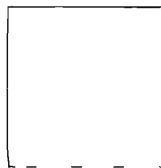
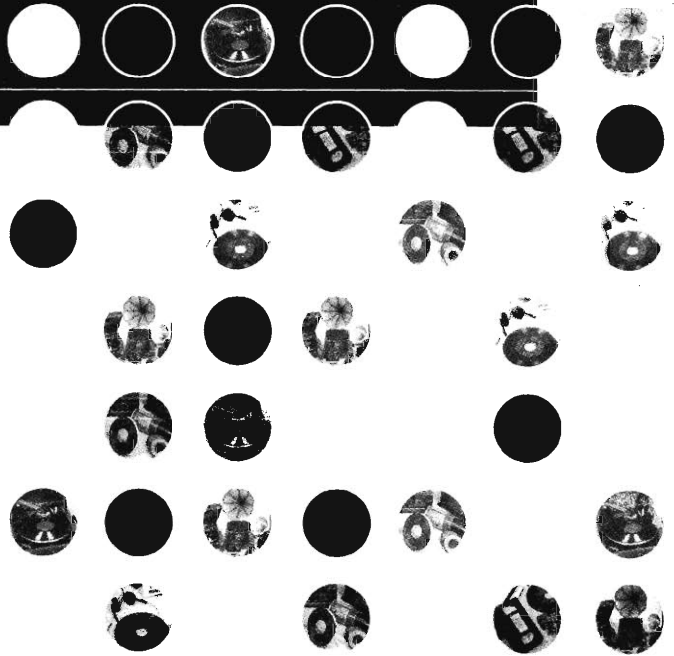


International Association of Sound
and Audiovisual Archives

Internationale Vereinigung der
Schall- und audiovisuellen Archive

Association Internationale d'Archives
Sonores et Audiovisuelles

iasa journal



- **Journal of the International Association of Sound and Audiovisual Archives IASA**
- **Organie de l'Association Internationale d'Archives Sonores et Audiovisuelle IASA**
- **Zeitschrift der Internationalen Vereinigung der Schall- und Audiovisuellen Archive IASA**

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The IASA Journal is published twice a year and is sent to all members of IASA. Applications for membership of IASA should be sent to the Secretary General (see list of officers below). The annual dues are 40 Euro/ 48 USD for individual members and 158 Euro/150 USD for institutional members. Back copies of the IASA Journal from 1971 are available on application. Subscriptions to the current year's issues of the IASA Journal are also available to non-members at a cost of 56 Euro/ 52 USD.

Le IASA Journal est publié deux fois l'an et distribué à tous les membres. Veuillez envoyer vos demandes d'adhésion au secrétaire dont vous trouverez l'adresse ci-dessous. Les cotisations annuelles sont en ce moment de 240 Euro / 48 USD pour les membres individuels et 158 Euro/ 150 USD pour les membres institutionnels. Les numéros précédentes (à partir de 1971) du IASA Journal sont disponibles sur demande. Ceux qui ne sont pas membres de l'Association peuvent obtenir un abonnement du IASA Journal pour l'année courante au coût de 56 Euro/ 52 USD.

Das IASA Journal erscheint zweimal jährlich und geht allen Mitgliedern der IASA zu. Aufnahmeanträge für die Mitgliedschaft bei der IASA sind an das Sekretariat (Anschriift siehe unten) zu richten. Die Mitgliedsbeiträge betragen derzeit 40 Euro / 48 USD für individuelle Mitglieder und 158 Euro/ 150USD für Institutionen. Frühere IASA Journale (ab 1971) sind auf Anfrage erhältlich. Der Bezugspreis des IASA Journal für Nicht-Mitglieder beträgt 56 Euro / 52 USD.

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<http://www.ilgc.org.uk/iasa/>

Printed in Budapest, Hungary

Designed by the British Library Corporate Design Office

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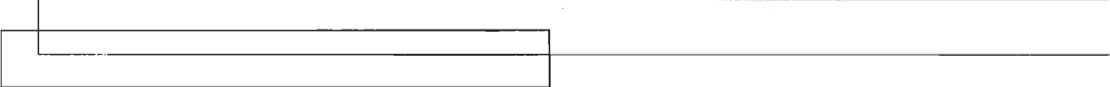
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The keyword associated with *IASA Journal* no.16 was 'metadata'. This time the keyword is 'review', not so much on account of the scope of the *Reviews* section, but due to the fact that it contains the first index and contents list of the *IASA Journal*. In fact it's the first IASA publications index of any kind to appear in almost ten years. As several institutions polish up their web-centric strategies delivering digitised content on the Web (am I being previous?) it may be instructive to review the issues listed therein that have exercised IASA minds in the preceding decade.

But this is not exclusively a retrospective issue. The metadata theme is continued and readers should note the drift, identified in Richard Wright's article on the bwf file format, of all things concerned with metadata towards XML. American businesses and institutions are already practitioners, and as we could see clearly in Jane Hunter's article in the last journal, it is the direction being taken on other continents. Having recently been asked to consider exporting data in XML format from the MARC records held in the National Sound Archive's catalogue, CADENSA, I foresee a large slab of references in the next Journal index under 'metadata' and its associated mark-up languages: likewise under the letter 'e', a single vowel that appears to be growing in weight and substance as I write.

Alongside these new, often ephemeral cyber-terms, we continue to encounter unfamiliar terms from the past. I imagine that 'dictabelt' will not have been uttered recently by the average IASA member but recordings on dictabelts do seem to be turning up in many places: a few moments ago I discovered 280 references on the Web. Most of these recordings (and the majority appear to be American, which is where the format was manufactured) concern political or judicial events or private exchanges. The British Library recently had to deal with a very high profile example that you can read about in these pages. If there is to be a straightforward answer to the question posed by this year's annual conference – 'Why collect?' – then one might say, precisely in order to conserve the irreplaceable, unrepeatable content of artefacts such as dictabelts.

The General Assembly at this year's conference will be asked to agree the establishment of a new Research Archives section. Grace Koch, a leading figure in its establishment, lays out the main issues faced by members of this Section-to-be and provides sensible solutions that have been tried and proven in her own institution, AIATSIS. Those who remember the session in which Grace delivered this paper in Singapore last year may regret that it is not yet IASA editorial policy to record conferences on video. The follow-up to her paper was a memorable piece of IASA theatre in which various research library representatives played the respective roles of field recordist and archivist, each with legitimate and mostly incompatible demands on each other's time and resources. All of us in the audience recognised the familiar stories of incomplete or non-existent documentation and expectations that standards will always be maintained regardless of the circumstances faced by the sound recordist. IASA's new section will be supplying some happy endings, I am sure.



When digitisation was first announced as a strategy for long-term preservation I remember thinking of the Biblical story from Genesis about Noah's Ark and how strict the selection criteria applied to local fauna had to be in order to prevent the ark from sinking beneath the flood waters. An IASA Task Force on selection, led by Per Holst, is currently assuming the role of Noah and will presently be reporting on its conclusions. Meanwhile we can read Catherine Lacken's account of how a German television station (SWR) is going about deciding what is 'in' and what is 'out' for its digital future. Her solution may not be as cut and dry for most national institutions with their wider brief and range of historical formats but it nevertheless proposes a neat and workable model.

It has become a tradition in the summer issue of the Journal to include a newcomer and this time we welcome Anna Jensdóttir and her illustrated description of the Audio-visual Department at the National and University Library of Iceland: another delightful venue for meetings of IASA's Nordic Branch?

Finally, a welcome return of the Board Charts that many of you have said shows the IASA leadership in a totally new light. Executive boards can often seem lofty and remote, even in a sociable association like ours, so it can be refreshing and reassuring to remind each other that what we all have in common is a passion for audiovisual recordings, regardless of individual tastes and preferences. I look forward to sharing more stories about old records with you in London in September.

I closed my last letter with a mention of the World TV Forum in New York last November, which I had attended on behalf of IASA. The messages I brought away from that meeting were about the rapidly expanding role of the internet as an additional delivery medium for broadcasters, and the crucially important role of radio (and the internet) in providing for the information needs of developing societies. Internet broadcasting is, for some time at least, going to be rather more about radio with pictures than about video-on-demand. So in the area of broadcasting our skills in the professional management of AV content have to meet steadily increasing demand, and we must strive, as ever, to ensure we are adequately funded to respond to these challenges.

Our Mid-year Executive Board meeting in March approved the following development objectives for the Association for the remaining period of its term of office. **We will further entrench our AV remit into the work of the Association.** We will do this by ensuring that our conference programmes are not limited to recorded sound; by establishing the new Research Archives Section with a remit to include and represent small specialist archives with multi-media holdings; and by engaging with metadata standards activity across the various media by maintaining contact with *inter alia* AES and EBU work in this field. **We will improve our geographical reach.** We are attracting new members in Africa and we look forward to establishing the first non-European regional Branch of IASA in the period prior to our 2003 conference in South Africa. We have also made some good contacts in South-east Asia and we hope to strengthen our profile by working with a local partner to run a regional seminar for radio archivists. Within available resources we will continue to support the travel costs to our annual conference for members whose institutions are unable to fund them, particularly those from the developing world. The new Research Archives Section will no doubt also help to improve the geographical profile of our membership. Without neglecting our core task of internal communication for our members, **we will bring a new focus to the external representation of our needs and interests to the wider world,** to government and international agencies, and to legislators and opinion formers. This task is not easy, but we should not neglect it. As a small professional association, our favoured strategy is to work with our closest neighbours on areas of common interest with the object of raising our profile and strengthening our voice in UNESCO, in speaking to national governments, and to regional bodies such as the European Commission and ASEAN. To this end we are supporting the growth and development of the Co-ordinating Council of Audiovisual Archives Associations (CCAAA). We also agreed that we should expand the Association's use of its website to reflect this new focus.

The annual meeting of CCAAA in Paris, during March, had a full agenda. FIAF, IASA, ICA and IFLA welcomed FIAT as a member of the Council and an application for membership from SEAPAVAA was approved. Formal *Terms of reference* were agreed, as was the appointment of a Convenor and a Rapporteur, which will provide for continuity in support of Council activities. One of the tangible outcomes of this meeting was the decision to support regional

workshops for broadcast archivists. FIAT and IASA will be supporting a seminar in Mexico City this November. We hope that this will be the first of a series of such ventures.

By the time you read this you should have received the invitation to the London conference, with ARSC in September at the British Library. The organisers have been hard at work and I know that we can expect a rich programme and an enjoyable few days. I am looking forward to welcoming you.

Finally, I remind you that in London we will be approving a Nominating Committee to supervise next year's Board Elections. Please give some thought to considering good candidates for the offices on which the health and development of our growing association depends.

Crispin Jewitt
28 May 2001

IASA Policy statement on national discography

Background. The concept of national discography follows on naturally from the development of national bibliography (1) in the field of librarianship and documentation. This statement represents the IASA position on the benefits of national discography and provides guidelines to best practice for members who may have the responsibility for establishing this service in their country, who intend to establish this service, and who may be seeking funding. The concept of national discography (2) may have two aspects:

- (a) The systematic coverage of all current publications, year by year (in some countries benefiting from legal deposit)
- (b) Systematic retrospective coverage of all non-current publications.

Purpose of national discography. National discography provides for the documentation of the production and publication of phonograms (3) in a defined national or cultural area. This activity delivers the following benefits:

- (a) it enables the selection of new acquisitions by collecting institutions, and supports compliance and registration procedures for legal deposit.
- (b) it provides an indication of the funding requirement for preservation programmes.
- (c) it sustains academic research by enabling access in libraries and archives, and by disseminating information about their holdings.
- (d) it publicises the activities of national phonogram industries, and stimulates the publication of re-issues.
- (e) it supports the marketing of local music and the administration of copyright.

Current / retrospective. Newly published product should be included as near to the date of publication as possible. Priority should be given to currently published output, but the overall aim should be to complete retrospective coverage where it is incomplete.

Coverage. A national discography should cover all phonographic production within the defined national or cultural area. It should include material commercially distributed within the area by publishers whose principal offices are not within the area. It may also include material of national or cultural relevance which falls outside the criteria of publication and distribution.(4)

Documentation standards. Policy in this area deals with the information to be recorded, not with the presentation or arrangement of data. The inclusion of data relating to composers/authors and works, performers, label, catalogue number, and date and place of recording, and the physical characteristics should be regarded as mandatory (5). International standards should be followed by the use of the IASA Cataloguing Rules (6), which are a development of AACR2 (7) to meet the requirements of sound recordings.

Availability and format. As a paper or CD-Rom product, national discography should be on sale to the public and freely available in libraries in a standardised format,

e.g. UNIMARC (8). As an on-line database it should be searchable via the internet without payment. Whatever the format, it should be possible to search for information on specific known items, or for any items that conform to specified search criteria.

Responsibility for compilation should lie with the designated repository for legal deposit. In the absence of legal deposit provision, compilation may be undertaken by an institution comprehensively receiving material by voluntary deposit or by purchase, such as a national archive, library, or broadcaster.

