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Internationale Vereinigung der Schall- und Audiovisuellen Archive

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EDITORIAL

The theme of this year's Annual Conference in Paris conference is to be 'access', specifically how to improve access in response to the challenges of new media technology. Access is, or certainly should be, associated with what people want and librarians usually refer to this kind of issue as "user needs" (sometimes "customer care" in our service-driven era). Correspondingly, an understanding of what people want should inform the selection of acquisitions and the prioritisation of documentation. It may even be a factor in the selection of items for preservation. So, all things considered, we may end up talking about all the usual IASA themes in Paris. It will certainly be interesting to see what the speakers have to say as several member institutions prepare to embrace the concept of the 'digital archive' and become massively digital rather than remain massively analogue. Naturally, you can expect a representative selection of conference papers on this theme to appear in the next Journal but here are some forethoughts that were triggered by the articles and reviews appearing in the present issue.

Taking access to mean primarily an aspect of public service, I have often wondered what it is that we are trying all the time to improve and precisely what the expectations are of new technology in this area. For although it looks certain that the ways in which information providers, such as libraries and archives, conduct their business are bound to change before long, the business itself of connecting people to information will remain much the same. So are we talking about quantitative improvements - increasing people's choice and the speed with which we connect them to information - or qualitative improvements - improving the value of the information itself or the quality of the service that provides it?

You will find in this particular issue a number of ideas and views which could stimulate more debate about access and selection. After all the words in praise of digitisation it is refreshing to find provocative views put forward, as in Frank Rainer Huck's paper *Der 'ewige' Datensatz* (The eternal data file). Take a considered look also at the review by Noel Sidebottom of two extraordinary releases on the Irdial label which draw attention to the evident futility of an all-inclusive, unmediated view of selection. Also ask yourself when you read the current round of "Board Charts" (you see, there was a serious purpose behind this feature): will members of the IASA Board in a hundred years time (excepting those who will have continued from the present day) describe with equivalent relish and enthusiasm their discovery of revelatory sounds and moving images in a digital mass storage system?

The parts of the process of connecting people to information that I believe are particularly enriching are precisely those parts that the mechanised digital archive will

render unnecessary. When Sinatra died last month, one of the pleasures of re-visiting his recordings was to be able to pick up some of the old LP sleeves and gaze at iconography from the 1950s and 1960s. Even more pleasurable was the exploration of a limited edition reissue of all his Reprise recordings on CD contained in a brass-embossed leather carrying case (Reprise: 9362-46013-2). So we may lose these tactile sensations, redolent with nostalgia. Is this an improvement?

We may also lose the informed intermediary, the member of staff, who drew our attention to these items in the first place. When the U.K.'s National Sound Archive (NSA) moved to its new premises last year the focal point of contact with its users was diminished. There was no room in the new British Library for its popular visitor's centre which provided an ideal meeting point for curatorial staff with researchers. There are many compensations in the new building (not least the stylish surroundings, the exhibition galleries, the service in the cafeteria) but people who use the NSA regularly are left in no doubt that it is now the corporate entity that sets the terms.

One such term is the discouragement of telephone-based services in the reading rooms. The NSA does most of its business by phone so in order not to inflame readers with the intermittent exclamations of joy and disbelief that are a common feature of working with audio-visual material we spread the job of answering telephone enquiries to all NSA staff on a daily rota and they do this while seated at their own desks.

The number of enquiries received by telephone averages between thirty and forty per day. The range of subject matter covered by a day's calls is often astonishing and occasionally calls into question what the NSA does and how. Anticipating the Paris Conference, I find I am also inclined to ask myself after each duty, how we *would* the NSA do it at some future date when resources permitted it to be massively digital.

For instance, how would a mechanised archive deal with a request (one that I actually received last week) for an instrumental version of "When Irish eyes are smiling" suitable to play at the funeral of the enquirer's mother? NSA holds more than one hundred recorded versions of this popular anthem. The enquirer and I went through each one, most of which were glaringly inappropriate, and after a short period of shared assessment we almost forgot the solemn purpose behind the enquiry: Primo Scala's Accordion Band ("she never liked the accordion"), Tom Jenkins and his Palm Court Orchestra ("probably too prim"), Jimmy Shand and his Band (hmmm...), Firehouse Five Plus Two ("rather roisterous, wouldn't you think?"), Liberace ("a bit flashy"), The Blues and Royals Band ("pompous?"), Crazy Otto ("Do you think that appropriate?"), Reginald Dixon ("in Blackpool? No, she wasn't fond of the seaside"), James Last or Victor Silvester ("We'll come back to them"), Pat Jennings, Joe Kinnear

and Mike England with members of the Tottenham Hotspur Football Team ("Would that be a vocal? Anyway she supported Liverpool"), The Big Ben Banjo Band ("What do you call a thousand banjos at the bottom of the sea? A start."), The Rodney Foster Jazzmen ("Rodney who?")... in the end I recommended James Last with wordless chorus which he could still go out and buy in the shops.

(In case you're thinking that the NSA normally deals with this kind of enquiry - music supplied for all occasions - I'll tell you that on either side of that call were requests for the voices of white farmers from Alabama and advice on how to make underwater recordings of sea fish. Don't tempt me).

So, assuming that an archive has digitised all one-hundred-plus versions of *When Irish eyes are smiling* and made them available on-line to the world, what contextual parameters will be included to assist access? Automatic selectors in radio stations are programmed to recognise tempo and mood and the NSA recently heard about a jukebox that classified its selections by likely emotional response (only positive responses were admissible) but these facilities are crude compared to an informed dialogue with expert curators.

It seems to me that you cannot invest in technological improvements without a similar investment in staff who manage and operate them. This was one of the main conclusions of a paper, similar to Frank Rainer Huck's in this *Journal*, which was presented by Terry Kuny and Gary Cleveland at the 1996 IFLA Conference in Beijing. Entitled "The digital library; myths and challenges" (it has subsequently appeared in modified version in *IFLA Journal* 24 (1998) pp.107-113) its central message is that "computers only manipulate numbers - it is people that connect them to meaning [and] provide context to users". My own article, in this *Journal*, "Audio-visual resource discovery on the Web" includes a description of a new model for connecting people to information involving the concept of a "broker layer", a mediator between resource and presentation. This in itself is likely to be a technological component but it will have been designed to replicate the interpretive role of the human intermediary as far as possible. Time will tell.

Furthermore, in order to retain some of the features admired in our present services, digital archives will need to incorporate imaginative interfaces and presentational ideas and could be expected to replicate versions of the very products that were digitised in the first place. Might not the everlasting digital archive be regarded as a source of new physical items produced cheaply on demand in whatever format? At least one IASA member, the composer Karlheinz Stockhausen, has embraced this idea, making accessible a constant catalogue of all his compositions on CD 'dubbed' from digital masters (the original studio masters, note, not someone else's products based on

them) in his own studios. Since he owns all the rights there are no legal barriers to his business but how would the recording industry regard the production of one-off discs, tapes or files by a globalised network of digital archives? Would it be any different if the items that were digitised were from studio masters rather than the mass-produced derivatives? Are we certain that the recording industry is not about to do this kind of thing already? We will probably not know until such services are launched and when they are, sound archivists may find their business confined to unpublished recordings accessed by specialist minorities and a diminishing range of published recordings overlooked or discounted by the industry and perhaps best forgotten anyway.

Different institutions in different countries will have other opinions, I am sure. That is part of the richness of IASA and so I am delighted to present two newcomers to the *Journal*, Margarida Estanyol from the Fonoteca de la Biblioteca de Catalunya in Barcelona and Graciela Dacosta from the University School of Librarianship in Montevideo. I will be looking for more contributions from newcomers, particularly from Africa and the Middle East to include in the next issue.

**IASA Journal is constantly looking for material to publish:
articles, reviews, reports of meetings or new developments.**

Please send anything which you consider to be of interest to IASA
to the Editor at the address on the front inside cover.

Please send copy on PC floppy disk in ASCII format or Word for Windows
version 2 or version 6 or simply as text in an e-mail.

If this is not possible, then good quality hard copy, **double spaced** will do.
If possible, include abstracts (maximum 250 words each)
in French, German or English.

Because the IASA Conference in Paris
will be held much later in the year than usual,
the final date for copy of the next issue, Number 12,
to be published in December 1998 is
31 November 1998.

