deleted as a cost saving measure. Generally speaking, the level of documentation has increased with time, and has been done most thoroughly for the company's offshore work where the risk of loss or damage is greater and the necessity of facsimile replacement in the event of such, more certain.

A very important, although usually brief, documentation takes place at the time of initial inspection of the organ. On this will depend the accuracy of the report and the costing on which the tender specification will be based, which in turn will influence who gets the contract and how much skilled effort will be expended on later documentation. In the South Island Organ Company's case, this takes the form of one or two, usually free, inspections of from two hours to a week's duration, depending on the size and complexity of the organ.

The essential elements of this inspection will include 20-30 photographs showing the main features of the case, console, interior winding, action and pipework.

If the organ is playable, a sound recording of 10-20 minutes' duration (and maybe a video recording will be made) of the main features of the stops and tonal design, together with brief written notes on the main points arising.

The elements are, firstly, a record of the specification, pitch and wind-pressures, to which are added details of any changes made that can be deduced from internal evidence, historic records, personal recollection of the organist or other knowledgeable persons; secondly, a written or recorded (such as a micro cassette) description of the organ's construction and layout, action type, general condition, special features and problems; thirdly, a report on any damage due to heat, water, structural weakness or decay of the building or the organ itself, earthquake, vermin attack (for example, moths, borer, white ants, cockroaches, rats, mice, birds, opossums, you name it); fourthly, a description of worn or damaged parts and what action will be necessary to restore them; fifthly, a test of the adequacy of the blower, wind storage, pressure regulation and wind supply characteristics; and finally, an assessment of any proposed alterations or additions.

The Company then uses this material as the basis of its free report and quotation for the work desired by the owner or recommended by the builder. (Other builders or consultants quite justifiably make a charge for their inspection reports and quotations, and should not be penalised for so doing, as

when done thoroughly, these reports are time consuming, costly, and as valuable to the client as to the restorer).

The most important restoration documentation is that done at the time of dismantling as there is much vital information that, at best, can only be guessed at if it is not recorded at this time. The procedures normally carried out by the South Island Organ Co at this stage of a restoration are as follows:

1. Photographs:

Up to 100 colour photographs showing the external design of the case and console and integration with the building will be taken. I have put three folders of photographs on the piano which you are welcome to look at later. Two of them refer to the organ in Melbourne that we are in the process of restoring at the moment: the Trinity Uniting Church organ. It is a Fincham organ in Brighton. The internal windchest, pipework, action, swell-linkage, console and winding layout are all photographed, as is the blowing system. The pipe conveyance plan, pneumatic tubing, tracker runs or electric cable or whatever the action is. The order and means of assembly of the organ. The cleared site, after the organ has been dismantled, the packaging detail and the container numbers, if relevant. Close-ups of intricate parts such as case carving, stopknobs, keycheeks, pipe diapering. Areas of special damage or other interest, such as parts to be altered or added, or not put back must be photographed, particularly carefully. These photographs are the resource most constantly referred to by the staff during the factory restoration and reinstallation.

2. Testing and Reports:

This is still discussing the dismantling documentation.

Tests are carried out to determine the pitch, wind pressures (including that of the blower under no demand and the demand of full organ), pressure-regulation stability, character of wind, behaviour of concussion bellows if there are such, the level of wind leakage and ambient noise levels; the condition of windchests, analysis of runnings, murmurs, ciphers; the efficiency of the key-attack, repetition, weight, feel and depth of touch of the keys; tuning stability, condition and regulation of pipes, the tuning temperament, the position of the tuners (that is an important one), pipe-speech (whether it is quick, slow, forced or weak, stable or unstable), the balance of tone from treble to bass of each stop and of each division, the balance from the foundation to the crown of the chorus; then we look at environmental problems (heat, cold dampness, dryness, mould, rot, ultra-violet light damage, rust, corrosion, vermin damage, structural damage and wear and tear); condition of keys, pedals, stops, decoration, cabinet work, doors, paint, stain and polish, linkages, felt, leather, rubber, glue, steel - it goes on and on and on; condition of the action parts, coupling and stop combination systems, the position and condition of lights, plugs, heaters, ladders, passageways, framework; and then we look at the organ's artistic integrity, its suitability for its purpose; and finally, the room acoustic is looked at, and the siting of the instrument and its tonal egress. So that all goes into Tests and Reports.

3. Video:

The Company has found video a powerful tool in the documentation process and now uses a camera with hi-fi stereo sound to record the sound of all stops throughout the compass, and show the spatial relationships of the organ, the working of the action and winding system, the condition of damaged parts, the general state and particular alterations found or proposed at the time of dismantling, and in fact all visual aspects of the organ down to the minutest detail. This usually takes one to two hours of tape at this stage of the work.