Responsibility for dissemination does not necessarily lie with the compiler. The body responsible for compilation may also undertake publication, or it may make an arrangement with another agency for publication and dissemination. In any case the publisher should be entitled to make a charge for the downloading and use of the data in third-party databases.

Definitions and citations

- (1) A bibliography which lists all the books and other publications published, or distributed in significant quantity, in a particular country. Sometimes the term is used in respect to the new publications published within a specific period, and sometimes in respect to all those published within a lengthy period of many years. It is also used to indicate a bibliography of publications about a country (whether written by its nationals or not) and those written in the language of the country as well as those published in it. – Prytherch, Ray. *Harrod's librarians' glossary*. 8th ed. Aldershot, 1995.
- (2) A catalogue or similar listing of sound recordings in any format (cylinder, roll, disk (sic.), tape, CD etc.) giving full details of the item recorded (title, composer/author, performers, date etc.) and manufacturer's product number. – Prytherch, Ray. *Harrod's librarians' glossary*. 8th ed. Aldershot, 1995.
- (3) A physical carrier (typically a disc, or tape cassette) containing one or more sound recording(s) and offered for sale, or otherwise distributed.
- (4) The documentation of radio and other audiovisual materials will be the subject of a future IASA policy statement.
- (5) The matrix number is commonly a mandatory requirement in discography concerned with the coarse-groove era.
- (6) *The IASA cataloguing rules: a manual for description of sound recordings and related audiovisual media*. IASA, 1999. On-line at <http://www.llgc.org.uk>
- (7) *Anglo-American Cataloguing Rules*. 2nd edition. Ottawa, etc., 1988.
- (8) Universal machine-readable catalogue – a standard format developed under the auspices of a Working Group of IFLA. UNIMARC specifies the tags, indicators and subfields to be assigned to bibliographic records in machine-readable form. Its primary purpose is to facilitate the international exchange of bibliographic data in machine-readable form between national agencies. – Prytherch, Ray. *Harrod's librarians' glossary*. 9th ed. Aldershot, 2000

IASA Policy guidelines on copyright and other intellectual property rights

This document, which sets out IASA policy, is intended to provide guidance to audiovisual archivists on professional conduct in the area of intellectual property legislation. It also provides a basis for professional representation to government and other bodies who may draft or revise legislation in this area.

Background

Audiovisual archives hold cultural heritage covering all spheres of musical, artistic, sacred, scientific and communications activity, reflecting public and private life, and the natural environment, in the form of published and un-published recorded sound and image. Archives are responsible for the preservation of these holdings to enable both present and future access.

The principle enshrined in copyright is that creators of audiovisual works (composers, authors, producers, performers) should enjoy the benefits of their creation, and have legal protection against the unfair exploitation of their works by others. This protection provides an economic basis for continuing creative activity. These arrangements give rights-owners the right to license certain "restricted acts" such as copying, public performance, and broadcasting. In recognition of the common ownership of a shared cultural memory these rights are subject to limitations of term.

Legislation exists at international and national level. Agreements such as the Berne Convention 1886, the Rome Convention 1952, and subsequent directives and treaties of the European Commission, the World Trade Organisation and the World Intellectual Property Organization are reflected in the national legislation of signatory or member countries. Intellectual property rights extend beyond the original concept of author's copyright to include moral rights and the neighbouring rights of publishers and performers.

Audiovisual archives are mainly concerned with the rights owners' prerogative to restrict copying and public performance. Revisions to legislation in the context of digital materials have particular impact on the archival activities of preservation and access.

Key principles

- (1) IASA recognises the general benefit to society of copyright protection and seeks to develop good relations with rights-holders and their representatives.
- (2) Audiovisual archives should operate within the framework of international and national legislation.

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- (3) IASA supports the principle of limiting the duration of intellectual property rights in the interests of wider public access to cultural heritage.
 - (4) Public interest exemptions or exceptions to the legal framework should be legislated, where necessary, to enable audiovisual archives within the public sector to fulfill their obligations to the taxpayer.
 - (5) IASA recognises the moral rights of indigenous peoples, and believes that archivists should respect these rights where they are not already protected by legislation. Reference should be made to relevant international bodies (e.g. UNESCO) for the extent and nature of these rights. This principle may include recordings whose legal term of protection has expired, or whose un-expired rights are held by the archive.

Policies on archival exemptions

The following archival activities should be exempt from copyright protection:

Acquisition

- (a) *recording of broadcast or webcast, terrestrial or satellite transmissions, to add material to the Archive;*

Collection management

- (a) *making copies of recordings for the purposes of preservation;*
- (a) *digitisation of analogue recordings for the purpose of preservation;*

Access

- (a) *the playback of archive recordings on the archive's premises without charge to individuals or groups for the purposes of education, study, or research;*
- (a) *the use of archive recordings in exhibitions or educational events on the archive's premises;*
- (a) *the loan of archive recordings to other publicly funded archives, libraries, museums, or galleries, for use in exhibitions or educational events, subject to written agreements between the institutions restricting the use of the recordings to this designated purpose;*

Publication

- (a) *the inclusion of excerpts as illustrations in a printed publication issued by the archive.*

Recovering the sound from the Rivonia Trial

Adrian Tuddenham (1), Peter Copeland, and Nigel Bewley (2)

Introduction

The Rivonia Trial of 1963-4, one of the most important political trials of the twentieth century, marked a turning point in South Africa's history and the struggle against apartheid. Attracting huge international attention at the time, 'Rivonia' led to the world-wide condemnation of South Africa's racial policies. On 9 October 1963 at the Palace of Justice in Pretoria, Nelson Mandela and nine other leading members of the African National Congress (ANC) were charged with acts of sabotage designed to ferment 'violent revolution' and overthrow the state. Named 'Rivonia' after the Johannesburg suburb where the defendants had been arrested in July 1963, the full trial began on 3 December 1963 and culminated on 12 June 1964 in life sentences for eight of the accused. The defence case began on 20 April 1964 with Mandela ('Accused No. 1') making a dramatic three-hour statement of his political ideals directly from the dock. This was unsworn and did not therefore carry the same weight as evidence from the witness box, but could not be cross-examined. It was to be his last public speech for 27 years until his release from jail on 11 February 1990.

In line with normal court procedure in Pretoria at the time, sound recordings of the trial were made by court officials to supplement the stenographic transcript. These recordings were made using a Dictabelt machine: a US-invented format, now long obsolete. After the trial the belts were retained by the National Archives of South Africa (NASA). Recently, with renewed interest in the trial, it was found that no suitable Dictabelt recorders had survived in South Africa and in September 2000, during a visit to South Africa, Rob Perks, Oral History Curator at the British Library National Sound Archive, was approached to assist. Seven sample dictabelts, comprising Mandela's famous speech, were transferred to London in October.

The Dictabelt Format

The Dictaphone is a machine, which recorded upon Dictabelts. They formed a sound-recording format intended for dictation purposes in offices. They were introduced at the end of World War 2 in America, where they replaced Edison wax *Dictaphone* cylinders. (The latter continued to be used in Britain until at least the year 1970). Like the Edison cylinder, the Dictabelt format had the advantage that, when being transcribed by an audio typist, it allowed a passage to be repeated quickly when the pickup was skipped back a few grooves.

A Dictabelt comprised an endless plastic belt about 3.5 inches wide (approximately 85mm), formed into a loop about 12 inches circumference (300mm). It was mechanically recorded by indenting the surface to form a groove, which could then be replayed with a stylus similar to that of a microgroove record-player.

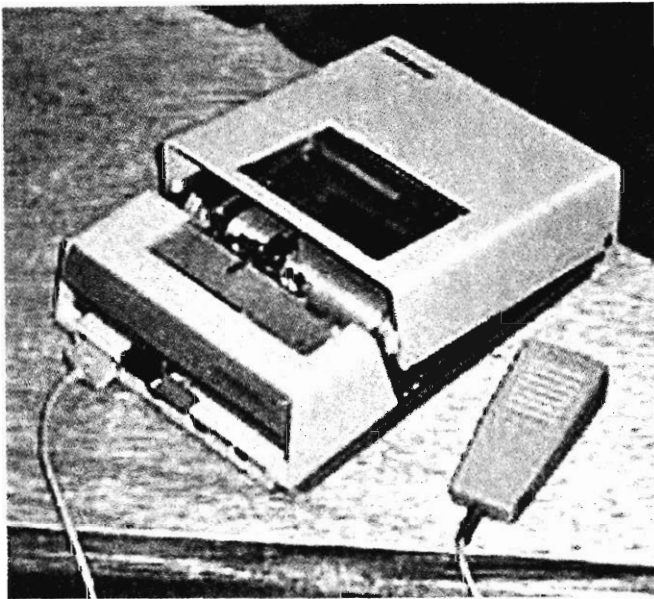


Figure 1
A Dictaphone machine

For recording and playback, the machine tensioned the belt around two parallel rollers (Fig. 1). By slackening the tension, the recorded belt could be slipped off the rollers. A Dictabelt therefore formed a flexible version of a cylinder, which could be packed into an ordinary envelope for postage.

In the mail, or after short-term storage, it would normally remain sufficiently un-creased to permit playback. When stored for much longer periods of time, any creases tended to become permanent, and the material became less flexible. Belts in this condition might (at best) throw the replay stylus out of the groove at each revolution, or (at worst) would split and become unplayable. The recordings of the Rivonia trial were beginning to deteriorate in this way.

How The British Library became involved

The British Library National Sound Archive had acquired a Dictaphone machine from Dr Henry Hardy, Sir Isaiah Berlin's editor and one of his literary Trustees, some years before, and had used it to recover a great deal of sound from Sir Isaiah's own Dictabelts. Other Dictabelts came to light, and by 1999 the machine had been modified for playback only, and loaned to one of our freelance engineers.

The Dictabelts from South Africa were carefully examined and the possibility of replaying them was assessed.

Recording Speed

With the naked eye, Peter Copeland (PC) could see that they carried sound whose spectral distribution was quite different from that of Sir Isaiah Berlin's recordings. This suggested that they had been recorded at a different speed. It would have been understandable, if a little unusual in the Dictabelt format, to find that the recording machines had been modified to run at half speed. Worthwhile economies in purchase, storage, and handling would have overridden considerations of compatibility and quality of sound. It was later confirmed that the recording speed had indeed been slower than normal, but by a factor of more than two.

Creases

The machine was operated with all covers open or removed, so as to give easy access to the belt and mechanism for adjustment, and to allow manual guidance of the playback stylus where necessary. The traversing slidebars and the leadscrew which drives the carriage can be seen near the front of the machine, parallel to the rollers, in Fig. 2.

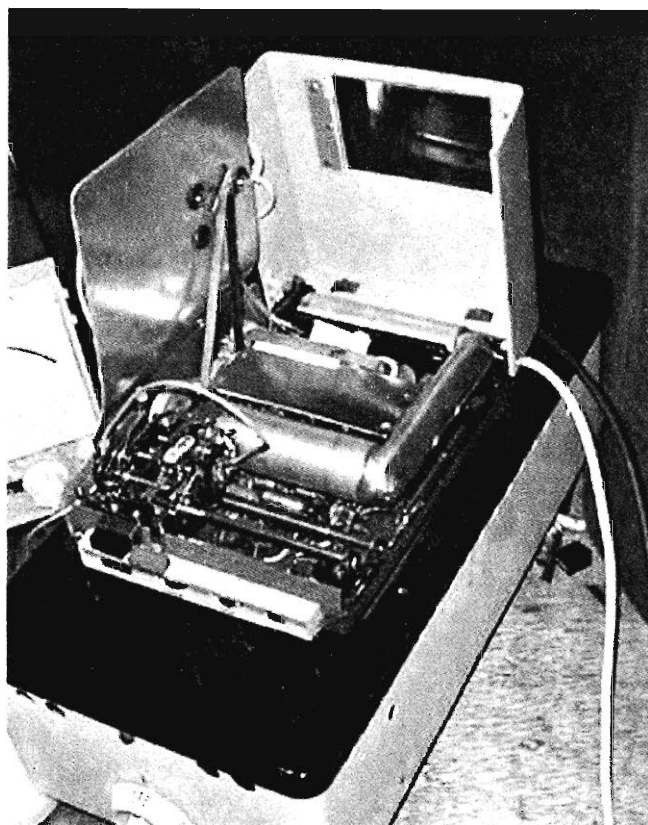
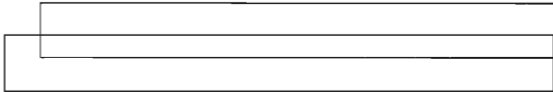


Figure 2
**Modified Dictaphone
machine with extra
motor behind the
aluminium plate
driving the flat belt.**



The belts had developed creases of sharp radius during storage, and these showed no inclination to flatten out when they were gently manipulated. From experience, it was known that belts in this condition could split if too much force was applied, but the creases had to be removed by some means to make them playable. The plasticity of the material was known to increase at higher temperatures. Initial experiments confirmed this, and it was therefore considered necessary to devise a suitable heating process which did not involve physical contact with the outer, recorded surface of the belts.