PRESIDENT'S LETTER

The Round Table on Audiovisual Records is an annual meeting with representatives of Non Governmental Organisations (NGO's) in the field of audiovisual archiving. The NGO's involved are the International Federation of Library Associations and Institutions (IFLA), the International Council on Archives (ICA), the International Federation of Television Archives (FIAT/IFTA), the International Federation of Film Archives (FIAF) and of course IASA.

This year the Round Table took place in London in March. It was hosted by FIAT and chaired by the FIAT President, Tedd Johansen. IASA was represented by the President and the Secretary General. One issue on the agenda was the future of the Technical Co-ordinating Committee (TCC) which has been acting as a subcommittee of the Round Table. FIAT and FIAF wanted to find new ways of co-operation and the outcome of a rather lengthy discussion was that the TCC was dissolved.

One of the major tasks of the TCC has been to organise Joint Technical Symposia and I am certain that all of us who have had an opportunity to participate agree that they have been very successful and useful events. Let me take this opportunity to express my thanks on behalf of the Association to George Boston, a well known IASA member, who has chaired the TCC with dedication, skill and enthusiasm!

It is my firm belief that co-operation between all AV-archive organisations, and especially between IASA, FIAF and FIAT, is needed now more than ever and I hope that the dissolution of the TCC does not prevent future co-operation, especially in the technical field.

In late April, the Board met in Paris in the new National Library of France. As reported earlier, the present Board intends to make the organisation of IASA more efficient and professional. We have therefore prepared some constitutional changes concerning the committee structure and voting rights. The proposals are now to be finalised and they will be sent out to all members in the middle of the summer, in due time for a lively discussion at the coming General Assembly.

Two publications have been produced this year: a new Information Leaflet and a new edition of the Membership Directory. The Leaflet, which is indeed an important tool for recruitment activities, has been professionally designed by experts from the British Library and has a modern and appealing look. My warmest thanks to the National Sound Archive and its Director Crispin Jewitt who very generously supported the production of the Leaflet.

Just before the Board meeting in Paris, the IASA Technical Committee (TC) in conjunction with the General Information Programme of UNESCO organised a *Consultation of Audio Archivists and Manufacturers of Analogue Magnetic Tape Recorders*. The aim of the consultation was to discuss how archivists and manufacturers of tape recorders could work together “to achieve an orderly withdrawal of support for the quarter-inch tape format”. I attended the meeting representing the ALB, and my impression is that it was very successful in bringing the manufacturers and the archivists closer together. Again, the TC has showed what kind of initiatives that IASA as a professional international organisation could and should take.

Finally, the next annual conference will take place in November in the new and imposing building of the National Library of France in Paris. When I write this letter the invitation and the preliminary programme are just about to be sent out and I must say that it looks really promising. The theme of the conference is: “Improving access to sound and audiovisual collections: how to respond to the challenges of new media technology?”. Under this umbrella there will be a lot of interesting papers and you will also have an excellent opportunity to get to know better the world of audiovisual archives in France. So, please don’t forget to register!

I look forward to seeing you in Paris in November,

Sven Allerstrand

ARTICLES

Digital Mass Storage Systems in Radio Sound Archives: a rising tendency?

Per Holst, Danish Radio, Copenhagen.

Paper given at the IASA Annual Conference, Sultanate of Oman, 1997

This paper is a short presentation based on the results of a survey carried out by the Radio Sound Archives Committee concerning radio sound archives within IASA.

The decision to make this survey was taken during the 1995 IASA Conference in Washington by the Radio Sound Archives Committee. The intention was to collect basic facts about the various archives and information about the plans for implementation of digital mass storage systems.

A questionnaire was circulated in the beginning of 1996 and the response rate was about 50%, corresponding to 21 radio sound archives.

In order to facilitate the flow of information between the archives it was also decided at the 1996 Conference to re-circulate this questionnaire regularly. This means that the members each year are requested to send updated information to the Committee officers. The information is transferred into a computer and a print-out of all the questionnaires or "Information Form", as we now call this paper, are sent to the archives.

I will briefly summarise the replies.

Regarding original sound carriers, the number of analogue tapes and discs held in radio sound archives amounts to 6,949,000 with an estimated duration of 3,070,000 hours. As for digital tapes and discs, the number is 724,00 with an estimated duration of 596,000 hours.

The archives were also asked to report on the origin of their collections:

- 69% of the holdings are own recordings
- 20% of the holdings are purchased records
- 11% of the holding are samples delivered by the phonographic industry

Regarding exploitation of the collections, 95% of the holdings are used for transmission, production and research purposes, while the remaining 5% are for lending or for sale.

Nineteen archives report that they use database systems for documentation and cataloguing. It appears from some of the replies that older parts of the collections are not yet registered in a database, but in conventional card cataloguing systems.

Concerning measures of quality control and safeguarding various precautions are mentioned in the replies, such as temperature and humidity control, fire prevention measures and control and transfer of old tapes to new ones. At least two archives transfer recordings on DAT as a first step towards a digital transfer to a mass store system.

With regard to selection almost all archives report that they have a selection policy. Some of the respondents state a specific percentage of what is selected. The percentage varies between 5 and 15%. It is often mentioned that the programme makers and the producers take part in the selection process.

The replies to the question: "when do the archives expect to introduce mass storage systems", confirm the title of this paper that mass storage systems are a rising tendency:

- 2 archives have already implemented such systems.
- 16 archives report that they plan to make use of mass store systems within a few years.
- 3 archives report that they have no actual plans for implementation of mass store systems.

It should be mentioned that an interesting co-operation between a broadcasting archive and a national sound library has been established. In Norway the Norwegian Radio and the National Library are working on a common project for preservation of the historical collection in the Norwegian radio, based on a mass storage solution. In this way it might be easier to raise the necessary funds for such a project if the historical recordings become accessible both to the public and to the broadcasting station.

Finally the archives were asked to report if they are planning to transfer the whole or only a part of their collections to a mass store:

- 2 archives report that they are planning to transfer the whole collection;
- 8 archives that they are going to transfer only a part of the collections;
- 8 archives have not yet made any decisions;
- 3 archives have no plans for transfer.

There is of course a problem that it will probably be impossible to transfer everything to the digital domain due to the costs involved in such a project. Consequently a large proportion of tape collections will have to remain on the shelves and a careful selection is therefore crucial. It is very important to stress the significance radio sound archives have in programme production in order to convince the managers of broadcasting companies that they ought to support implementation of mass store systems. In order to comply with the needs of the programme producers the archives have to be able to deliver the necessary sound material in the best and fastest possible way and according to the result of this survey the majority of the archives seem to have accepted that implementation of mass storage systems is the only way to achieve this goal.

**Der 'ewige Datensatz' oder:
Löst Digitalisierung wirklich alle Archivprobleme?¹**
Frank Rainer Huck, Saarbrücken

In einem sehr lesenswerten Aufsatz mit dem Titel "Ensuring the Longevity of Digital Documents" (Das Sichern der Langlebigkeit digitaler Dokumente), erschienen im Januarheft 1995 der Zeitschrift *Scientific American* (2), entwirft der amerikanische Computerspezialist Jeff Rothenberg folgendes Szenario (3):

Im Jahr 2045 finden Kinder auf dem Dachboden ihres Hauses im Nachlaß ihres Großvaters einen Brief aus dem Jahr 1995 und eine CD-ROM. In dem Brief steht, daß die CD-ROM ein Dokument enthält, das den Schlüssel zur Erlangung der Erbschaft ihres Großvaters liefert. Die Kinder sind begreiflicherweise begeistert und aufgeregt, denn sie haben noch nie eine CD gesehen, außer in alten Filmen. Selbst wenn es ihnen nun gelänge, noch ein altes CD-Laufwerk zu finden, so hätten sie damit noch längst nicht die Software, die zur Interpretation des CD-ROM-Inhalts nötig wäre. Zum Lesen des Briefes genügte noch immer allein ihre Fähigkeit, überhaupt lesen zu können und darüber hinaus allenfalls noch das Verständnis der Sprache, in der dieser Brief abgefaßt wurde. Aber wie können die Kinder eine CD-ROM, dieses inzwischen völlig veraltete digitale Dokument lesen?