4. Sketch Drawings:

These are done initially as an insurance against loss or damage to the organ in transit, and include dimensioned sketch plans and elevations of the layout. These will be quite rough at this stage, just freehand drawings, but they will contain all the essential information so that, if the organ for some reason disappeared over a bank on the truck, or on the bottom of the ocean or wherever, we would be able to have enough information to make another one. And these drawings include plans and elevations of the layout, details of the casework design, console, reservoirs, soundboards, windchests, building frame, swell-boxes, tremulants, stop-actions, coupling systems, action runs, etc.

5. Rubbings:

By that I mean: like brass rubbing except that we make rubbings of all the pipe planting on the soundboards, and this can be done very quickly and easily just using plain white lining paper and a black crayon or soft pencil and we make a pattern rubbing of all the holes in the top boards of the windchests and soundboards, and this is done initially again as a security against loss in transit, and these are rolled up and they are transported to the company's factory quite separately from the organ - all this material, so that there is no chance of it all disappearing together. And of course all this material as well forms a valuable archive, although that is not essentially its initial purpose.

6. Length and Cross Rods, usually done on Tapes:

This is because the tapes can be rolled up and transported easily, separately from the organ.

Traditionally organbuilders use rods instead of drawings, or as well as drawings in the construction of organs. So they have a length rod which would have marked on it in full size, all the essential relationships of the parts across the length of the organ. There would be another for the depth of the organ and another for the height of the organ. And in most organbuilding factories, traditionally that is all the workmen would ever see or work from. These rods are very useful for marking off the position of all the pulldowns on the chest or the key centres, or anything where you have a lot of measured data to record.

7. Charts:

Charts are made of pipe scales, and again are initially made as a precaution against loss in transit and usually only the C pipes or the C and G pipes are

measured for all stops throughout the compass. The details noted on these charts are: the material the pipe was made of, the body diameter(s) and length, foot-length, cut-up, width of mouth, angle of languid, any voicing aids such as roller bridges in the mouth, etc., foot-hole diameters, in the case of reeds the type of shallots and the actual length and width, and the opening measurements of the shallots are recorded as well as the thickness of the tongues. For mechanical action organs, charts are made also of the key tensions of all keys, and this is a most valuable test and, with the wind on, the top resistance of all the keys is measured in grams, with a special spring, and then the holding pressure of the actual pallet spring, once the pluck is broken, is also measured. This is such a chart, here, which, although it looks a very rough, scribbled scrawl, obtains a lot of valuable information. This is actually relevant to the organ that I mentioned before in Brighton in Melbourne, and it shows that at bottom C the pressure required and grams to break the pluck is in excess of 260 grams per key, whereas, by the time you get to top G, it is only 130 grams. So there is an enormous difference. This is an organ of about eight stops per manual and it has no assistance at all; it is just a straight-out tracker action. We also see that, once you have broken the pluck, the pressure is reasonably consistent to hold the key down: it only takes about 60 grams, whether you are at the bottom of the keyboard or at the top. So it is just the initial pluck. But then you get odd discrepancies, like up here in the top octave, where the general pressure is about 150 grams, we come to G where suddenly it is about 260. And then, this dot here records the fact that an additional pallet spring was fitted externally at the rollerboards. So we know that there is something in the train of the action there that needs to be specially looked at.

And this is also a valuable archive so that, when we put the organ back, we can compare this chart with how it was, and this helps to sensibly discuss arguments that tend to arise between ourselves and organists as to whether the action is lighter or heavier than it was before. And any builders here will know how protracted and difficult those discussions can be.

8. Work Diaries:

These are kept individually by the workmen.

This is something the company has only done for its off-shore work, but the company staff on site are required to keep individually diaries daily of their main activities for the day, and to particularly note any discoveries of historic or assembly interest.

9. Existing Documentation:

Valuable information is often gleaned at this time by comparing information from fault books which are usually kept at the console, (by a fault book, I mean the tuner's maintenance log book, or whatever you may call it) archives kept by the owners or other authorities, personal knowledge of organists, clergy, and other interested persons, and this can be compared with the internal evidence of the organ as the dismantling proceeds. Sometimes, of course, the internal evidence shows things which do not appear in any of these other records, and I think back to the dismantling of St Mary-Star-of-the-Sea in West Melbourne where we discovered that the organ had, in fact, been

previously dismantled, which was a fact that nobody was aware of, and not only that, but that the action originally was quite different, inside the organ, from the way we found it. At some stage, the organ had not only been dismantled and put back, but the tube runs had all been lengthened and the under-actions, which were originally down on the floor and connected by tracker work to the soundboards, which were at about seven feet above the ground, and all the tracker work had completely disappeared. The thing that made me suspicious was that the chamber was so empty inside. You walked in, and there was just nothing there except above your head, and it just looked very peculiar. Gradually, in the rubble lying around, we found bits of old trackers and bits of old pull-downs and little brass discs that were used to bush the pull-downs as they went through the soundboard. In fact there were bits of the bottom board at the wind chest that they had cut out when they had stuck the under action up directly onto the underneath which had been converted for use as supports for the new tube runs, etc. So rubbish is a very valuable resource when you are dismantling an organ. So it always pays to look under the floor boards as well, because usually the rubbish is just swept down by a lot of builders into the nearest hole in the floor, of which there are usually a few to get wind through.