The heat was provided by standing the Dictaphone on an industrial hotplate. The energy controller fitted to the hotplate was too coarse for this application, so it was manually controlled in response to the readings of an electronic thermometer. The thermometer monitored the temperature of the system from a thermocouple mounted on the frame of the back roller (the far corner of Fig. 2). That part of the frame is enclosed by the belt in normal operation, so its readings are reasonably representative of the Dictabelt's own temperature. This task was managed co-operatively between Adrian Tuddenham (AT) and PC in order to minimise the risk of damage to the belts while maximising the quality of the recovered sound.

Each belt was placed on the machine and was then allowed to run continuously without any attempt at playback. The temperature was slowly increased and the surface of the belt closely watched. When the creases appeared to be approaching the radius of the machine's rollers, the temperature was stabilised, and playback attempted. If the stylus was found to be groove-jumping badly because of any crease remnants, the temperature was raised slightly and another attempt made at replay. At the first sign of high frequency loss in the sound, which indicated the material was getting softer, the whole Dictaphone was removed from the hotplate and allowed to cool. It was kept running to avoid putting any further creases into the belt. On every occasion when this was done, the sound quality returned to normal once the belt temperature had fallen, showing that no significant permanent changes had resulted.

Playback Speed

To slow down the sound, AT first copied it to analogue tape, and replayed it at half speed. The resulting replay was satisfactory; but grooves that had been missed because of stylus jumps could not easily be heard or corrected when listening to the double-speed sound from the Dictabelt. AT could only hear discontinuities after the speed had been reduced, when it was much more difficult to find any missing segments

This simple analogue experiment demonstrated that it would be necessary to slow down the Dictabelt machine before a transfer was made. The machine's own motor was unsuitable for variable speed operation, so an auxiliary motor and drive belt were fitted to allow this to be done (Fig. 2).

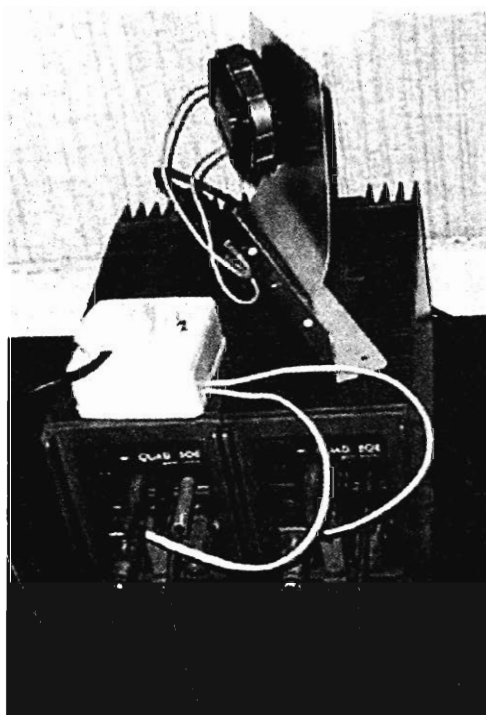


Figure 3
**The new motor and
its power supply**

The motor speed depended upon the frequency of its A.C. power supply. To allow this to be varied, a sinewave voltage from a signal generator was amplified by a pair of Quad 50E audio amplifiers (Fig. 3). Each amplifier had a standard public-address 100-volt output, so when the two amplifiers were wired in series a 200-volt supply was available for the motor.

Once AT had got this to work, a very faint, continuous low frequency tone was found to have been recorded upon the belts themselves - the well-known intrusive fault known as 'background hum' had been picked up from the mains supply at the time of recording. AT was able to feed some of the signal through an electronic filter sharply tuned to 50Hz, and thence to the Y plates of an oscilloscope. With the timebase of the oscilloscope synchronised to the local mains supply (also 50 Hz), a rough sinewave was displayed upon the screen. If the displayed waveform drifted to left or right, this indicated a difference from synchronous speed. By careful manual control of the signal generator supplying the playback motor, it proved possible to hold the waveform stationary and maintain precise replay speed.

The correct speed was found to be about 20% lower than would be anticipated from a Dictaphone modified to record at exactly half speed. It is interesting to speculate that the equipment used for the Rivonia trial might have been manufactured for use on a 60Hz mains supply, but was in fact being operated on a 50Hz supply.



Playback electronics

The electronics of this particular model of Dictaphone were based on germanium transistors, which did not function correctly at elevated temperatures. So a connection was brought out directly from the playback cartridge to an external amplifier. The wire for this is visible in Fig. 2 looping upwards from the playback carriage at the top front of the machine.

The playback cartridge used a piezo-electric device. Such cartridges are rugged, and provide a high output (meaning less amplification is required). But, as they comprise a single crystal encased in a damp-proof jacket, their performance differs from one specimen to the next, and may change with time. The external low-noise amplifier had a resistive input impedance of 1800 ohms, which minimised frequency-response variations arising from the use of the Dictaphone's original piezo-electric playback cartridge, whilst allowing the existing stylus to be used. A natural 'constant-velocity' response resulted. This then allowed the application of properly controlled correction for the characteristics of the recording.

We started with the default standard applied within the NSA for grooved media, the exact characteristics of which are unknown. But research has subsequently shown that this default standard, although suitable for most European grooved media, is unsuitable for many of American origin. As the Dictaphone system was of American origin, we decided to change our standard to constant-velocity above 500Hz and constant-amplitude below. Once the sound is digitised, this can be reversed at a later date without losses, so long as the process has been documented.

Editing

On hearing the Dictabelts at the correct speed, it became apparent that the Court had employed two Dictaphone machines running alternately, so a continuous recording could be made. This indicated that it would be necessary to eliminate the overlaps and edit the speech to make it sound continuous. Where an overlap occurred, the version with the better quality was selected; but the sound volume was not always consistent under these conditions, for reasons I shall describe in a later section.

The analogue audio was amplified to within 8dB of the peak signal volume of a 16-bit analogue-to-digital converter sampling at 44.1kHz. The performance of the on-board converter of an Apple Mac G3 was carefully measured, and found to be more than adequate for this particular task. The results were stored upon the hard drive of the Mac as a series of AIFF files. At intervals, the files were copied to recordable CDs as a safeguard against accidental data loss. (Fig. 4)

The files were edited using the application program *Peak*. At this stage, any missing or poorly transferred sections could be identified, and the playback easily repeated. Some sections of Dictabelt which had obstinately remained creased presented a considerable editing challenge.

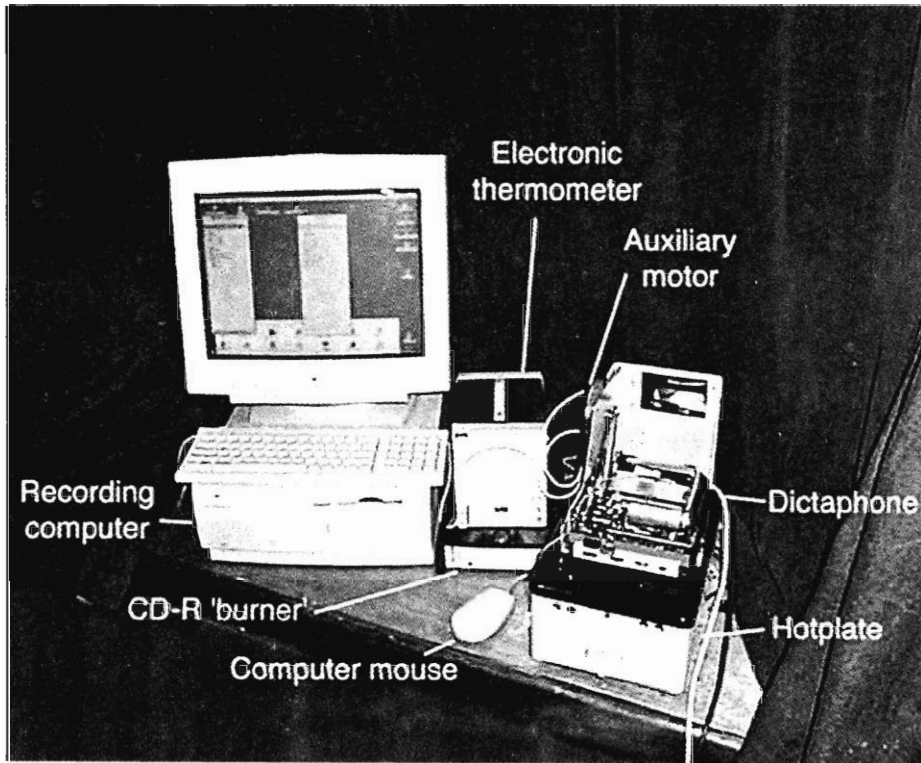


Figure 4
The complete system as set up for operation.

Many dozens of takes were needed before the complete sound content was recovered, and the editing process took many hours. All the editing was performed by “cut-and-paste” methods; no digital manipulation of the sound was permitted.

First results

The results were recorded in Audio CD Format on CD-R discs. At that stage we had not “seen the wood for the trees”, and it was next necessary to insert track-flags to allow users to navigate around the discs.

The arrangement used three discs, the first having a duration of 67mins 7secs, the second 69mins 46secs, and the third 54mins 48secs. The Oral History curator Rob Perks supplied PC with a transcript of everything that had been recorded, and PC divided the discs into an average of twelve tracks each, depending upon changes of topic, adjournments, etc.

Subsequent versions

The equipment that had been used at the trial incorporated an automatic volume limiter somewhere in the recording chain. The peaks of the sound remained constant in level, but background noises went up and down reciprocally. At the National Sound Archive, the technical manager (PC) considers it the duty of the sound archivist to preserve *the original sound*, rather than anything else. So to preserve the original sound picked up by the microphone in the courtroom requires us to reverse the automatic volume limiter. Some specialist equipment has been developed over the years for this purpose.

When PC listened critically to the dubbing under ordinary listening conditions, it became apparent that the volume-reversing circuitry had not been tuned correctly, so a second version was made. This also had the advantage of further reduction to the Dictabelt's surface-noise.

Finally, NB made some adjustments to the speech quality. The microphone in the courtroom was not capable of recording in high-fidelity - that was not its purpose - but it proved possible to improve the speech quality without removing any of the original sound.

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Photographic credits: All by R. N. Davis.

The Broadcast Wave Format

*Richard Wright, Technology Manager, Projects,
Information and Archives, BBC*

The Broadcast Wave Format – BWF – is a standard for electronic file interchange of audio material. The European Broadcasting Union (EBU) specifically developed the BWF for use in radio. This article gives the reasons why this standard was considered a ‘good thing’, describes the standard in detail, and gives some ideas of its links with wider work in metadata and the future of electronic handling of audio.

Background

For about seventy years, broadcasters were able to send material from one company or station to another in a physical format, which could be immediately used – even direct to air – by the recipient. Originally this material was on shellac or vinyl discs, since the 1950’s on quarter-inch tape and since the 1980’s on audio CD.

The proliferation of computers and data networks has led to the electronic exchange of audio material, as data files. This is a straightforward process, and there is a *de facto* audio file standard in the .wav (wave) format used by IBM and Microsoft, that is understood by standard sound cards. However not all wave files are equal, and radio broadcasters experienced problems exchanging material in wave format.

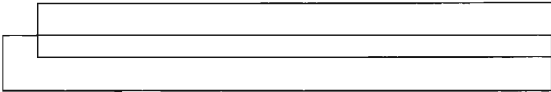
Problems on the waves

The main problem with a standard wave file is that it does not have to have any identifying information attached. A quarter-inch tape (or disc or CD) could also be unlabelled, but in standard broadcasting practice the tape would be labelled, and would be shipped to another party in a tape box that had further identifying information. To some extent, the information in the BWF format supplies what used to be on a quarter-inch tape box.

Another problem is that there are many ways to code audio for digital storage and playout and some of these formats depend upon decoding software – not just the standard decoding built into common soundcards.

Finally, in broadcasting there is often a specific need for time code – for synchronised multiple audio sources, or for synchronisation of audio with video.

The outcome of all this was that material arriving as an electronic file (attached to an email, or downloaded with FTP) might be unidentifiable, unplayable and unsynchronisable, or any combination of these three conditions. This happened with increasing regularity and could not be ignored.



The solution was proposed in 1996 by the EBU committee P/AFT (audio file transfer), headed by John Emmett with strong support from Swedish Radio, as well as from numerous other EBU members including the BBC. This became EBU document T-3285, July 1997: *Specification of the Broadcast Wave Format*. This standard gives broadcasters a way to supply the specific identifying data most needed when exchanging audio material between broadcast organizations.

I should point out that exchange of discs and quarter-inch tape also had problems. In particular, the equalisation was not always known, and speed variations could occur. The real problem with digital data is that a lack of information (knowledge of the coding scheme and required playback software) can make a wave file completely unusable, whereas a tape or disc could still be played, though imperfectly, using incorrect equalization.