Dieses Szenario enthüllt einige fundamentale Probleme mit digitalen Dokumenten, oder sagen wir allgemeiner: mit digital aufgezeichneten Informationen. Weil digitale Informationen nahezu perfekt kopiert und immer wieder kopiert werden können, werden sie oft wegen ihrer vermuteten Langlebigkeit gepriesen. Im deutschen Sprachraum hat sich, spätestens seit den Tonmeistertagungen in Karlsruhe 1992 und 1994, dafür das Schlagwort vom "ewigen Datensatz" etabliert (4). Die Wahrheit ist jedoch, daß aufgrund des immer schneller werdenden Wandels von Hard- und Software und der damit verbundenen Obsoleszenz der Systeme, einzig der Brief des Großvaters auch nach 50 Jahren noch unmittelbar verständlich bleibt.

Was nützt uns also der "ewige Datensatz", der ja ebenfalls eines Speichermediums bedarf? Eines Speichermediums, daß seinerseits wiederum der Veralterung ausgesetzt ist, nur einer noch wesentlich schnelleren Veralterung als bei allen uns bekannten analogen Informationsträgern. Die heute zur Verfügung stehenden digitalen Speichermedien sind bei weitem anfälliger als beispielsweise gedruckte Informationen auf Papier, und sie bringen damit die gesamte geschichtliche Überlieferung der heutigen Zeit in Gefahr. Das ist im übrigen ein Problem, mit dem sich auch die "klassischen" Archivare zu beschäftigen haben, die sich nach Jahrhunderten relativ gut erhaltener schriftlicher Überlieferung nun einem Dokumententyp gegenübersehen, der

nur noch auf Magnetbändern, Disketten, Festplatten, CDs und ähnlichen digitalen Datenträgern existiert.

Auch wenn digitale Informationen theoretisch von den Spuren der Zeit unangreifbar sein mögen, so sind die physikalischen Träger, auf denen sie gespeichert werden, von der "Ewigkeit" weit entfernt. Digitale Speichermedien werden immer schneller durch neue, häufig nicht kompatible Formate abgelöst. Wer erinnert sich heute überhaupt noch an Floppy Discs im 8-Zoll-Format? Und selbst 5½-Zoll-Disketten können heute nur noch von wenigen PCs mit entsprechenden Laufwerken gelesen werden.

Jeff Rothenberg gibt in seinem Aufsatz einige Beispiele aus der jüngsten amerikanischen Geschichte. Ein Bericht aus dem Repräsentantenhaus des amerikanischen Kongresses vom Jahr 1990 beschreibt, wie buchstäblich in letzter Minute der Verlust von sämtlichen Daten einer US-Volkszählung aus dem Jahr 1960 verhindert werden konnte. Zwar waren die Informationen noch erfolgreich umkopiert worden, aber die Daten wurden auf einem Band gespeichert, das schneller als vorausgesehen veraltete, weil die verwendeten Aufnahmeformate von neueren Formaten verdrängt wurden. Dieses und andere Beispiele haben zu der Forderung geführt, digitale Informationen häufiger und immer schneller umzukopieren, - was natürlich Arbeitsaufwand und vor allem Geld kostet.

Damit aber nicht genug. Digitale Information muß nicht nur - auch nach Jahren noch - fehlerfrei vom jeweiligen Datenträger gelesen werden können, sondern auch korrekt interpretiert werden. Ein digitaler File, ein Bit-Strom der lediglich aus einer Folge von binären Informationen 0 oder 1 besteht, ist kein selbständiges Dokument, sondern er beschreibt nur das Dokument, das in Erscheinung tritt, wenn der File von dem Programm interpretiert wird, das ihn auch geschaffen hat. Dieses Programm versieht den File zusätzlich mit eingebetteten Informationen zur Interpretation. Man nennt das die Encodierungen. Bei textverarbeitenden Files sind dies z.B. Informationen über Textstruktur, Typographie, Layout usw. Ohne das Programm, das ihn zu interpretieren vermag, ist ein File ein Gefangener seiner eigenen Encodierung.

Ein digitaler File in der Form eines Bit-Stromes kann nämlich nahezu alles repräsentieren: eine Folge von Zahlen oder Buchstaben, eine Ton- oder Klangfolge, oder auch die Pixel in einem Bild, um nur einige Möglichkeiten zu nennen. Fehlt das interpretierende Programm, dann ist die Folge von Nullen und Einsen, auch wenn sie ausgelesen werden könnte, eine nutzlose Information.

Es kann auch nicht davon ausgegangen werden, daß die Encodierung eines Dokuments durch zukünftige Software für lange Zeit lesbar bleibt. Ein gutes Beispiel liefert hierzu wieder die Textverarbeitung. Unabhängig von dem gerade benutzten Textverarbeitungsprogramm mit seinen oft wenig kompatiblen Encodierungen könnte ein Dokument, daß in dem verbreiteten 7-bit ASCII-Code gespeichert würde, auch in Zukunft relativ leicht decodierbar sein, wenn es nicht beispielsweise auch 16-bit-Codes gäbe, oder noch andere Aufzeichnungsformate, die dazu tendieren, die bestehenden Formate zu überlagern oder gar zu verdrängen. Das Dokument muß also nicht nur ständig auf neue Datenträger, z.B. von 5½-Zoll-Disketten auf 3½-Zoll-Disketten umkopiert werden, sondern dabei möglichst auch noch konvertiert werden, um weiterhin lesbar und interpretierbar zu bleiben.

Kommen wir aber von den digitalisierten Texten zu den digitalisierten Tönen. Hier lautet die These, es werde in Zukunft nicht den "ewigen Tonträger", sondern nur noch den *ewigen Datensatz* geben. Diese These enthält die zwar verlockende, aber gerade deshalb nicht ungefährliche Forderung, daß Schallarchive - oder wir Schallarchivare - sich in Zukunft eher als Hüter der 'Message' betrachten sollen, statt als Hüter des Mediums. Ich möchte in diesem Zusammenhang auf die jüngst erschienenen Empfehlungen des Technical Committee der IASA verweisen⁵. Dort wird ein ethischer Code, eine ethische Verpflichtung für Archive angesprochen. Sie besteht nach der Formulierung des Technical Committee in der "Verantwortung, unseren Nachfahren so viel an Informationen, die in unseren Beständen enthalten sind, zu überliefern, wie wir mit der uns zur Verfügung stehenden professionellen technischen Umgebung erreichen können" (6). Gemeint ist damit die Überlieferung der inhaltlichen Tonträgerinformationen nach dem jeweils bestmöglichen technischen Standard. Die in unseren Archivbeständen enthaltenen Informationen bestehen aber nicht nur aus Tonsignalen, sondern sie haften auch dem Tonträger selbst an. Ich habe darauf schon 1996 in einer Sitzung auf der Frühjahrstagung der Fachgruppe 7 in München hingewiesen (7). Unsere Tonträger, insbesondere die Zylinder und Schallplatten, enthalten neben der primären Information, dem aufgezeichneten Schallereignis, auch sekundäre Informationen in Form der Texte und Bilder auf der Verpackung oder Plattenhülle, in Begleitheften oder anderen Beilagen. In einer Art tertiärer Information ist diese Aufmachung und Verpackung des Tonträgers wiederum ein Spiegel des Zeitgeistes, der sich z.B. in Label-Gestaltung, Cover-Art, Produktwerbung und ähnlichem manifestiert. In diesem Sinne ist auch der Tonträger selbst, auf dem die historische Stimme, die einmalige Musikaufführung aufgezeichnet ist, ein Kulturgut von nicht zu unterschätzendem Rang, nicht nur das Klangereignis als solches.

Zu dieser Einsicht ist übrigens auch der Printbereich gekommen. Nicht allein der Inhalt, sondern das Buch selbst wird noch immer als unverzichtbar empfunden. Der noch vor wenigen Jahren als rückläufig eingeschätzte Buchmarkt boomt wie nie zuvor, die CD-ROM-Produktion dagegen rechnet sich für die Verlage offenbar nicht. Elektronische Bücher, deren zukünftiger Marktanteil noch vor kurzem auf zwanzig Prozent geschätzt wurde, haben heute einen Umsatzanteil am Buchmarkt von knapp zwei Prozent (8).