10. Framework and Environs:

The organ framework, floors, walls, ceilings and underfloor cavities of organ chambers can also reveal valuable clues to past alterations and should be searched and documented. Sanding, painting and redecoration of the organ and the environs should only be carried out if necessary, and after all relevant historic information has been documented or protected. This is something that a lot of builders find very hard to learn, particularly if you are focused on doing quality work. You have this focus on tidiness, and tidiness is really a great enemy of proper restoration documentation. There is tidiness and tidiness, but the sort of tidiness that wants to paint the organ chamber and repaint the organ and repolish everything destroys an awful lot of evidence as to how things were.

11. Comparative Research:

Before dismantling an organ for restoration, it is important that the restorer has a detailed knowledge of other organs by the same builder, and preferably of other organs of the same style, period and technology. The Company always endeavours to have someone on hand with this knowledge to look out for valuable clues to alterations that may have taken place that would otherwise not be noticed. It is important to note in this regard that many organs are significantly altered without any record of the fact surviving, which I just touched on before. Also, the artistic purpose of an organ can easily be missed or lost through ignorance, or lack of sympathy or lack of curiosity.

I believe that if an organ is approached with an attitude of determined enquiry as to its artistic integrity, the restorer will seldom be disappointed at the result, and others may well be surprised. I have found that the artistic success of an organ is a subtle thing, something that often the original builder was not able to fully achieve or others maintain afterwards, although his vision may be discerned, if you are looking for it.

In other words, what I am saying is that most organs are built by builders with an artistic vision. Not all builders manage to realise that, some through their own fault, some through the fault of others. But I think it is very easy to write off an instrument as rubbish because of the way it presents itself, or because of our particular taste. Some of my greatest rewards and surprises have come from looking past that and trying to learn from an instrument what its artistic purpose is, or what the builder's vision is that he may not have been able to realise because of, perhaps, a certain lack of skill in a particular area or because of - much more often - running out of money through trying too hard, or just from not being able to get his organ in a suitable site. The reasons are legion and you know most of them as well as I do.

12. Database:

The Company has developed a computer database into which is fed all the daily timesheet information from each workman. The database allows the hours spent on each restoration to be analysed per individual item. As well, every organ maintained by the Company has a data sheet of essential information which contains a record of its maintenance history. It is very interesting for me to see how it is being done in Germany and England, because we have worked out our own system and it is very interesting to see the comparison. Computers are obviously a very powerful tool in the field of documentation and the Company has ongoing plans for developing their further use by the incorporation of Computer Assisted Design and Image Scanning.

The next stage, after dismantling, in the documentation process takes place in the factory whilst the restoration work is progressing. Firstly, video and written summaries of the work in progress are always used to support the accounts for progress payments and keep the client in touch with the work. The Company's clients (particularly offshore ones) have found this to be more cost effective and informative than visits to the factory.

For some restorations the daily work diaries are continued throughout the whole contract. For most others, detailed descriptions of the work are written up by the workmen concerned at the completion of each item, and detailed scale drawings and photographs are done of significant items of interest to the Company and/or the client. These all add to a valuable archive of information, one copy of which is held by the Company for use as a comparative resource in subsequent restorations; another is given to the client, and in the case of Australian work, a copy is given to OHTA.

I have laid out on the piano some drawings that have been made in the factory, relevant to the same organ that I mentioned before: the Trinity organ in Brighton, and you are welcome to look at those afterwards.

As the work progresses in the factory, samples of all replaced materials and any discarded parts are retained, carefully labelled, and packed for later return and storage within the completed instrument (or other safe place, if this is not practicable).

The final stage of the Company's documentation process takes place during the reinstallation of the organ. Here video, photos and daily work diaries are the main tools. This is the time when changes to the regulation of the action, wind and pipework are most likely to be made, so it is vital that they are properly recorded, though it can often be the most difficult time to do so because of the pressure of fast approaching completion dates, opening recitals and suchlike.

What then is the value of the documentation process, which over the 27-year life of the Company has evolved from simple specifications and notes to sophisticated and detailed procedures? Firstly, it greatly reduces the risk of loss or damage or mistakes while the restoration is in progress; secondly, it keeps the clients and workmen in touch with the detail and progress of the work; thirdly, it heightens their awareness of the significance of the work; and finally, it provides valuable archival information for the future of the particular organ and the whole industry.

This is the Age of Information.

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