How BWF works

The Broadcast Wave Format allows extra information – metadata – to be placed in a specifically defined 'chunk' in the header area of the standard wave file. This information is divided into the following fields:

Description

ASCII string (maximum 256 characters) containing a free description of the sequence. To help applications which only display a short description it is recommended that a resume of the description is contained in the first 64 characters and the last 192 characters are used for details. If the length of the string is less than 256 characters the last one is followed by a null character (00).

Originator

ASCII string (maximum 32 characters) containing the name of the originator/producer of the audio file. If the length of the string is less than 32 characters the field is ended by a null character.

OriginatorReference

ASCII string (maximum 32 characters) containing an unambiguous reference allocated by the originating organisation. If the length of the string is less than 32 characters the field is ended by a null character.

OriginationDate

10 ASCII characters containing the date of creation of the audio sequence. The format is «'year'-'-'month'-'-'day,» with 4 characters for the year and 2 characters per other item.

Year is defined from 0000 to 9999

Month is define from 1 to 12

Day is defined from 1 to 28, 29, 30 or 31

The separator between the items can be anything but it is recommended to use one of the following characters: '-' hyphen '_' underscore ':' colon ' ' space '!' stop.

OriginationTime

8 ASCII characters containing the time of creation of the audio sequence. The format is « 'hour','-', 'minute','-', 'second' » with 2 characters per item.

Hour is defined from 0 to 23.

Minute and second are defined from 0 to 59.

The separator between the items can be anything but it is recommended to use one of the following characters: '-' hyphen '_' underscore ':' colon ' ' space '.' stop

TimeReference

This field contains the time-code of the sequence. It is a 64 bits value which contains the first sample count since midnight. The number of samples per second depends on the sample frequency which is defined in the field <nSamplesPerSec> from the **<format chunk>**.

Version

An unsigned binary number giving the version of the BWF, particularly the contents of the Reserved field. Version zero is for USID identifiers; Version one, agreed in December 2000, allows full SMPTE UMID identifiers to be stored in what had been the reserved area.

Reserved

254 bytes reserved for extension. If the Version field is set to zero, these 254 bytes must be set to a NULL value.

CodingHistory

Non-restricted ASCII characters containing a collection of strings terminated by CR/LF. Each string contains a description of the coding process applied. Each new coding application is required to add a new string with the appropriate information.

How to use the BWF

The main idea is that the user of a BWF file should not have to do anything – certainly not know how many bytes are in the Reserved field, and whether or not they are ASCII or binary. The software / system handling the BWF file should be BWF compliant, and handle the machine level details. If the software / soundcard is not compliant, the BWF information will be entirely ignored anyway (it will be an unrecognised 'chunk' in the header, and will simply be skipped). It is important to note that the BWF file will play on non-BWF compliant software, because a BWF file is a wave file. But the extra information will not be interpreted.

The details only need to be dealt with by a programmer implementing software to read or write BWF. The user of such software will simply see richer identifying and time-related information than for an ordinary wave file.

Tricky bits

Universal, unique, unambiguous identifiers: a key issue for any item in any archive is identification. Electronic 'artefacts' are just bits, so they have no self-identifying features. The file may (or, more likely, may not) have a file name to identify it. In broadcasting it is all too common for files to have names like *Tuesday* or *Wembley* or *OB3*. The BWF has the **OriginatorReference** field specifically for holding a unique identifier. This field was left to users / manufacturers to implement, though a recommendation was agreed that provides one sensible, simple scheme for using this field to implement the USID (universal sound identifier). The USID has its own recommendation document: *EBU Recommendation R99-1999: 'Unique' Source Identifier (USID)* for use in the OriginatorReference field of the Broadcast Wave Format

However just as the USID was being agreed, the film and television side of broadcasting was agreeing the SMPTE UMID (Unique Material Identifier) *SMPTE 330M-2000*. This is a more complex standard, but because of the need for radio and TV to align, the latest version (Version One) of the BWF allows for a full UMID to be put in the BWF reserved area. Further information on the SMPTE UMID is available at <http://www.smpite-ra.org/s330mex.html>

The SMPTE UMID allows 'instance' numbers, to distinguish between multiple copies of the same thing. It also allows for a degree of version control, and supplies (if available) rich metadata including exact geospatial co-ordinates of the recording position. This complex information leads to the need for policy decisions about the implementation, registration and maintenance of the UMID within, for instance, a broadcast organisation. The USID is simpler. If an institution is only holding wave files and not editing them into new, related versions, then complexities of UMID/USID implementation and maintenance can be dispensed with, and the identifying information received in the **OriginatorReference** field (USID) or in the reserved area (UMID) can be treated as a barcode, and just logged as a unique code.

Extra information related to the BWF

Two further areas of information have been developed by the P/AFT committee. These are extra 'chunks', so they are separate metadata from the original BWF. This means that applications requiring this extra information can be written, without requiring applications that deal with the 'core' information to be re-written in any way. The first 'chunk' is information on peak **levels** in the data file, which simply speeds up the processing by an audio editor so that it can properly scale its display without first reading the entire file. The second 'chunk' – **quality** – is related to preservation / digitisation, and records information gathered during the analogue to digital conversion process. This information may be vital to future efforts to enhance archive signals, and is also essential for documenting the details of the conversion process and any problems encountered.

There is also a requirement to deal with structure within an audio file, for instance, edit points and other internal organisation. This work has been identified by the AES, and they have produced standard AES31-3 to cover this requirement.

Further developments

The main virtue of the BWF is simplicity. It does not attempt to do everything, and so it succeeds. However there are other areas of broadcasting and other audio production that need more than the BWF can supply. Two main areas are multi-track audio, and audio work-in-progress. There are currently four proposals for extending the capabilities of the BWF – these are all posted on the BWF website (URL below).

The four proposals are:

Commissioning chunk: additional information about origination, with potential high significance for rights management.

Multichannel audio: this proposal will define a format for carrying multichannel PCM audio signals in BWF files, together with an information chunk.

Film Chunk: this chunk is intended for audio files used in film production. The development is being lead by the AES.

Playout chunk: this chunk is intended to allow data needed for automatic playout systems to be included in BWF files. The development is being lead by the AES.

More Information

The field definitions (in *How it works*, above) are direct quotes from T-3285. For the full description of BWF and a very helpful user guide, consult the EBU public website: http://www.ebu.ch/pmc_bwf_ug.html

That page give links to two excellent articles covering the details and the use of the BWF: R. Chalmers. *The Broadcast Wave Format - an introduction* (EBU Technical Department), L. Jonsson. *The use of BWF files in Swedish Radio* (Swedish Broadcasting Corporation)

The future of the BWF

The BWF is metadata embedded in a file with audio. As such it is cataloguing information contained in the artefact. As digital technology develops, the distinction between artefacts and catalogues is increasingly blurred – and their relationship is increasingly complex.

It has been proposed to standardise audio archive metadata, and put it into the BWF. Another EBU panel (P/FRA = Future Radio Archives) has looked into this issue, and found problems with both parts of the proposition. Standardising any metadata is difficult. There is an apocryphal quote going around standards circles: "Aren't standards wonderful! There are so many to choose from!" Certainly regarding broadcast metadata there are indeed many to choose from:

- An EBU panel specifically set up for metadata: P/META
- EBU and SMPTE jointly working on embedded metadata
- The SMPTE metadata dictionary
- MPEG-7 for media metadata
- A BBC proposal for standardised metadata: SMEF = Standard Media Exchange Framework
- IASA and FIAT standard attribute lists
- Web-based proposals gaining widespread acceptance, notably Dublin Core
- Advanced proposals for using metadata for knowledge management, specifically the World Wide Web consortium's RDF (Resource Description Framework)
- The widespread acceptance of XML as a *lingua franca* on the Web – and its own metadata structure, specifically XML schemas
- And at least a dozen more serious and potentially significant standards in the archive world

The EBU panel P/FRA is working on a version of Dublin Core, and hoping to also align this proposal with the EBU P/META attribute list (based on SMEF) – which is itself meant to align with the SMPTE metadata dictionary (or force it to expand to align with P/META). The result of the P/FRA work will be a metadata recommendation, which we hope to also agree with AES and SMPTE, and with IASA and FIAT if possible. However the expected outcome of the P/FRA work will be a recommendation for 'radio archive metadata elements' and their definition, not an addition to the BWF standard specifying holding the metadata with the audio in a new, bigger, better BWF.

The principle reasons for keeping this 'archive' metadata separate from the BWF are:

- some of the data are expected to need frequent revision (circulation; format; version; transmission history; even ownership);
- the data need to be accessible for finding the audio (discovery metadata), which implies a separate catalogue.

It is very likely that the proposed metadata recommendation will include a detailed proposal for implementing the metadata in XML, which may involve developing an XML schema as the last stage of the standardisation activity. The standard will also have to at least look at the issue of RDF, though there is already a documented method (in working draft form) of linking Dublin Core, XML and RDF: *Guidance on expressing the Dublin Core within Resource Description Framework (RDF)* <http://www.ukoln.ac.uk/metadata/resources/dcl/datamodel/WD-dc-rdf/>

The work of P/FRA should be completed during 2001. Work on additions to the BWF standard itself may continue indefinitely, but the essential work was done three years ago, and so BWF should now be viewed as a known, well understood, quite stable, quite simple and very useful format for audio in a broadcasting environment. It has been reasonably well supported by manufacturers, certainly within Europe. The BBC has made a total commitment to the format: 14,000 hours of 'sessions' material on quarter-inch tape have already been transferred to BWF (held on DVD), and this figure will be increased by an additional 300,000 hours over the next ten years. Interestingly, now that we have finished the sessions material, we are transcribing our vinyl disc recordings (BBC material, not commercial material) to BWF. So some of our oldest material is now on the newest format – ahead of the bulk of the quarter-inch tape!

Prioritising for migration to digital formats in television archives

Catherine Lacken, Südwestrundfunk, Germany

Paper presented at the IASA-SEAPAVAA Conference, Singapore, 2000

I'm going to talk about the television archives of a public service broadcaster in Germany – Südwestrundfunk (SWR) in Stuttgart.

The situation we addressed was what to do with one-inch tapes that have been declared obsolete. We are not ready for the definitive digital solution, so we are talking about an intermediate step on the way to a mass storage system for video archives. The one-inch tapes are mainly broadcast masters of the television station's productions from 1954 to 1990: the present broadcast format at SWR Stuttgart is D5, an uncompressed digital tape format from Panasonic. In Germany there is no legal deposit legislation covering television broadcasts. Although the German Broadcast Archive has information on TV production it does not have any actual material. Preservation of this part of the nation's audiovisual heritage is therefore left up to the broadcasters themselves.

Most of the material held in our television archive is unique: it does not exist elsewhere, although any production can be held on various formats - broadcast tape, original production format and access tape such as Beta SP or VHS. De-selection was not an issue in the past: until now the archive has accepted and kept everything produced by the company on an indefinite basis. We had the money and facilities.

Short-sighted decisions in the past, for example erasing black-and-white productions after the advent of colour television, or not recording live transmissions, led to a very cautious policy on de-selection as experience seemed to show that it was difficult to determine future requirements from the perspective of the present.

The situation that confronts us today is different: public service broadcasting is suffering from financial cutbacks, very fast technological development places additional financial pressures on the broadcaster and there has been a vast increase in output (more channels to fill and many of these new channels broadcasting 24 hours a day). All this has major implications for the archives. It is time to re-think our policies because it is too expensive to transfer everything onto the latest digital format.

We have to prioritise and to select what to migrate to digital format and to leave that which we cannot afford to digitise on an analogue format. Selection and de-selection criteria are required that reflect the archive's mandate. In our case that mandate is long-term preservation and the provision of short- and long-term access.

The factors that influence prioritisation of transfer to a digital format relate, on the one hand, to the *content* of the production and, on the other hand, to the *status and physical condition of the carrier* on which it is held.

Content as a selection criterion

In FESAD, the database we use, there is a classification field which allows all programmes to be classified according to content and presentation form. These fields are filled out by the cataloguer when the items enter the archive.

The content category is a list of broad subject headings and a maximum of two of these must be attributed to all catalogued programmes. The list includes: architecture, education, society, culture, art, medicine, politics, religion, technology, entertainment, economics, regional interest, leisure time, communication, literature, music, law, sports, environment, transport, science, news.

A presentation form must also be assigned to each programme and these include: documentary, magazine, spot, discussion, interview, lecture, concert, cinema feature film, television feature film, experimental film, show, live coverage, mixed presentation form, talk show, speech, commentary, drama, feature film, documentary drama, animated film, cabaret.

In the database there is also a field which allows the '*archival worthiness*' of collection items to be valued on a scale from 1 to 9:

- 1 = material of little archival value
- 2,3,4 = material of limited archival value
- 5 = material of considerable archival value
- 6,7,8 = material of special-AV archival value
- 9 = material of great archival value.

This field is also filled out when the material enters the archive. It is the cataloguer's evaluation of the production's intrinsic cultural and artistic value, but also of its value for production purposes; the higher the expected user demand, the higher the archival worthiness will be.