Die Forderung, den "ewigen Tonträger" durch den "ewigen Datensatz" zu ersetzen, würde also den Verzicht auf die Überlieferung eines in den letzten hundert Jahren höchst wichtig gewordenen Kulturgutes bedeuten. Das wird auch nicht abgemildert durch die Beteuerung, selbstverständlich habe man daran gedacht, bei einer Digitalisierung solcher Bestände auch sämtliche Begleitinformationen (Plattenhüllen und -texte, Begleithefte etc.) einzuscannen und digital aufzubereiten. All diese technischen Möglichkeiten ersetzen nicht den optischen und taktilen Reiz und damit auch den Informationswert einer alten analogen Schallplatte. Ich glaube, kein einziger Schallplattensammler käme auf den Gedanken, seine Sammlung der Idee vom ewigen Datensatz zu opfern. Und es wäre durchaus auch noch zu fragen, auf welcher Seite sich die "Ewigkeit" denn eher erweist. Lassen Sie mich das eingangs erwähnte Szenario nur dahingehend erweitern, daß die Kinder auf dem Dachboden neben dem Brief ihres Großvaters und der CD-ROM auch noch einen Stapel alter Schellackplatten finden. Auch diese kennen sie möglicherweise nur aus alten Büchern und Filmen. Aber die Wahrscheinlichkeit, in einem Museum noch ein funktionierendes mechanisches Grammophon zu finden und die Platten darauf abspielen zu können ist wesentlich höher, als die Hard- und Software zu finden, die sie zum Abspielen und Lesen der CD-ROM benötigen. Wo bleibt hier der "ewige Datensatz"? Er bleibt auf der Strecke!

Hiermit soll nun keineswegs unterstellt werden, daß die Protagonisten des "ewigen Datensatzes" diese Zusammenhänge mit dem Tonträger als Kulturgut und Sammelobjekt nicht ähnlich sehen und beurteilen. Sie beziehen sich bei ihren Empfehlungen und Forderungen eher auf die unscheinbareren analogen Tonträger wie Tonbandspule und Kassette, die in weitaus geringerem Maße Träger sekundärer und tertiärer Informationen sind und als Sammelobjekt per se daher auch weniger in Frage kommen. Auch zu diesen Tonträgerarten aber erfährt man Unterschiedliches und Widersprüchliches.

Einerseits ist von einer akuten Gefährdung dieser Bestände die Rede, die die sofortige Sicherung auf digitalen Speichermedien notwenig mache. Andererseits hat sich aber der weitaus größte Teil dieser Bestände in den letzten 50 Jahren eigentlich ganz gut gehalten.

Von den frühen Papier- und Azetatbändern und einigen mißglückten Polyester-Bandchargen einmal abgesehen, die in der Tat zunehmend Haltbarkeitsprobleme aufwerfen, sind die im Rundfunk gebräuchlichen $\frac{1}{4}$ -Zoll-Bänder derzeit noch recht stabile Tonträger, die bei sachgemäßer Lagerung durchaus auch noch längere Haltbarkeit versprechen. Wie anders wäre hier wiederum die Empfehlung des Technical Committee der IASA zu verstehen, Sicherheitskopien durchaus auch als Analogkopien auf Polyesterband von ausreichend geprüfter Archivqualität anzufertigen. Begründet wird dies mit den Ungewißheiten, die die derzeit gebräuchlichen digitalen Formate (in erster Linie R-DAT und CD-R) hinsichtlich der Stabilität des Trägermaterials und der zukünftigen Verfügbarkeit von Abspielgeräten bzw. Abspielsondware noch immer mit sich führen (9).

Der Befürchtung, es könne in absehbarer Zeit kein geeignetes Bandmaterial mehr auf den Markt kommen, weil die Firmen ihre Produktion von Magnetband einstellen wollten, ist die IASA bereits selbst mit einem entsprechenden weltweiten Appell an die Produktionsfirmen entgegengetreten. Auch die Befürchtung, es könne bald keine Bandmaschinen zum Abspielen der Bänder mehr geben, scheint derzeit noch unbegründet zu sein. Das Radio Sound Archives Committee der IASA hat gerade erst in einer noch nicht einmal repräsentativen Erhebung bei 21 Rundfunk-Schallarchiven erstaunliche Zahlen ermittelt. Danach sind allein in diesen 21 Schallarchiven mehr als 7 Millionen Tonträger mit einer Gesamtspielzeit von rund 3 Millionen Stunden vorhanden. Selbst wenn man daran geht, diese Bestände sofort und in allen Archiven gleichzeitig auf digitale Speichermedien zu kopieren, so würde dieser Kopiervorgang, der von analog zu digital in Echtzeit verlaufen muß, bei einem Überspielfaktor von 3:1 (niedrig gerechnet) wenigstens 30-40 Jahre dauern! Mindestens für diese Zeitspanne müssen also noch ausreichend Bandmaschinen zur Verfügung stehen, was vermutlich ein Grund für die Industrie sein dürfte, hier einen kleinen Produktionssektor offen zu halten.

Noch während dieses Überspielzeitraums aber werden sich Hardware und Software weiterentwickeln, und es gehört nicht viel Fantasie dazu, sich auszumalen, daß schon vom Beginn dieses Zeitraumes an, spätestens aber nach 1 oder 2 Jahren bereits die ersten digitalisierten Bestände erneut kopiert und den dann veränderten Systemen und Formaten angepaßt werden müssen. Selbst wenn dies automatisiert und in wesentlich kürzerer Zeit geschehen könnte, gäbe es doch eine Lawine von sich ständig vergrößernden Datenbeständen, die zusammen mit den noch umzuspielenden Altbeständen stets von neuem umkopiert und gesichert werden müßten. Da dies nicht nur Zeit, sondern auch Personal und Sachmittel - also vor allem viel Geld kostet, muß wohl auch an eine Selektion der zu digitalisierenden Bestände gedacht werden. Und das wiederum gibt Anlaß zu der Befürchtung, daß die hierfür notwendigen

Selektionskriterien eher von ökonomischen als von kulturellen Überlegungen her bestimmt werden (10).

Aber ob mit oder ohne Selektion: Immer gigantischere Speicherkapazitäten werden gebraucht, die ihrerseits immer ausgeklügeltere Sicherungsmaßnahmen erfordern, denn was passiert, wenn in einen Tera- oder Petabyte-Speicher einmal der Blitz einschlägt?

Ich will dieses Szenario nicht weiter ausmalen, und die Techniker werden ohnehin auf alle Fragen und Probleme bereits eine Antwort parat haben. All diese Antworten vermögen aber nicht darüber hinwegzutäuschen, daß die gepriesene "Ewigkeit" des Datensatzes eine sehr fragwürdige ist. Gerade weil die kommerzielle Lebenszeit der Systeme und Formate immer kürzer und kürzer wird, führt dies zu einer Obsoleszenz der für die Abspielung notwendigen Hard- und Software, während die eigentlichen Träger der digitalen Information noch in einem guten Zustand sein können. Es ist daher eher unwahrscheinlich, und diese Einsicht formuliert auch das Technical Committee der IASA in seinen bereits zitierten Empfehlungen (11), daß derzeitige digitale Tonträgerformate die Lebensdauer von Schallplatten oder $\frac{1}{4}$ -Zoll-Magnetbändern erreichen. Wenn deshalb, auch wegen der möglichen zu erwartenden Verbesserungen bei den Überspielprozessen (z.B. durch höhere Abtastraten) gleichzeitig noch empfohlen wird, die Ursprungstonträger sowie deren Abspiel-Equipment samt erforderlichen Ersatzteilen aufzubewahren, dann zeigt dies eigentlich deutlich, daß dem Tonträger, trotz gegenteiliger Beteuerungen, mehr "Ewigkeit" zugetraut wird als dem Datensatz.

Schallarchivare jedenfalls sollten sich auf ihre Aufgabe besinnen, das ihnen anvertraute kulturelle Erbe der Vergangenheit in Gestalt ihrer Tonträger zu schützen und für die Nachwelt zu bewahren. Vor allem aber sollten sie nicht die ersten sein, die den unbestreitbaren technischen Verlockungen und Versprechungen erliegen und ihre Bestände in Gänze einer ungewissen Zukunft ausliefern. Der unsichtbare Datensatz, angeblich gesichert in alle Ewigkeit, könnte uns sonst dereinst, inzwischen zwar unlesbar geworden, stattdessen wie der Romantitel von James Jones schön leserlich als Menetekel an der Wand erscheinen: "*Verdammt in alle Ewigkeit!*"

Anmerkungen:

1. Leicht überarbeitete Fassung des Referates, das auf der Herbsttagung der IASA-Ländergruppe Deutschland/Deutschschweiz am 1.11.1997 in Basel gehalten wurde. Die Ausführungen fußen wiederum auf einem Diskussionsbeitrag des Autors in der Open Session des Radio Sound Archives Committee (RSAC) während der Konferenz der IASA in Perugia, September 1996, sowie auf einem ähnlichen Beitrag in der Sitzung des RSAC auf der IASA-Konferenz in Oman, Oktober 1997.
2. Jeff Rothenberg: Ensuring the Longevity of Digital Documents. in: *Scientific American*, January 1995, S.24-29.
3. Dieses Szenario hat große Ähnlichkeit mit der Kurzgeschichte "The fun they had" von Isaac Asimov.
4. Dietrich Schüller: Auf dem Wege zum 'ewigen', vollautomatischen Schallarchiv. in: Bericht von der 17. Tonmeistertagung Karlsruhe 1992, München etc.: K.G.Saur, 1993, S.384-391.
Siegbert Herla: Von der Schallarchiv-Rettung zum integrierten Digitalarchiv. in: Bericht von der 18. Tonmeistertagung Karlsruhe 1994, München etc.: K.G.Saur, 1995, S.836-856.
5. International Association of Sound and Audiovisual Archives (IASA), Technical Committee (Hrsg.): *The Safeguarding of the Audio Heritage: Ethics, Principles and Preservation Strategy*. [= Standards, Recommended Practices and Strategies: IASA - TC 03, Version 1, February 1997].
6. a.a.O., S.2.
7. Frank Rainer Huck: Macht Digitalisierung alles einfacher? Anmerkungen zu einer Reihe von Mutmaßungen. in: Eckhard Lange (Hrsg.): *Wer zappelt im Netz, wer knüpft die Fäden? Die Rolle der Medienarchive im modernen Informationsmanagement* [= Beiträge zur Mediendokumentation, Band 4]. Baden-Baden: Nomos, 1997, S.226-229.
8. Zitiert nach: *epd medien*, Nr.80, 15.10.1997.
9. a.a.O., S.6 f.
10. Auf diese möglichen Konsequenzen hat schon Michael Harms aufmerksam gemacht: Der digitale Massenspeicher im Hörfunk. in: Eckhard Lange (Hrsg.): *Wer zappelt im Netz, wer knüpft die Fäden? Die Rolle der Medienarchive im modernen Informationsmanagement* [= Beiträge zur Mediendokumentation, Band 4]. Baden-Baden: Nomos, 1997, S. 209.
- 11 a.a.O., S.6.

Summary in English

The 'eternal' data file, or: does digitization really solve all the problems of sound archives?

In the journal "*Scientific American*" (1995, no.1, p.24) the computer expert Jeff Rothenberg from California draws attention to the risk that digitally stored documents might be delivered to future generations in a far smaller quantity than paper documents.

The present paper tries to apply Rothenberg's scenario to audio documents. Analogue sound carriers are put into jeopardy to be irrevocably lost if sound archivists give way all too eagerly to the technicians' many and various calls for digitization.

As many of the digital storage media will presumably not last very long, it is of utmost importance to copy the data regularly. In connection with this fact some authors already speak of the 'eternal data file' which will replace the 'eternal sound carrier' such as cylinders, discs, or tapes. But the problem is that it is not just the digital storage media (like floppy or hard discs, CD-R, CD-ROM, DVD, DAT, etc.) which may rapidly decay. It is the hardware and software necessary to read the stored digital information: they become obsolete even more rapidly than the rate of decay of the storage media. Besides, it is not sufficient just to be able to read the pure information of a bit stream, because only the encodings carried along with a data file allow a correct interpretation of the binary information. Consequently, the data files must not only be copied regularly, but at the same time must be converted into the newly created formats, which implies enormous costs and time.

It will probably be impossible to copy the large sound collections kept in our archives to new storage media year by year, even if this could be done automatically. Extensive selection will therefore be necessary, and one has not to be a prophet to predict that the criteria for these selections will be economic rather than cultural ones. But even if one succeeded in transferring the enormous amount of analogue sound recordings collected in the archives all over the world into continual new digital formats, there would be a loss of secondary and tertiary information which is inextricably linked with old analogue sound carriers, such as sleeve notes and pictures, booklets, cover art, layout, etc.

No private record collector will be willing to sacrifice his collection for the idea of an 'eternal data file'. Professional sound archivists therefore should reflect their task to protect the cultural heritage of the past, and should not be the first to deliver their treasures to an uncertain digital future.

Audio-visual resource discovery on the Web

Based on "Sound archive cataloguing and the Dublin Core"

*by Chris Clark, British Library National Sound Archive presented at the
Open Session of the IASA Cataloguing & Documentation Committee,
IASA Conference, Muscat, Sultanate of Oman*

As IASA prepares to publish its first major contribution to the documentation of audio-visual recordings as physical items within archival collections a number of new ideas are gathering momentum which will assist remote access by electronic means to the digitised versions of those collections. Since these ideas relate to the discovery of archival resources rather than the retrieval of specific items, there is no threat to the traditional approach to cataloguing engaged by the IASA Rules. Indeed, the success of the new means of access will rely even more heavily on consistently presented information at collection item level. The two approaches, old and new, will therefore be regarded in the future as complementary.

Attention is focused on a group of collaborative initiatives associated with resource description for the Internet (or Web), all of which involve an emerging metadata standard known as 'Dublin Core'. The brief presentation I gave at the IASA Conference in Oman last October was designed to give members of the IASA Cataloguing & Documentation Committee up-to-date information about the development of Dublin Core and how it might come to be applied in relation to sound archives in the future. That information was compiled through my involvement in the UK's Performing Arts Data Service (PADS), notably at a workshop which took place at Warwick University in April 1997. As with any initiative associated with the internet, the story has moved on since October and I have taken advantage of more recent information, notably the appearance at the end of October of the report *Discovering Online Resources Across the Humanities* (ref. 1) and the emergence of Educom's IMS Project to give it more currency.

(There is, of course, a danger in presenting supposedly state-of-the-art reports at a closed working session at conference and then offering them to the general readership. While the report may be news to members of one IASA committee, other committees and individuals may already be more advanced in their knowledge: for instance, I note that IASA has representation on the European Broadcasting Union's Audio File Technology Group which will have seen a paper by Giorgio Dimino of RAI entitled *Structure of metadata for broadcasting archive applications*. He includes a description of a metadata structure that makes interesting comparison with those described in this paper).

Introducing Dublin Core and the IMS Project

Dublin Core is the name given to a set of data attributes which is intended to enable service providers, such as libraries, archives and museums, to arrange information about their holdings for presentation and access in a global, electronic, environment (such as the Internet or Web) as opposed to traditional means within the boundaries of a single location, such as a computerised catalogue viewed through a terminal in a library reading room, or a published guide to the collection.

Most of the work on Dublin Core began as an American initiative led by Stu Weibel at the Online Computer Library Center (OCLC) with strong support from Lorcan Dempsey of the U.K. Office for Library and Information Networking (UKOLN). It now involves many specialists in the fields of computer and information science, librarianship, imaging and geospatial data, museums and archives. It can also be regarded as an international effort involving the Nordic countries (Sweden, Denmark, Norway and Finland), Germany, France, Australia and Thailand as well as the U.K. and the United States. A considerable amount of information about Dublin Core is available on the Web, the best source on developments being *DC open issues and working papers* at <<http://purl.oclc.org/metadata/dublincore/>>.

Also American is the **IMS Project** (*Instructional Management Systems Project*). This is an Educom NLII initiative (*ref. 2*) which is developing a specification and software for managing on-line learning resources. It has compiled its own 'metadata dictionary' which incorporates the Dublin Core metadata and has added about twenty one new attributes. The IMS metadata specification identifies two means of exchanging metadata among computers on the Internet. The first uses XML/RDF which are the emerging standards developed by the World Wide Web Consortium (W3C) (*ref. 3*). The second uses IMS metadata objects that can be easily exchanged with Java-based and Microsoft ActiveX-based programs via RMI, Corba, or DCOM. Educom has submitted the metadata specifications to the Institute of Electrical and Electronics Engineers (IEEE) to begin the process of establishing a formal international standard. The IMS project has recently signed a memorandum of understanding with the European Union-sponsored ARIADNE project to further internationalisation in the context of IEEE.

The IMS solution appears to have the backing of key players including SUN, ORACLE, MACROMEDIA, Microsoft, W3C, the U.S. Department of Defence, and JISC (the Joint Information Systems Committee which administers IT development in the U.K.'s academic sector). The IMS homepage is at <<http://www.imsproject.org/metadata/index.html>>.

Background concepts and standards

Some of the terms and phrases most closely associated with these two initiatives are *interoperability, resource discovery, cross-domain access* and *metadata*.