Therefore some guidelines for allocating priority for transferring to a digital format with regard to content are:

- high priority to all home-produced programmes with a rating of 5 or higher on the archival worthiness scale where the presentation form is documentary, television feature or drama or any of the typical high-budget productions and all other presentation forms with a high ranking on the archival worthiness scale;

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- material with a rating of less than 5 should be earmarked for copying to Beta SP, the company's current access format, where access demands are anticipated (very often there is high short/term demand for footage from news and current affairs programmes which may not be prioritised for long-term preservation);
 - below 5 means potential de-selection at some future date; therefore no need to transfer to newer format;
 - material for which broadcasting rights exist for only a limited period should be de-selected or destroyed once those rights have expired. A typical example would be feature films produced for the cinema.

Physical carrier as a selection criterion

The first step is to analyse the physical condition of the one-inch tapes. In Stuttgart we were lucky because so far no major visible deterioration has been registered. As well as random sampling we also check any tapes which are requested before they leave the archive. We do not hold any Agfa-brand tapes which were badly affected by the so-called "sticky shed" syndrome. We have three categories for physical condition:

- 1 good condition;
- 2 tapes considered to be at risk because of age or brand, or because of expected wear and tear during to frequent use (statistics on movement and retrievable from our database);
- 3 tapes that show signs of deterioration, visible (powder on surface) or invisible (technical faults that are only be detectable during replay).

When a tape is monitored any information about its condition is entered into the database. In addition to the physical condition, tapes are grouped into various categories according to their status. By status I mean whether the tape is an original or a copy, and if a copy, whether the original still exists and what generation of copy. The categories we have are:

- copies of original film productions;
- copies of two-inch master broadcast tapes, where the two-inch was an original recording (i.e. the one-inch is a second-generation copy);
- copies of two-inch master broadcast tapes, where the two-inch tapes were copies of film or other material (i.e. the one-inch tape is a third or higher generation copy);
- original broadcast masters of productions for which the original no longer exists;
- recordings of live events or studio productions (= original copy);
- copies of one-inch broadcast masters or one-inch tapes of another status;
- material recorded off-air or acquired from other external sources for inclusion in magazine or other programmes.

High selection priority should be given to:

- original broadcast masters on one-inch tape where no higher quality format exists;
- one-inch tape copies of original recordings: as the original recording no longer exists, the one-inch tape is the preservation copy;
- live recordings of high archival value.

Medium priority should be allocated to:

- live recordings where the 'archival worthiness' is between 5 and 7
- one-inch tapes where the original production format was film and is still too expensive to copy on a large scale from film to D5 (ideally this should be the case, but at the moment this is only done when the one-inch tape is in poor condition).

Low priority or items for de-selection are:

- copies of one-inch broadcast masters;
- material recorded off-air and included in new productions catalogued in the archive's database.

Application of the selection criteria

Once the criteria for selection/de-selection have been agreed, a matrix should be drawn up to include both the content and carrier criteria. This matrix provides a useful selection tool. Tapes which are labelled 'high priority' in both sections are granted 'highest priority' status. Where highest priority items are in poor physical condition then they come into an 'urgent' category.

Conclusions

Although this study relates to the development of a strategy for transferring one-inch tapes to D5 in the specific context of conditions at the broadcaster SWR in Stuttgart, there are some general conclusions to be drawn for the management of migration strategies by broadcast archives.

Drawing up very detailed selection criteria and applying them to the items in a collection is time-consuming, but nevertheless it is to be strongly recommended. It results in transparency and the benefits are long-term. These selection criteria can be applied to all future migration actions. And there will be a need to select again even when a mass storage system video becomes a viable option: what should be held on-line, near on-line or offline? The resulting transparency also encourages more cost-conscious management and this is what is called for in these days where resources and means are limited.

Expectations and realities: challenges to research archives

Grace Koch, Archives Manager, Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra, Australia.

Paper presented at the IASA-SEAPAAYA Conference, Singapore, 2000

I speak from the viewpoint of an archivist managing sound recordings, photographs, videos and films that concern the Indigenous people of Australia who are both subjects of the media and, in many cases, creators of the media. My institution, the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS), is a research institute that is part of the Australian Commonwealth Government Public Service. In turn, the archive is only part of the Institute and must share funds with other programs and units, such as the library, the research section, and publications.

As of this year, I will have worked in this archive for twenty-five years and have seen many changes in how we have collected, preserved and disseminated our holdings. These changes have been in response to technical developments, political pressures, shifting organisational priorities, and legislative changes:

- *technical developments* include varying formats of carriers, digitisation, and the Internet;
- *political pressures* come from groups of Indigenous people who want access to and copies of audiovisual documents, especially those that were made long ago;
- *shifting organisational priorities* mean that we must spend more time with paperwork and the requirements of bureaucracy, especially since we became part of the Australian Commonwealth Public Service in 1989. Such a move has meant that our small organisation must comply with rules and regulations designed for much larger government agencies;
- *legislative changes*, particularly in the area of copyright, mean that we must recognise the holders of intellectual property rights in audiovisual material as well as depositors and recordists.

I would like to outline four crucial issues that present challenges to small archives with examples of how we are trying to achieve workable solutions:

- (1) increased cuts to funding, yet maintaining and expanding services;
- (2) pressure to disseminate, yet ensuring respect for the wishes of owners of intellectual property rights;
- (3) need to add to the collection, yet having fewer funds for acquisitions;
- (4) publicising the work of the archives, yet coping with increased demand and fewer staff.

The first issue has a direct bearing on the others and is well understood by all archivists.

Increased cuts to funding, yet maintaining and expanding services

Staff exchange

If fewer staff must deal with more and varied work, then they must be trained to make the best of it. We have found staff exchange with larger institutions to be of great benefit. This trains our employees and provided a varied work environment for the visiting employees.

One example of a most successful exchange was a programme developed between our institution and ScreenSound Australia. Our film collection needed basic technical work to be done, and we had no staff member with the requisite skills due to changes in personnel. For one month, our audio technician worked with film conservators at ScreenSound, learning the basics of film handling and winding techniques while working on their collections. The next month, his trainer came to our archive, and the two assessed, cleaned, and prepared a number of films for telecine transfer. Salaries remained constant with each institution paying its employees. Our audio technician gained a new and much needed skill for our archive work. Their film conservator expressed great delight in helping us to develop procedures for future maintenance of our collections as well as in broadening her experience with ethnographic film.

Teams

Another strategy we have used to cope with financial cuts has been to create project teams to complete specific tasks. Our Program, Archives and Production department has four Units: Archives, Publications, Access and Special Projects. Staffs from Units other than Archives have served on a roster system to achieve a specific goal, which is preparation of the Archive for a move to a new building by January of next year.

An example: after a basic orientation, Program-wide staff assessed, listed, numbered, measured and, if necessary, re-canned over 10,000 cans of film. Staff allocated one morning or afternoon per week and worked in groups of two. They enjoyed wearing white coats and gloves, and assumed a new identity for that time each week!

Teams have also created CD-ROM compilations of interrelated photographs, sound recordings and videos.

Grants and external funding

There is much pressure on archives to become self-funding. Large institutions can begin to achieve this goal by creating publications based upon archival material. Although we have issued some recordings, films and videos, our publications can only contribute in a small way to the running costs of the archive.

We have been assembling lists of grant-giving and other funding bodies who could contribute towards maintaining our holdings. This exercise can require very creative thinking and knowledge of how our collections can qualify for such funding. We need to be ever aware of current events and how our collections can fit in with political areas of concern. For example, recent publicity has been given to the importance of maintaining languages as a major part of cultural identity within Australia. Just recently, we successfully applied for a large government grant to help us employ a linguist on a fixed term to catalogue and make finding aids for tapes of Indigenous Australian languages that are dying out.

Pressure to disseminate holdings, yet ensuring respect for the wishes of the owners of intellectual property rights.

The Internet has given international publicity to archives, and many people now want copies of our holdings; however, we hold a substantial number of recordings, films and photographs that have cultural restrictions. In Aboriginal society, some of the material may only be seen by one gender or by people with a particular initiatory status. Also, copyright provisions may not protect the material in a way that takes cultural laws into effect, such as group ownership. To address some of these issues, my institution and the Aboriginal and Torres Strait Islander Commission jointly sponsored a study into gathering and collating Indigenous opinions about laws and policies that affect their cultural and intellectual property rights.

Once material is on the Internet, it is very difficult to control who can get hold of it and for what purpose. Here are two ways that show how we are trying to ensure that the wishes of the traditional owners of the information are protected.

Lodgement forms

Forms guiding conditions of access and copying are amongst the most important working documents for any audiovisual archive. These give us legally binding instructions as to how to handle our collections. My Institute has had a series of different forms and has taken years to get the wording right.

Our lodgement forms include a section stating how the Indigenous people who have rights to the intellectual content are willing to let the material be used. If there is content of a restricted nature, directions for clearance within the community from which it came are included. People lodging material with us are expected to have negotiated these issues with the relevant Indigenous people. If there are too many restrictions, then we may choose not to accept the material.

Decentralisation

Regional centres can ease the burden of dissemination. They get the material closer to the people who most often request copies and, in many cases, can help in cultural revitalisation. We have a Community Access Program that helps Indigenous people come to our institute, locate material from their area and obtain copies. These visitors have also helped us to identify

the names of people in photographs and videos and the voices of people on recordings. Also, when they experience the joy of, for example, seeing images of their relatives, they often think about depositing some of their own material. This leads to the next point.

Need to add to the collection, yet having fewer funds for ordering

Limited funding focuses collection development and policy like nothing else can. My institution is fortunate to receive material from grantees that have been funded by its Research Program, but we also seek important collections from other sources. In addition, we try to, maintain a representative sample of published audiovisual material. The following strategies have been helpful to us.

Incentives

People need to know how important their photographs, recordings, films and videos are, and that archives can preserve them for the benefit of society. Part of the work of an archive should be to get this message across to others. Videos highlighting the collections and an outreach programme can bring valuable material to the archive.

Our Community Access Program helps participants to locate our holdings from their area and in so doing, see the value of preserving their own material and making it available to others. We have obtained a number of collections this way.

One Government programme that has helped many archives is the Tax Incentive for the Arts scheme. Donors wishing to leave their collections to an institution may receive a major tax credit based upon the value of the material deposited.

Unique material

My institution has found that it must concentrate on collecting unique audiovisual materials. In our case, these are field recordings, videos and photographs. It would be too onerous to collect large amounts of published videos, for example, when other collecting institutions, such as the National Library, receive large amounts of these by legal deposit or by their collecting brief. Within Australia, institutions are working together to try to avoid needless duplication of holdings.

Exchange and cooperation

In this time of funding cuts, archives need to be creative in developing collections. Expertise in various subject areas can be a very tradable commodity. For example, in exchange for copies of historic recordings, we have been able to provide documentation for Indigenous materials. The ALB (recently renamed SLBA) in Stockholm recently sent us a CD copy of recordings made in 1911 by a Swedish traveller, Yngve Laurell, of Aboriginal people in North West Australia. We played the recordings to two Aboriginal women from that area who provided some documentation, and we are in the process of getting more information for both of our institutions.

Exchange of material and knowledge leads to the next issue concerned with publicity for the archive and its work.

Publicising the work of the archives, yet coping with increased demand and fewer staff

I believe the key to solving this dilemma is in creating realistic policies and goals that have the support of management.

Goals

Our archive encourages donations of collections, and tries to educate the general public about the value of the archives. Also, if the public face of an archive is intriguing and inspiring, then good people will be attracted to work there.

Catalogues and cataloguing systems

The archive must be logically organised to enable the user to do most of the work in accessing the collections. As we all know, catalogues are in great demand on the Internet. The format should be logical and easy to use. Procedures for ordering copies need to be set up for client use.

Although an in-house system can be created to give the most efficient results, it can be very expensive in its development phase. Alternatively, an off-the-shelf system may be more economical at first and may include most features required, but once an archive is locked into the 'culture' of such a system, upgrades may change some of the very features that were attractive initially. For example, my institution uses both Macintosh and PCs for workstations. The off-the shelf system we purchased made a business decision to do away with its Macintosh compatibility. As a result, we had to purchase PC emulation software to run subsequent upgrades.

Presentations

The very nature of audiovisual collections adapts beautifully to computerised presentations on Power Point and other modes of presentations. If we have a number of presentations about our collections to show visitors, then time spent on tours and explanations can be cut down considerably.

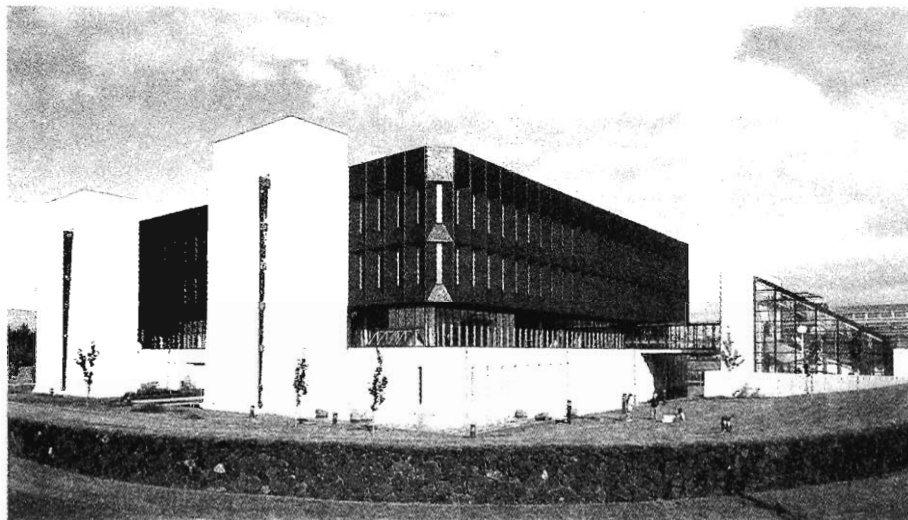
For example, we have created two CD-ROM projects, both of which present highlights of our collections from two geographical areas of Australia. These can be used in our library with little, if any, explanation and can entertain for hours. Also, dedicated projects can be put on the Internet for external use.

In conclusion, archivists need to be flexible without compromising standards, creative in practical ways, and ever mindful of the care entrusted to us in preserving, documenting and disseminating our priceless audiovisual cultural heritage material.

The Audio-visual department of the National and University Library of Iceland: the first five years

Anna Jensdóttir, Chief of the Audio-visual Department, National and University of Iceland

Iceland is a country with a population of about 280,000 people. The National and University library is in the capital Reykjavík which lies in the south-west area of the country where almost two thirds of the population live.



The National and University Library of Iceland

History – background

The Audio-visual department of the National and University Library of Iceland is a recently established department. It came into being at the same time as the new National and University Library of Iceland that resulted from the merger between the old National Library and the former Library of the University of Iceland. It was opened in a new building in the University area of Reykjavík on December 1st, 1994. The building's four floors and basement cover a total of 13,000 m² and have a capacity for 900,000 volumes plus seating for 700 visitors.

As the name indicates, the library functions both as a national library (acquiring material through legal deposit) and a university library. The combined library houses about 840,000 volumes, 2,500 serials, 10,000 sound recordings, and 2,500 videotapes. The law on legal deposit covers sound recordings since 1977, while legal deposit on printed material in Iceland dates back to 1886. But it was only when the AV-department was established on the new premises almost twenty years later that the collection became available for use. The

only access before that was through the annual Bibliography of Icelandic Sound Recordings which has been published by the National Library since 1979.

Purpose

The AV-department is a national sound archive of published material and an AV-department serving the University community.

The purpose of the AV-department is therefore twofold:

- (1) To preserve and make available for research all material pertaining to Icelandic music and musicians through permitting use of the sound recording collection and other documents related to Icelandic musical life
- (2) To permit use of the audio-visual collection material mostly connected to studies at the University of Iceland.

Thus the AV-department serves both researchers and the University community and is open to the public as well.

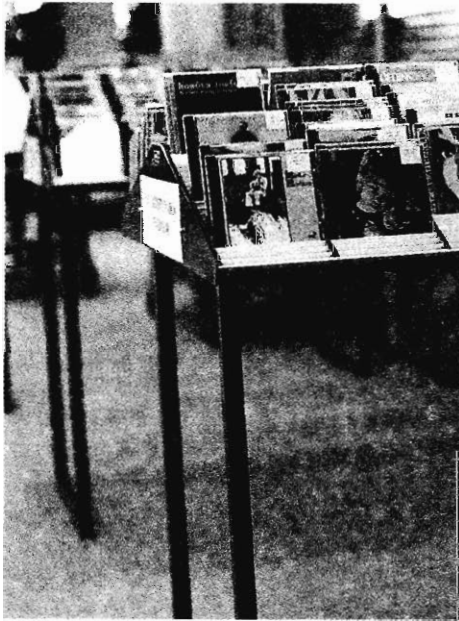
Collections: sound recordings – legal deposit collection

The Icelandic sound recordings (on CD, disc, audio-cassette, and audio book format) are the most important part of the collection. They have been acquired through legal deposit since 1977 but considerable holdings were acquired from earlier times as well.

Legal deposit claims three copies of each title. One item is sent to the Municipal Library of Akureyri (Iceland's second biggest town in the north of the country) and the other two go to the National and University Library. The first item is preserved for the future and the second one is for use in the AV-department. The annual release of sound recordings in Iceland is now around 200 items a year. For those interested in the history of Icelandic sound recordings the first release of Icelandic music dates back to 1907. In order to cover the musical heritage we also try to buy all sound recordings published abroad with works of Icelandic composers or where Icelandic musicians perform (*Islandica*). All in all the legal deposit items amount to about 4,500.

Foreign sound recordings

There have been two collections of foreign LPs and CDs donated to the library. Among them is a fine collection of old gramophone records (mostly 78s) of operatic music and a donation of CDs from the Austrian State containing the music of Austrian and German composers. Normally we do not acquire foreign CDs but last year, in memory of Johann Sebastian Bach, we did buy all his works since we have got scores of all his music as well. The foreign CDs are normally not for loan but for listening on the premises. Estimated holdings of foreign sound recordings are about 6,000.



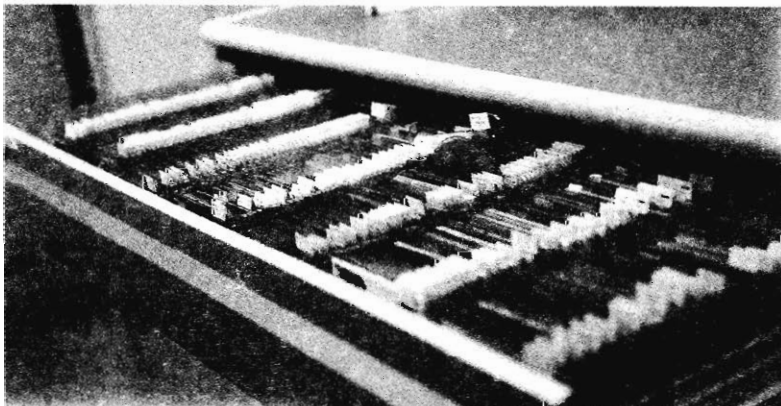
CDs on display in the AV-department



From the AV-department



Playback equipment in the AV-department



Boxes for CDs in the AV-department

Material relating to music

Sheet music

This includes scores published in Iceland as well as a collection of foreign scores. They are for loan with the exception of the collected works of the old masters, Bach, Beethoven etc. Catalogued musical scores are approx. 3000 while a considerable part of the collection has not yet been documented.

An ephemera collection on Icelandic musical life is under preparation.

Newspaper cuttings on musical life in Iceland published monthly since 1982. A reference library on music both foreign and Icelandic.

Video recordings

Legal deposit in Iceland does not yet cover published video recordings but is expected to be extended to this format in the awaited new legislation on legal deposit.

The video collection consists of educational material as well as a collection of classic films. We hold approximately 2500 video recordings. All can be loaned out except for the films.

Access to the collections

The sound recordings are catalogued in accordance with the Anglo-American Cataloguing Rules and the IFLA standard, ISBD (NBM).

So far, unfortunately, only a part of the legal deposit collection of sound recordings is available through our catalogue. This catalogue uses the GEGNIR database <http://www.bok.hi.is/>. The part that is on-line dates from around 1990, but an annual bibliography of Icelandic sound recordings has been published since 1979, as has been mentioned above. The old collections of gramophone recordings have not been catalogued at all.

The videotapes are all catalogued in the library system as well as the scores.

Technical equipment - Statistics

The department is well-equipped technically. There is a playback installation with 10 players for CDs, 5 players for audio cassettes, 2 players for DAT, 1 player for gramophone records, 1 DVD player and 9 players for video recordings. There are facilities for listening and viewing for 18 concurrent persons as well as a small reading room and a listening room for groups. Copies can be made from sound recordings and CDs to audio cassettes and DAT tapes if permitted by copyright.

In 2000 some 2546 persons borrowed video recordings and 919 persons viewed videos on

the premises; 968 persons listened to sound recordings on the premises, 640 borrowed musical sheets and 416 borrowed audio books and cassettes.

Staff – Services

So far the staff consists of just one trained librarian but the Cataloguing department takes care of the cataloguing of the legal deposit collection. Reference services increase every year both from those who visit us or phone and not least through E-mail both from Icelanders and from abroad. Our visitor profile ranges from students at the University and the Reykjavik College of Music to the public and those doing music research.

Membership of professional associations

The AV-department is a member of both IAML and IASA and has started to participate in the IASA Nordic Branch as we do not yet have an Icelandic National Branch. It is very important for an institution like ours, in a small country like Iceland, to acquire knowledge from similar related institutions abroad by attending professional conferences and it has indeed turned out to be a useful and pleasant experience.

Future prospects

We await new legislation on legal deposit which will most likely claim one item of published video recordings for the AV-department. Thus the AV-department will presumably soon be a combined national archive of published sound and video recordings. A new library system will soon be implemented. That will improve all our services as well as the new and improved library's home page <http://www.bok.hi.is/> which is under construction. Top priority in the near future is further retrospective cataloguing of the collection but that will only happen when the staff numbers increase.

In conclusion

Musical life in Iceland has been growing rapidly at all levels in the last decades, stimulated by the increasing emphasis placed on musical education in numerous music schools all around the country. The centre of musical activity is in the capital Reykjavik with the Reykjavik College of Music, the Icelandic Symphony Orchestra, The Icelandic Opera and numerous musical events. So far the tradition of music libraries in Iceland is limited though many public libraries have quite good music collections and the situation is gradually improving.

The National Department of the National and University Library keeps all published material in Iceland and its Manuscript Department houses manuscripts, diaries, letters, etc. of many Icelandic composers and musicians. Therefore the Audio-visual department, with well-documented collections, serves a very important role in supporting Icelandic music research and the preservation of Iceland's musical heritage.

'I sing the body electric' – Music and Technology in the 20th Century - Hans-Joachim Braun (Editor): Hofheim: Wolke Verlag, 2000. – 254 pp., ISBN 3-923997-85-X

This book mostly contains the proceedings of a symposium organised by ICOHTEC (International Committee for the History of Technology) in 1996 (1). The book contains so much about the generation of music, its recording, and the influence of recording on musical life, that it should become compulsory reading for sound archivists. The book contains a secondary strand: the inspiration of composers by technology, which provides an interesting and useful cultural backdrop.

The introduction by the editor *Hans-Joachim Braun* is an overview of the field, partly building on the various contributions to the book. Some statements are provocative:

“From the perspective of information technology, the player piano decodes what already exists, but does not alter or process the information”

whereas in reality, the sound that emanates is as much dependent on the design of the replay machine as is the sound coming from an old radiogram. The discussion on electronic music concentrates on what happened in the United States and thereby neglects European endeavours such as Daphne Oram's *oramics* (the gentle art of tape editing of electronically generated sound) and the Dutch work in the late 1950s (Henk Badings (2)). The list of more than 100 references itself makes essential reading, yet omits the work of Hermann Scherchen at Gravesano and tape editing innovations in the 1960s such as George Martin's *With A Little Help From My Friends*.

Geoffrey Hindley, in *Keyboards, Crankshafts, and Communication: the Musical Mindset of Western Technology* deals with keyboard instruments and organs in particular and considers a technology aesthetic particular to Western music. However, he does not include the Moor duplex coupler pianos of the 1920s.

Hugh Davies, in *Electronic Instruments: Classifications and Mechanisms* quotes the classifications of Curt Sachs and (later) Francis Galpin and attempts to squeeze electronic instruments into this form. Classification is a structuring of knowledge based on the idea that a single tree structure may uniquely identify any phenomenon. This went out of vogue in the 1950s, at least in Information Science. The proposed classification does not entirely work for the electronic instruments described, as a few examples may illustrate (3). It is unreasonable to equate the result of a hand-cranked generator to that of a low-frequency oscillator – only the latter displays a self-controlled frequency of oscillation, and the hand-cranked generator is merely a read-out device for the waveform incorporated in the magnetic poles. Moreover, Davies does not distinguish between tone generation at a frequency or a harmonic thereof and the generation of a beat-frequency (heterodyne) in which the varying frequency has absolutely no harmonic relation to the desired tone. However, for creating awareness of this entire field it is a very comprehensive contribution, with a good list of references.

Tatsuya Kobayashi provides an interesting historical perspective on the world's largest manufacturing country for musical instruments in *It all began with a broken organ – the role of Yamaha in Japan's music development*.

In *The Social Construction of the Synthesizer* Trevor Pinch and Frank Trocco have looked at the time when the synthesizer changed from being a fixed laboratory installation to becoming transportable. It is a very vividly written paper, although it is cast in Social Construction of Technology (SCOT) terms, currently fashionable in the history of technology. The authors have interviewed the major US players in the field, Robert Moog (pronounced 'moag') and Donald Buchla who had different approaches and different clients.