Interoperability involves the possibility of simultaneous access to different computer systems, such as on-line catalogues in libraries and archives. The main technical requirement is for a network applications protocol to deal with the transactions between systems. The international standard for this is now the American standard Z39.50 (version 3, 1995) which has incorporated the former international standard SR (Search & Retrieve). Most networkable IT products now on the market have some form of Z39.50 compliance.

An example of interoperability in the sound archive environment was Project SR-Target (aka PARAGON) which ran in 1996 and which was supported by the European Commission's Action Plan for Libraries (<<http://mediator.uni-dk.paragon/>>).

A clear introduction to this standard can be found at <<http://www.biblio-tech.com/html/z39.50.html>>) and I also recommend the recently published *Up and running: implementing Z39.50* (ref. 4). Note that Z39.50 access is not the same as internet access although most web browsers (e.g. Sirsi's *WebCat*) may incorporate the standard as an integral part of the software. The protocol governs operations between two or more Z39.50 compliant systems, translating the format of responses from the 'target' system into a format which will be readable at the originator's system. Its sorting and browsing (known in the standard as 'scanning') capabilities may even exceed the functionality of either system and with extra facilities available for saving and combining sets of data retrieved from different sources it is not surprising that some libraries have provided a Z39.50 loop into their own system to enhance their system's functionality.

At a higher level than Z39.50, RDF (Resource Description Framework) is a framework for metadata providing interoperability between applications that exchange machine-understandable information on the Web. RDF emphasizes facilities to enable automated processing of Web resources and can be used in a variety of application areas; for example: in resource discovery (see below) to provide better search engine capabilities; in cataloguing for describing the content and content relationships available at a particular Web site, page, or digital library; for describing intellectual property rights of Web pages, and in many others. RDF with digital signatures is considered a vital component in building the so-called 'Web of Trust' for electronic commerce, collaboration, and other applications.

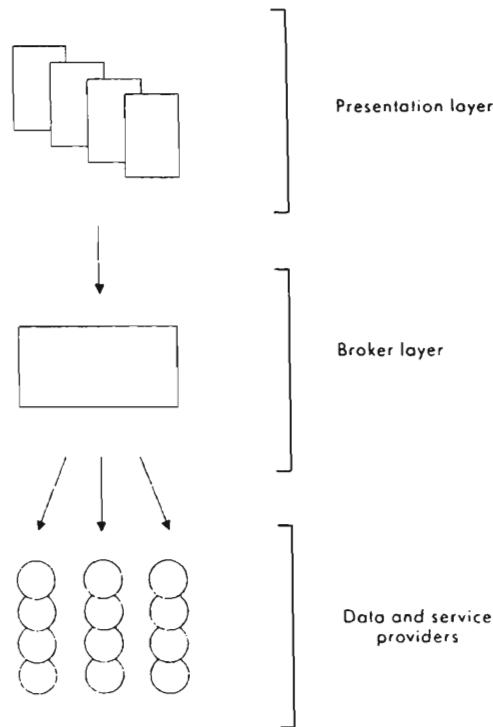
Resource discovery is a fashionable phrase which some dismiss as cataloguing and enquiry work by another name. In fact it has to be understood in the context of computerised information resources available over networks, such as Internet and we will all have heard the story about how it being the world's biggest library but all the books are scattered across the floor. Resource discovery can therefore be regarded in two ways: as a description of the mission to clear up the mess; and as a facility for people accessing the Internet to locate all the collections which may be of interest to their field of study. Despite the availability of powerful search engines on the Web, the means for doing this at present are unreliable: many important collections can be overlooked. (By the way, if you thought your options in this area were limited Lycos, Alta Vista and a handful of other services, take a look at a UK-based site *Andy's home page* which indexes and categorises more than 450 search engines on the web: <<http://www.merrydew.demon.co.uk/>>.

Within the concept of resource discovery we find another term: *cross-domain access*, which means being able to conduct searches across a wide range of disciplines and information services, for example researching the life and work of an author such as Dickens by accessing museum, gallery, library and archival holdings, and within each, considering texts, pictures, audio-visual material, maps, census data, etc. It provides an opportunity for changing the traditional linear approach to subject matter with something that is multi-linear, viewed from several different angles at once.

Clearly there will be problems with cross-domain access once one ventures outside the uniform world of resources for print . It is unheard of to find an art gallery, a museum, a public records office and a sound archive which share the same documentation standards. Should this matter? Is it really necessary need to address this problem in the first place? Current research trends suggest it is (see *Information Technology in Humanities Scholarship... the United States Focus* at <<http://www.acls.org/op37-ii.htm>>. This same report summarises the problems and conflicts:

“In truth, however, the Web is still a fairly raw technology. It points to resources in an elegant and even flashy way, but still suffers from considerable drawbacks which include missing, defective, or outdated links; difficulties in ascertaining the authority behind most Web sites; the misleading titles of many sites; the burgeoning incursion of commercial ventures onto the Web; the sheer amount of material available; and the lack of direct access to the texts and other resources in some databases. Because the Web is a highly accessible mass publishing environment, many academics have embraced this new medium. The concept of an arena for public discourse appeals to most scholars. However, on the level of day-to-day work, the openness of the Web has led to a saturation of communication space that at times seems to erase the possibility of coherent discourse.”

Part of the answer to these problems may be found in the idea of a three-tiered model for resource discovery and delivery. This kind of model is already being explored through a range of initiatives, including the Arts and Humanities Database Service (AHDS) within which the PADS, mentioned earlier, is a service provider. The model can be represented thus:



The presentation layer is the user's interface, typically the Web. The broker (or gateway or middleware) layer, as described by Lorcan Dempsey (*ref.3*) is:

"a layer of software which mediates access between users and available resources. Depending on its functional richness, this layer may hide the heterogeneity of available resources, may provide navigation and selection support, may allow users to interact with resources in various ways, may provide authentication, management and other services. ... [A] requirement is to develop a federating solution which allows services to develop autonomously while projecting a single unified image to the user. They need to be seen as a single service, rather than as a series of individual opportunities... Central to the construction of the broker will be protocol support and metadata".

The data and service provider is, potentially, your institution.

Another part of the answer is to be found in the concept of *metadata*, which can be defined as information which describes information in some standardised format and which facilitates the location and retrieval of that information which will typically be in a digitised format. Although traditional catalogues (on card or machine-readable) can be classed as metadata, what is being proposed takes the disciplines associated with documentation to new levels of concentration and co-operation: Lorcan Dempsey again (*ref.4*):

"Metadata is data associated with objects which relieve their potential users of having to have full advanced knowledge of their existence or characteristics. A user might be a program or a person, and metadata may support a variety of uses or operations".

Structuralists and minimalists

Not surprisingly, any system which intends to serve a global community must be easy to comprehend and use. It must also be reliable. However, it is recognised that the retrieval potential of metadata, particularly in the initial applications, might not be as precise as in the native databases to which it connects. Even so, it will serve a useful enough purpose in identifying large sources of data which the user can subsequently approach using more refined tools. In this respect, a metadata service based on Dublin Core would approximate to a Directory of Directories, though on a much vaster scale. These issues were examined in depth at the Metadata Summit organised by the Research Libraries Group (RLG) in California last July. You can find a report on this at: <<http://www.rlg.org/meta9707.html>>.

Other issues are associated with defining terms. Using the search category NAME to stand for authors, performers, composers, etc. on a self-contained, localised database can be made to work satisfactorily but could lead to confusion in a distributed system. Even worse confusion could be generated by a term such as "creation date": are we referring to the date of publication, the date of recording, the date of composition, or even the date the metadata was created?

Questions such as that, seeking endless refinement, are an inescapable feature of meetings concerned with metadata and it is fascinating (though a little exasperating also) to see the traditional arguments associated with cataloguing rehearsed once again. The Dublin Core workshops, for example, tend to polarise minimalists (those who are content with a workable solution which is comprehensible to non-experts) and structuralists (those who support greater qualification of data attributes in the interests of precision and being able to match the needs of particular groups of users). A recent article by Mary Tonne Schaefer in *Information Retrieval & Library Automation*

examines this polarity in greater depth than is advisable here and considers other paramount issues, such as multilingual representation (*ref.5*)

The IMS Metadata Dictionary and Dublin Core

There is consensus that Dublin Core it is suitably subject-neutral to serve as a starting point for providing some form of solution. It has aroused considerable interest since it was consolidated last year and participants at the Metadata Summit evidently agreed that it had many qualities: it has international support, it has proved helpful to users in finding things, it is broadly recognised and supported, it is maintained in a stable environment and its continuing development seems assured. That development may well now be tied to IMS.