My Soul Is In The Machine – Conlon Nancarrow – Composer for Player Piano – Precursor of Computer Music is the account by a German proponent of Nancarrow's, Jürgen Hocker. This ex-patriate American composer was able to maintain full control from conception to execution of his music by preparing it on piano rolls, meticulously hand-punched with as many notes in a chord and as fast a speed of reproduction as he wanted, because the human hand was not involved. The account is personal, because the author was able to participate in a number of European live performances with the composer. However, music analyses of a number of Nancarrow's works must be found elsewhere (4), and the last part of the title is not covered at all.

Barbara Barthelmes treats the use of city noises in an installation art type of music in *Music and The City*. She describes her fascination with representing the spirit of cities in music and provides a useful discussion of the connotations of the term 'soundscape'.

The editor returns strongly with *'Moving On': Airplanes and Locomotives in 20th Century Music*. A number of examples of programme music are given as well as jazz compositions. However, Braun's description of the creation of Samuel Barber's *Second symphony* suffers from the use of secondary sources, because reference is made to the use of 100 *acoustic* discs for a tone generator; more likely the construction used 100 *optical* soundtracks. However, rather than using an outlandish instrument, Barber went back to traditional instrumentation for sound effects by means of an E-flat clarinet. Although Braun does mention that much of the technology-related music was for film soundtracks, he does not cover the reception of the music as such on its own terms, but again, the discussion is supplemented by a most useful list of references.

The reception of modern music is dealt with in Karin Bijsterveld's *A Servile Imitation: Disputes About Machines in Music, 1910-1930*, which is not about recorded music. By studying contemporary journals she lets Luigi Russolo (co-founder of the Italian Futurist movement), Piet Mondriaan (otherwise known as a painter), and George Antheil (US composer-provocateur) speak about their expectations and intentions. We are not told why precisely these persons were chosen, but my guess is that their texts were plentiful and suitably argumentative. Finally, Hans Stuckenschmidt's early warnings about the abolition of live

human performance are introduced – they have been corroborated of late by Norman Lebrecht in *When The Music Stops*.

Sound Microscopy and Music in the 20th Century: A Survey with Special Reference to Hungary, by Istvan Pintér, provides a somewhat uneven overview of the field, but it shows that there has always been a particular Hungarian way of solving fundamental problems. There are, nevertheless, a number of factual errors: the patent number of the Kay Elemetrics Sonagraph refers to the analogue (1949), not digital version, and Fig. 4 shows the principle of a VoiceWriter, not a Sonagraph. However, in just ten lines Pintér creates a vivid image of what 16 bit, 44.1 kHz resolution really means. The list of references, in this instance, cannot be regarded as a homogeneous reading list.

From Polka to Punk: Growth of an Independent Recording Studio, 1934-1977 is a vivid account by Susan Schmidt Horning, based on numerous interviews with entrepreneurs in Cleveland, Ohio. Reading this kind of account one realises that there were probably thousands of similar entrepreneurs world-wide, all serving their local community and almost all going out of business as equipment became more expensive and sophisticated. However, we have to live with their output, and it was huge.

Alexander Magoun has worked himself deeply into the archives of RCA-Victor which have fortuitously survived, and presents *The Origins of the 45-RPM Record at RCA Victor, 1939-48*. To a reader with my background this paper is pure joy. It is highly technical and historical, and provides an insight into decision-making in a high-technology business. And the author is successful in his attempt to prove that the 45-rpm record was not just developed to reinforce RCA Victor's fortunes when CBS produced the LP.

Tape Recording and Music Making by Andre Millard is a good account of the introduction of tape recording techniques in both recording and distribution. Just like Roland Gelatt's *The Fabulous Phonograph* the paper conveys a lot of truth but not much documentation.

Musicians and the Sound Revolution: Business, Labor, and Technology in America, 1890-1950 by James P. Kraft describes the use of the theoretical framework of labour history as applied to the working situation of musicians (in the US). The development carries a memento for AV archivists: with automatisisation there will be less need for skilled persons, because most tasks may be carried out by robots.

In a way, the paper by Mark Katz, *Aesthetics Out of Exigency: Violin Vibrato and the Phonograph* is the most provocative paper in the whole collection. (Readers who attended the IASA Conference in Vienna in 1999 will be familiar with this paper – Ed.). The reason is that it intends to make us change our perception of the history of violin vibrato, but it does so using a barrage of questionable sources and with reference to irrelevant places in the good sources. Katz tries to prove that because a recorded violinist was not visible as a performer, it caused him to increase the use of expressive vibrato, which would also overcome the background

noise of early records. The questionable sources are all CD re-issues of recordings by certain famous violinists, in other words mostly undocumented secondary sources (7). We are not informed about the methodology, but it must be considered unfettered positivism (8). This is saddening. A lot of work has gone into this paper, but there are serious flaws in documentation and arguments. To me, at least, the move to increased vibrato is simply to be found in the French school of violin playing, which turned out to be the surviving tradition.

Reversing the Reverse Salient in Electric Guitar Technology: Noise, The Solid Body and Jimi Hendrix, by Rebecca McSwain uses another of the theoretical approaches in vogue in the history of technology: that of the Reverse Salient. We are given a good introduction to the field, including some critical remarks, good use of patent literature and good technical explanations (9), e.g. the use of acoustic feedback in the creation of sustain effects on-stage.

In *Soundsampling: An Aesthetic Challenge*, Helga de La Motte-Haber discusses sound samples as elements in music making. It appears to be an abbreviated work, and for this reason the analyses never reach a conclusion, which could explain why sampling is an aesthetic challenge. The author makes some provocative statements, such as:

“Walter Benjamin’s essay of 1936 *The Work of Art in the Age of Technical Reproduction* became particularly influential”.

It was not influential during his lifetime, but from the 1950s and beyond – on *our* generation’s thinking (10).

Where the previous paper discussed the phenomenon of sampling, *New Technology – New Artistic Genres: Changes in the Concept and Aesthetics of Music* by Martha Brech is a general presentation of the development of electronic music, not only the creation of the various types of electronic music, but also its reception. And the account takes us through the magic of recent development, not just the beginnings.

Musical Education and the New Media: The Current Situation and Perspectives for the Future by Bernd Enders puts into perspective the influence of digital technology (distribution of masses of organised data on CD-ROM, interactivity, the World Wide Web) on cultural life in general. He presents five conjectures concerning the transformation of cultural life, but there is no focus on music education that the title promises. It is a thought-provoking paper that requests that persons involved in musical life shall not be afraid of the new technologies.

All things considered, bearing in mind my comments above and the notes below, the book is absolutely recommended. There is nothing about recording and reproduction of speech, but that should not deter curators of the spoken word. Be prepared to spend a few weeks working through it.

notes

- 1) The title has been previously used by Braun for an article in *Carman* about the influence of electro-acoustics and electronics on music making in the 20th century (*Technikgeschichte* Vol. 61 (1994), no. 4).
- 2) For instance described in "Electronic Music" by H. Badings & J.W. de Bruyn, *Philips Technical Review* (vol. 19, no. 6, pp. 191-201, with record, December 1957). Also one misses a reference to the early and very perceptive book by Carlos Chavez *Toward a New Music. Music and Electricity*, Norton & Co., New York 1937.
- 3) Davies uses the terms 'electronic instruments', 'electromechanical instruments', and 'electro-acoustic instruments', whereas I would propose that the proper terms, based on the fundamental physical principles involved, should be 'electronic oscillation' (referring to positive feedback and so-called limit cycles), 'readout of stored waveform' (which not only covers tone-wheels and the like, but also digital wave table readout), and 'transport and amplification' (which differs from 'electronic oscillation' in that there is no absolute requirement for continuous power input to the tone-determining element). And, in the electric guitar, it is an important effect to be able to create a sustained note by direct acoustic feedback to a particular string; from then on the string becomes the frequency-determining element in positive feedback with a limit cycle (an 'electronic oscillation instrument'), whereas it started out as the passive and dissipative resonant element in a 'transport and amplification' instrument.
- 4) A good way in to Nancarrow's music may be found in Philip Carlsen's dissertation *The Player-Piano Music of Conlon Nancarrow: An Analysis of Selected Studies*, I.S.A.M. Monographs: Number 26, New York 1988 (not mentioned in the references).
- 5) *Spitfire Prelude and Fugue* by William Walton (1942) goes unmentioned. It was created for a film, but was also published on gramophone records and thereby received wider circulation.
- 6) Ludwig is not mentioned as pre-dating Léon Scott de Martinville in standard textbooks on the art of registration, and in this paper we find only a secondary source. I would refer to my own *An Evaluation of Early Use of Sound Recordings In the Analysis of Performance Practice and in Phonetics*, Internationaler Musikwissenschaftlicher Kongress zum Mozartjahr 1991 Baden-Wien. Bericht, Ed. Ingrid Fuchs, Bd.II, Tutzing 1993, pp. 505-514, which covers much of the same ground.
- 7) In contrast, Robert Philip (*Early Recordings and Musical Style*, Cambridge, 1992) had access to original recordings and did not attempt such revolutionary conclusions.
- 8) The deplorable general lack of source criticism when working with sound documents was already pointed out by me in a letter to the IASA Editor *Phonographic Bulletin* no. 30, pp. 45-49 (July, 1981). In the present instance, comparison of the high frequency response of acoustic recordings cannot be done without calibrated transfers of the originals, and there is no indication that this has been done. The bibliography is very good in its own right, but some sources are not used the way they could, e.g. Lochner's *Fritz Kreisler* (1950) is used to prove that Kreisler toured internationally (pp. 56-74), but the part which is relevant to the problem at hand has not been identified: (p.19) "I believe Massart liked me because I played in the style of Wieniawski. You will recall that Wieniewski intensified the vibrato and brought it to heights never before achieved, so that it became known as the 'French vibrato'. Vieuxtemps also took it up, and after him Eugène Ysaÿe, who became its greatest exponent, and I. Joseph Joachim, for instance, disdained it." And again on p. 367, Lochner quotes from a book by Carl Flesch not relied on by Katz: "The use of the *vibrato* during passages, mainly introduced by Kreisler, signifies one of the most important achievements of modern violinistic art. . . . Certain it is that the vibrato . . . is already valued as one of the indispensable parts of contemporary playing. . . ." (Carl Flesch *Problems of Tone Production*, 1931 and 1934). The violinist Joseph Szigei is also able to contribute (*With Strings Attached. Reminiscences and Reflections*, Cassell & Co., London 1949 - not referenced by Katz) because he places modern violin playing (i.e. 1920s and 1940s) in perspective.

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- 9) However, there is no explanation of 'hum-buckers', a term included in the Index and in the mention of the Slingerland Songster electric guitar. A hum-bucker is a coil which picks up just as much hum as the proper guitar string pickup, but nothing else. The signal from the hum-bucker is fed in reverse to the input, and thus the mains hum from the pickup coil is eliminated.
- 10) The author appreciates that film sound presented the first real possibility for sound editing, however one wonders, when she makes reference to Walter Ruttmann's work, if she does not mean *Die tönende Welle*, a pure sound track recording without images (1921, screened 1928) rather than *Weekend*. Also, it is not mentioned that *Berlin – Symphony of a City* is basically a silent movie.

George Brock-Nannestad

Trémine, René: Hermann Scherchen. A discography (French – English). - Compiled by (...) with the assistance of Myriam Scherchen. Bezons: Tahra Productions, 1999. 64 pp., 4 pp. illus., 21 x 15 cm, no ISBN (stapled).

Sold in conjunction with 2 CD-set of Mahler's 3rd Symphony with the Wiener Symphoniker conducted by Hermann Scherchen and recorded 31 October 1950 (Tahra:TAH 338/39).

"The aim of this discography is to list everything Scherchen recorded for various commercial labels."

This statement is only half of the truth as this catalogue also lists in alphabetical order by composer broadcast productions that were later issued on commercial discs. Not included are details of the perhaps most curious of Scherchen's recordings, namely the disc *Garden Party* with an *ad hoc* jazz ensemble called Hermann Scherchen Gravesano Band playing Broadway melodies like *Honeysuckle Rose*, *The man I love*, and *Frenesi* (The Record Society: SKRS 11). Attempts have been made to establish the recording date of each performance, but there are many gaps. In the case of several recordings, brief comments have been added that refer to discographic aspects or to issues of performance practice.

The discography proper is preceded by a brief essay (in French and English) on the recording activities of Scherchen and an appraisal by Humphrey Searle written in 1957. In addition, the brochure has 16 colour illustrations of LP record sleeves plus a pair of contemporary advertisements. Far from being a fully accomplished task, this is a useful publication for all interested in the recorded output by this conductor.

Martin Elste

Pandora's Drums - transfers from cylinders by Joe Pengelly.

Available from Pandora's Drums, Electronics World, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS, United Kingdom. Price £11.99 each including VAT; carriage £1.50 per order in U.K. or £3.00 overseas.

This is a compact disc with 21 tracks, published by the British magazine *Electronics World* late last year. It carries a rather curious collection of cylinder records. More than half of them are dated 1913; but overall they range from 1900 to 1929. Virtually all are commercial moulded cylinders, but there are two conspicuous exceptions I shall describe later.

Thinking laterally, one wonders why a magazine called *Electronics World* should publish a recital of cylinder records. Only *one* seems to have had electronic amplification when it was made (in fact, the CD forms an excellent recital of what could be achieved without electronic amplification). But the motivation, according to the publishers, is the "modern electronic technology by historian Joe Pengelly".

This comprises a novel cylinder player, which started from a working prototype assembled by Joe Pengelly. As a result of a Leverhulme research grant, this was developed into a machine for playing all types of cylinders by Mike Stringer of Plymouth University. An excellent technical description was published in the October 2000 edition of *Electronics World* (pp. 768 - 770); but it is only fair to report that Joe Pengelly's ideas have proved controversial among collectors.

Meaningful debate has been clouded by unreasoning prejudice. Personally, I cannot see that it matters whether the cylinder traverses under a fixed pickup, or whether the cylinder stays in the same place and the pickup traverses. Both techniques can be engineered to achieve equal results, given equal engineering skills. Rather more controversial is that Joe Pengelly uses a pickup mounted on a conventional pivoted tone-arm, of the type normally used for playing disc records. The cylinder player Ole Tobias developed at the National Library of Norway also works this way. Ole Tobias moves the pickup pivot, Joe Pengelly moves the cylinder; so again these are comparable when things are properly engineered.

However, a problem can arise whenever a cylinder is not completely concentric, so the playing-surface may rise and fall faster than the arm can follow it (at a normal playing-speed, anyway). One approach (in the British Library's machine) is to use low-inertia mountings tuned to a frequency above the rotational speed of any feasible cylinder, so the cylinder is usually in control; and when it is not (for example, when an oval cylinder means two bumps per revolution), half-speed playback is an option. Joe Pengelly's machine uses the opposite technique. It has ultra-linear electronics, so the high voltage-swings which result from eccentric cylinders do not cause any overloads. The voltages are removed by a very sophisticated electronic filter (15-pole Butterworth with a -3dB point at 160Hz). This is a well-chosen frequency, almost exactly what I would have selected myself for acoustically-recorded cylinders.

Normally I would consider this too conservative for *electrically*-recorded ones. Such cylinders were transferred from electrically-mastered Edison Diamond discs from the autumn of 1927. Although the resulting cylinders sold in comparatively small numbers, Edison remained loyal to owners of cylinder players until the stock-market crash of 1929. I myself possess one of the very first published electrically-recorded Edison Diamond discs (the Schumann *Piano Quintet*), and this has a bass-line reaching much lower than 160Hz. But when I checked my facts for the purposes of this review, it became apparent that whenever electric Diamond Discs were transferred to Blue Amberol cylinders, a considerable bass cut was applied. (It is easy to think of a mechanism which would achieve this). The CD has two cylinders attributed to the year 1929, but they sound like acoustic ones. (In fact, I think *Doin' the Raccoon* actually is acoustic).

But I am not libelling Joe when I say I am sure he uses the same tricks as the rest of us, patching bits of paper under the cylinder to improve the concentricity. At any rate, his craftsmanship has resulted in some very acceptable listening. Now to the subject-matter.

Here, I am afraid, I must be somewhat more harsh upon Joe. With all analogue media, quality depends critically upon what you start with, and Joe has a large collection from which he has picked the best. He admits, for example, that (with one exception) he has not used any conventional wax or moulded cylinders, only celluloid ones (by which he mainly means Blue Amberols). To this extent, his work is not like the work of archivists, who have to cope with anything, regardless of its condition.

The two extraordinary tracks are as follows. The first is called *Polka Des English's*, sung by an unknown artist. It is a French comic song about Englishmen, from a Lioret cylinder attributed to the year 1900 which plays for three and a half minutes. The second is a giant Edison Kinetophone cylinder carrying the soundtrack for an Edison film *The Ohio Minstrel - 2nd Part*". It seems to be an example of a film shot synchronously (using an acoustic recording machine next to the camera) rather than one filmed to playback. Although the sound volumes are not as well-managed as in a dedicated sound-recording session, clearly Edison had developed an audio recording-system with greater sensitivity than most of his rivals. However, the CD shows volume-changes to reduce this effect, and it is a great pity that the inlay-card does not say whether the film survives. Dates are given in the form of a plain year, but by and large I have been unable to verify them. How much of this is due to Joe, and how much to his publisher, I cannot say. (The latter claims: *Unique and atmospheric music recorded in the early 1900s - the days before 78s*, which is just incorrect).

But to conclude, I can confidently say this. Any archive that wants to demonstrate the sound quality of popular music cylinders and how they sold themselves by attracting audiences, must obtain a copy of this CD.

Peter Copeland, *The British Library National Sound Archive*

Real accents: UK regional and overseas - 2 CDs, produced by Janet Howd & Peter Layton.- London: Capriccio Press, 2001.- ISBN 0951483536. Available also by post from Drama Studio London, 1, Grange Road, London W5 5QN. Price GBP15.95

With memories of Dick Van Dyke's cockney accent in the film musical *Mary Poppins* still uncomfortably fresh in British minds, Renee Zellwegger's perfect Home Counties English diction in *Bridget Jones' Diary* came as some surprise. It seems that at last Hollywood actors can do British accents – at least they can after intensive personal voice coaching by Barbara Berkley. But for the less exalted in the profession the options for learning a dialect or accent are few and for the most part unsatisfactory, so the appearance of a CD set called **Real Accents** should be welcome news for actors.

Short of a complete recitation of the text that they are working on in the appropriate accent, it is actually quite hard to imagine what sort of recording would be useful to an actor. *Real Accents* offers three set texts, first performed in Received Pronunciation and then read by British and foreign "speakers who are not only native to each area but who are also trained actors". The producers of this double CD suggest a method of learning the accents which seems to involve plotting the variations in vowel and consonant pronunciation against an RP template. I don't know of a precedent for this technique and there may be shining examples of its successful application, but frankly I'm sceptical. It would seem to involve the retention of such an enormous amount of non-verbal information and the development of such a complex mechanism of translation that any performance so informed would lack any spontaneity or confidence.

Methodology aside, there are rather more serious problems with *Real Accents*. By using set texts it dispenses with the idiomatic syntax and vocabulary which truly distinguishes regional dialect. Conversely, the two contemporary texts by Janet Howd use idioms that are far from universal: "half baked", "daft" and "mate" sound oddly from Scottish mouths. More obviously, the selection of speakers is hardly exemplary. With two thirds of the Scottish population living in Strathclyde it is a little perverse to represent the country with speakers from Aberdeen and Stirling. As a town with which I am acquainted, the Stirling accent exemplifies another problem with this selection. While they may speak like that in Kings Park they certainly don't on the Raploch estate. Like anywhere in Britain, class is an audible component in every voice – not that you would know it from this CD. By using actors, the producers of *Real Accents* restrict their sample to – I suspect – a largely middle-class population.

I think that *Real Accents* is of little interest to a general listenership and falls between too many stools to offer much in the way of help to actors. To them I would recommend The University of Kansas' "IDEA" (International Dialects of English Archive), whose website <http://www.ku.edu/~idea/index2.html> offers hundreds of examples of recorded speech identified by location, age and occupation of speaker. It's not ideal but it's cheaper than Barbara Berkely.

Toby Oakes, *The British Library National Sound Archive*

Absent from the last issue, the charts are back, this time with a Presidential seal.

We have a tradition that members of our Executive Board write a piece for the *Journal* exploring their own personal tastes as reflected in recorded sound. It is now the turn of your current President to share with you his own selection. The challenges posed by this task are obvious. With a limited amount of space it is necessary to be brutally selective and reductive. Then one has to consider the criteria by which one selects. Does one consider material on its intrinsic merit, or on its personal associations? As audiovisual specialists, are we judging by the quality, by some other aspect of the recording, or are we looking at the significance of the underlying artistic work? All of these questions are necessary and reasonable, but I have to admit that they can easily become an excuse for avoiding the hard choices that have to be made when reducing 51 years of aural experience to ten items representative of my personal taste. In the end, my approach to this task was completely unscientific, ignoring the analytical criteria mentioned above, and instead going through my own collection of records and CDs, making up a 'long list' of 30 favourite items and then reducing it to a shortlist of 10 (11 in fact – it proved impossible to exclude the final item!).

I have a modest background in amateur musicianship; as a child I learned to play the flute, sang in the local church choir, and today I sing for my local choral society. It has been my good fortune to travel, and so a degree of exposure to a variety of musical traditions has also influenced my taste. But it is the circumstances in which we hear things that gives particular music a special personal resonance, and I suppose that this is really the basis for my selection.

First on my list is William Byrd's setting of the anthem *Ave verum corpus* from the Latin Mass. The simple but beautiful polyphony reflects the richness of English choral music that continued during and beyond the turbulent period of the English Reformation. My next item, in stark contrast to the solemnity and profound significance of the Byrd, is the exuberant and joyful Mozart B flat major Serenade for Wind Band, especially the final movement *Allegro molto - Rondo*. When hearing this played well, it is impossible not to share the performers' evident enjoyment of this splendidly various work. I first became familiar with this with the help of my parents' record player, when I was 17. Around about the same time I had my first encounter with Beethoven's last piano sonata, Op. 111. I found myself sitting in a hall looking at the score of the first movement printed in an examination paper – my task was to write a formal analysis. I hadn't previously heard this music but its dramatic intensity was palpable from the score, even to that student. I have since listened to many different performances, my own preference would be for the recording made in 1970 by Alfred Brendel. (I passed the exam).

My fourth choice is of a song from Schumann's *Dichterliebe*. One doesn't need an extensive knowledge of German to appreciate the sheer beauty of the language of Heine's poetry in these settings. I would choose *Ich hab' im Traum geweinet* perhaps a little heavy on romantic poignancy, and reflecting a rather pessimistic view of life, but such strong and beautiful music. It would be difficult to image a greater contrast with my fifth choice, which is some noisy and exuberant folk music from South China *Cha-san xin-ge* (tea mountain new song) on Art-Tune COL-3163.

Next, a really seminal recording! It seems to me that the popular pastime of karaoke (where otherwise uninspiring voices are treated to a process of electronic flattery) must have been conceived by someone listening to the track *All the things you are*, from the album *The best of Sellers*. Don't we all just love to sing in the bath? Here is Peter Sellers in 1958, reminding us how good we can all sound in a steamy bathroom acoustic.

Having been a teenager in the 1960s I had to decide whether I liked the music of The Rolling Stones or The Beatles. Well, I still own all of the Beatles LPs and maintain the equipment at home so that I can play them. The track *Let it be*, from the album *Let it be* speaks with such beautiful music in terms of quietude and reconciliation: a completely appropriate postscript, in 1970 to that memorable decade.

Sometimes we hear a melody that sticks in our mind, not just for a day or two, but for years. One such tune I heard in 1973 in Istanbul. Top of the charts that year was *Sende söyle* sung by the local artiste Nilüfer (CBS 1937) and I can hear it as I write. Two other popular music tracks from the 70s provide my ninth and tenth selections. The song *I'm not in love*, from the album *The original soundtrack* by the band 10cc connects me to the period just before I became a father for the first time, while the enchanting voice of Linda Lewis singing gently lyrical words of love in *May you never* (on Arista ARTY 109) was something rather special for me in 1975.

I said at the beginning that I had to include an eleventh item. This was the magnificent and inspirational Gloria Gaynor singing *I will survive*. Just listen to it!

Crispin Jewitt
May 2001

IASA JOURNAL 1 – 15, 1993 – 2000

Index & Contents List

Compiled by Magdalena Cséve, Hungarian Radio

Introduction

This index covers the fifteen issues of the *IASA Journal* published between the years 1993-2000. The structure of the Index is the same as the previous Index of the *Phonographic Bulletin* compiled and published in 1993.

The Index includes an alphabetical listing of authors together with other names referred to in the *Journal*. Subject headings are taken from the titles and contents of the articles. The number following each index entry indicates the Journal volume. This is followed in brackets () by the page numbers where the reference is to be found.

In order to make the Index more informative a List of Contents of the *IASA Journal* includes the major articles referred to in the Index together with the starting and ending page number of the article.

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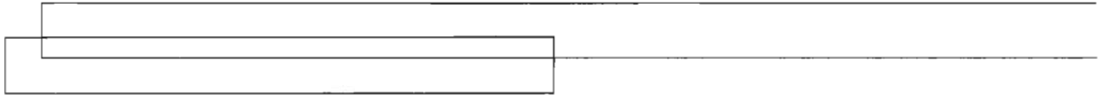
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The final date for copy of the next issue, Number 18, to be published in December 2001 is

15 November 2001