Metadata is organised, like traditional catalogues, into categories, or fields. Here is the list of fields, with brief descriptions, from the IMS Metadata Dictionary. The fields that are asterisked have been derived from Dublin Core. Few of them, if any, will be mandatory and each is repeatable and presentable in any order.

Author or Creator*

The author or creator denotes the person(s) or organisation(s) responsible for the creation of the work.

Coverage*

The spatial or temporal characteristics of the intellectual content of the resource

Date*

Dates relating to the container

Description*

A textual description of the content of the resource, including abstracts in the case of document-like objects or content descriptions in the case of visual resources

Format*

The data format of the resource, used to identify the software and possibly hardware that might be needed to display or operate the resource

Language*

The language of the intellectual content of the resource

Other Contributors*

A person or organisation not specified in a Creator element who has made significant intellectual contributions to the resource but whose contribution is secondary to any person or organisation specified in a Creator element

Publisher*

The entity responsible for making the resource available in its present form, such as a publishing house, a university department, or a corporate entity

Relation*

An identifier of a second resource and its relationship to the present resource

Resource Identifier*

A string or number used to uniquely identify the resource. Examples for networked resources include URLs and URNs (when implemented). Other globally-unique identifiers, such as ISBN or other formal names are also candidates for this element. Each container must have a unique identification

Resource Type*

The category of the resource, such as home page, novel, poem, working paper, technical report, essay, dictionary

Rights Management*

A rights management statement, an identifier that links to a rights management statement, or an identifier that links to a service providing information about rights management for the resource. Rights Management is defined as the agent with the legal authority to negotiate access to the container and the rights of usage

Source*

Information about a second resource from which the present resource is derived

Subject* (note: DC refers to this as Subject and Keywords)

The topic of the resource. Typically, subject will be expressed as keywords or phrases that describe the subject or content of the resource. The use of controlled vocabularies and formal classification schemes is encouraged

Title*

The main label of the offering

Agent

The entity responsible for managing an aspect of a container.

AvailabilityDate

The date upon which the container is made available for use.

Concepts

The concepts embodied in the containers content

Container Type

The Container Type specifies the type of learning resource in the broadest terms

ExpirationDate

Content Expiration Date. The date upon which the contents may no longer be valid, for instance, a list of U.S. presidents becomes invalid within four years.

Expiration does not include licensing expiration, which is managed external to the container.

Granularity

Granular level is a relative size, for instance the level of curricular scope.

Interactivity Level

The level of interaction between the user and the container

Keywords

one or more words exemplifying the meaning or value

LastModifiedDate**Learning Level**

This field describes the difficulty of the materials. This field defines the target audience in terms of academic grade and skill level at that grade

Location

This is typically the URL(s) through which the container can be retrieved, either directly or through an index.

Meta-Meta-data

Information about the meta-data.

Objectives

Learning objectives met by the container.

Pedagogy

The teaching method used in the container

Platform

Required software, hardware to use the container.

Prerequisites

Course and/or capabilities required to use the material.

Presentation

Presentation describes how the materials are presented at the user's workspace. It is a technical description. What is the dominant mode? Images? Sound?

Price Code

The price of using a particular offering, which may be free. It may also indicate that price is negotiated. Price Code defines the price or mechanism relative to the Use Rights

PublicationDate

The default of the Date field.

Role

The role of the entity serving as the learning resource. As examples, a person may have the role of learner or teacher and an enterprise may have the role of university or publisher

Scheme

One or more descriptions of information structures or locations of information structures describing an aspect of a learning resource.

SizeOf

Size of the container in bytes.

Structure

Structure is a technical description of how the material is organised with respect to ordering. This field addresses the underlying organisational structure material

Use Rights

What a user can do with an offering; permissioning rules. A sub-field of Rights Management.

Use Time

Use Time is an estimate of the time a normal learner/user would be expected to spend using the container

User Support

Indication that direct user support is available from the provider. This may include telephone support and email.

Version

A numeric indicator of the version or edition.

The IMS dictionary is a dynamic document maintained in a repository by the IMS Project. The specification embodying this dictionary was released by Educom in March 1998 and software companies and publishers are assumed to be making use of it already to label educational resources on the Internet.

The PADS workshops on moving image and sound resources

The range of attributes represented above can be regarded as hospitable to a wide range of disciplines and domains, including sound recordings and moving image though work on extending metadata standards to cover these formats is at an early stage. During the early part of 1997, a series of workshops was held by PADS at Warwick University at which representatives from various institutions involved in the performing arts gathered to assess the suitability of Dublin Core for their respective media. The final reports on each of these workshops were posted on the Internet later that year: sound is at <http://pads.ahds.ac.uk/workshops/mu_rep2.htm> and moving image is at <http://pads.ahds.ac.uk/workshops/mi_rep2.html>. They are also summarised in *Discovering online resources.... (ref. 1)*.

The workshop relating to sound recordings took place in April 1997. Malcolm Jones (IAML) presented an overview of cataloguing problems for music and sound recordings and I presented a summary of interoperability problems encountered by the JUKEBOX and PARAGON projects, focusing on the problems PARAGON had had with matching sound archive data sets onto Z39.50's bib-1 data attribute set. I also outlined a set of five criteria central to the documentation of sound recordings and against which the suitability of Dublin Core in the context of an audio-visual archive might be tested:

- Origenation (where the item originated, provenance)
- Category of sound event (broad/specific classification, genre)
- Rights (including any named contributors)
- Technology (relating to original)
- Place and time (circumstances of the recording)

In general, these criteria were met by the Dublin Core set though the 'structuralist' problem of presenting layers of information (common to all attempts at cataloguing media) is still present: i.e. the need to qualify creator roles (performer, violin, composer, lyricist, producer, etc.) and rights statements to prevent ambiguity.

Specific awkwardness was encountered in matching the elements associated with place and time which those responsible for developing Dublin Core tend to see as fitting into the Coverage category. The feeling of the workshop was that Subject might be preferable except that music as the cultural expression of a place is not necessarily the same as music recorded in that same place.

Projects and studies

The PADS reports recommended that the next step was to make any refinements to Dublin Core (or IMS) relevant to time-based media dependent on the findings of pilot studies. As yet there are none planned by the PADS for sound (the copyright question is one of several obstacles) but a pilot study for moving image has been announced recently. A University of Glasgow consortium led by the PADS was chosen as one of two pilot sites for *Imagination/Universities Network Pilot*. This project, which has been initiated by the British Film Institute (BFI), the British Universities Film and Video Council (BUFVC) and the Joint Information Systems Committee (JISC) "will develop the delivery of moving images to academic institutions via networks" and "may be the opening activity in a radical new network service for UK higher education. At least thirty hours of moving image material, mostly sourced from the BFI's National Film and Television Archive, in the subject areas of Film Studies, Social History and Medicine, will be cleared for copyright and digitised for the project. These materials will then be held on servers at the Glasgow pilot site. The aim of the project is to investigate and demonstrate the most effective ways of managing a substantial amount of moving image data so as to facilitate fast and user-friendly access and to examine how the materials can be delivered most effectively to support both research and teaching" (*ref 6*).

Despite this encouraging development, the audiovisual protagonists are, as usual, lagging behind the rest of the field. One of the most obvious problems faced by the PADS is the lack of any critical mass of digitised audiovisual material available in the U.K. and this is largely a reflection of relative funding and complicated rights issues. One can always be 'structuralist' and find ways to adapt data to standards and vice versa but what is needed is some real 'minimalist' experience working with these new tools on significant quantities of digitised audio-visual resources.

Meanwhile, here is a brief list of other initiatives connected with metadata, including Dublin Core, which might establish useful precedents for member institutions of IASA.

- Stanford University Digital Libraries Project <<http://diglib.stanford.edu/>>
- Biblink <<http://www.ukoln.ac.uk/metadata/BIBLINK/>>
- Solinet Monticello electronic library
<<http://www.solinet.net>>
- Networked Services Project (involving the National Libraries of Australia and New Zealand, replacing the NDIS project)
<<http://www.nla.gov.au/nsp>>
- Nordic Metadata Project <<http://linnea.helsinki.fi/meta/>>

Finally, I should also mention the European Commission's series of metadata workshops, the first of which was held last year (EC Metadata Workshop Luxembourg, 1-2 December 1997 report at <<http://hosted.ukoln.ac.uk/ec/metadata-1997/>> and the second of which is taking place as this goes to press.

REFERENCES

Ref. 1. *Discovering Online Resources Across the Humanities*; edited by Paul Miller and Daniel Greenstein on behalf of the Arts and Humanities Data Service (AHDS) and the UK Office for Library and Information Networking (UKOLN).- Bath: UKOLN, 1997.- ISBN 0 9515856 4 3

Also available at <<http://ahds.ac.uk/public/metadata/discovery.html>>
This contains an extensive list of references and pointers to further reading.

Ref. 2 Educom <<http://www.educom.edu>>, based in Washington, DC, is a non-profit consortium of 600 colleges and universities and 100 Corporate Associates that facilitates the introduction, use and access to, and management of information resources in teaching, learning, scholarship, and research.

Ref. 3 *Resource Description Framework (RDF) Model and Syntax: W3C Working Draft 16 Feb. 1998* at <<http://www.w3.org/TR/WD-rdf-syntax/>> (see also RDF Frequently Asked Questions (FAQ) at <<http://www.w3.org/RDF/FAQ>>

Ref. 4 *Up and Running: Implementing Z39.50*; edited proceedings of a Z39.50 symposium sponsored by the State Library of Iowa held November 26, 1996. - NISO, 1998?

Ref. 5 Mary Tonne Schaefer. "Demystifying metadata: initiatives for web documentation description". *Information Retrieval & Library Automation* vol. 33 no.11 (April 1998) pp.1-5.

Ref. 6 Imagination/Universities Network Pilot at
<<http://pads.ahds.ac.uk/projects/bfi.html>>

Fonoteca de la Biblioteca de Catalunya

*Maite Cuende, M. Rosa Escayola, Margarida Estanyol and Ramon Sunyer 1,
presented by Margarida Estanyol
at the IASA Conference in Muscat, Oman, 1997*

Introduction

Catalonia is a politically autonomous region with its own Government and Parliament within Spain. It has its own language, Catalan, which is also spoken in other territories such as the Valencia region and the Balearic Islands in Spain, Andorra, the Roussillon area of France and L'Alguer in Sardinia, and it is co-official with Spanish in Catalonia itself.

The first sound recordings made in Catalonia were recorded by The Gramophone Company using "Berliner" discs in 1900. By 1915, the Compañía del Gramófono SAE was producing the records in its own factory in Barcelona and also distributing them to Latin America. Private collectors and radio stations (the first one being Radio Barcelona in 1924) started to keep sound recordings, but none of these collections were open to the public. In 1957 the Legal Deposit Act compelled libraries or archives to collect, preserve and divulge this kind of material.

History (1958-1997)

The Spanish Ministry of Education and Science established the Fonoteca in 1962 as a result of the application of the Legal Deposit Act. It was stated that one copy of every sound recording produced in Spain was to be deposited in the Biblioteca Provincial y Universitaria (Provincial Public and University Library) in Barcelona, as was the case with printed documents. The first Library system law in Catalonia was promulgated in 1981, but it was not until 1985, and after the political transfers of Legal Deposit management to the autonomous regions in the democratic period, that the Culture Department of the Catalan Government took over these responsibilities. About 100,000 sound recordings were transferred with an inventory card catalogue, and the Fonoteca started to receive only the Catalan Legal Deposit product.

The Fonoteca was moved in 1991 from the University of Barcelona (central building) to its present location to allow for growth. The new Catalan Library System Law (1993) of the Catalan Parliament established the dependence of the Fonoteca on the Biblioteca de Catalunya (Catalonia's 'National Library') as a unit within it. This link was formally established in 1994, while the Biblioteca de Catalunya was about to expand into a new building for the general storage of books and periodicals. We are expecting to move the Fonoteca to these new premises shortly before 1998.

Organization

The aim of the Fonoteca de la Biblioteca de Catalunya is to collect, process, keep and divulge the sound heritage of Catalan interest. This expression “of Catalan interest” has given rise to discussions as to whether other Catalan language territories should be included.

The recent Catalan Public Library System Law establishes our status, in terms of an organizational chart, as a collection in two parts. The ‘old recordings section’ must be responsible for all Catalan ‘historical’ records up to 1957. Current recordings would be those acquired by Legal Deposit.

Collections

The Fonoteca files its legal deposit acquisitions by year, and within each year by format: albums, LPs, singles, cassettes, CDs and videos. With donations and purchases, we file by format. There is a special arrangement for the Radio Barcelona collection as it is a deposit: items are filed according to Radio Barcelona catalogues.

Legal Deposit Collection

(about 175,000 items, 40,000 of which are catalogued)

From 1958 to 1982 the Fonoteca received one copy of all Spanish product, mainly on vinyl (LP's and singles) and tapes (from 1978). Videotapes (from 1982), CDs (from 1987) and Laser Discs (from 1988) began to be deposited as Catalan product. These items are catalogued from 1984 on. The earlier period is not searchable unless the user knows the year and the label on which the record was released: there is a catalogue arranged by date and label covering 1957 to 1965.

Radio Barcelona collection

(about 100,000 items, increasing, made up of 12,000 shellace discs, 80,000 vinyl discs and 9,000 tape reels, of which 11,400 are catalogued)

By the end of 1994 the Biblioteca de Catalunya and the Sociedad Española de Radiodifusión (SER) came to an agreement through which the SER deposited its Barcelona radio station sound archive in the Fonoteca for a period of twenty years. It contained both commercial recordings and a selection of its own broadcast productions. In return, the Fonoteca undertook the task of cataloguing and preserving the collection on deposit and copying any of these records as requested by the broadcasting station onto CD.

Some of the commercial items in this collection are duplicated in our Legal Deposit collection, but there are also many imported recordings. The broadcast items include interviews, radio drama, live concerts, sport and other political and cultural events. Reels containing these items are still being selected by Radio Barcelona from the whole collection before being sent to the Fonoteca.

Gifts and donations

The Fonoteca's policy for accepting donations is not very restrictive at present. We accept nearly everything that can enrich our collections, with preference for Catalan-related material.

The most important donations have been received since 1990. Outstanding among these are the master reels, LP's and singles of the Catalan recording company Concentric which cover most of the Catalan pop music movement product between the 1960s and the 1980s (copyright included). Other big collections are those of Mr. Ricard Gomis (1994), a record collector, music lover and patron, and Mr. Oriol Martorell, professor at the Universitat de Barcelona, conductor and member of the Catalan Parliament on his retirement. The former collection consists of 1,200 78 rpm discs of classical music in perfect condition and accompanied by card catalogues donated by his daughters. The Martorell collection consisted of 5,500 records (all kinds of music, mainly related to Catalan product) also with accompanying catalogues. Many of these records were bought outside Spain at a time when imports to our country were non-existent or rare.

Another special donation, pending agreement between the donor and the Biblioteca de Catalunya, is a collection of opera tapes, videotapes, laser discs, compact discs and books belonging to the late Mr. Jaume Baró, a Catalan singer who lived and died in Switzerland. This will be the first videotape donation that we have received.

We also hold other small but no less important collections: 146 piano rolls, most of them manufactured in La Garriga (Barcelona) at the beginning of the 20th century, and some Berliner records.

Purchases

Our policy with regard to buying new releases gives priority to sound and audiovisual recordings of Catalan interest that, for various reasons, are not covered by Catalan Legal Deposit provisions. This amount represents about 0.3% of our total stock. Catalan popular music groups have started to publish outside of Catalonia (Madrid and even the UK and America) very recently, but other very well-known classical music composers or performers have contracts with big record companies which do not deposit their production in Catalonia (Josep Carreras with CBS; Alicia de Larrocha with Hispavox and Columbia; Victoria de los Ángeles with Fonogram; Edmon Colomer and Jordi Savall with Avidis; Josep Pons and the Orquestra de Cambra del Teatre Lliure with BMG; Tete Montoliu with ENJA, etc.).

As for acquiring older recordings, there is a large second-hand market for pop music records in Catalonia, but other genres (like classical or contemporary music) are very restricted to only a few collectors. This is the reason why we don not buy in the second-hand market and try to obtain collections from well-known private hands. Our main aim is to collect the Catalan recording product from the very beginning up to 1957. The first step consists of getting the infomation from the printed catalogues, which are very difficult to find in our country. Thanks to the collaboration of private collectors and to the interest of other sound archives all over Spain, an interchange of printed catalogues of recording companies is now underway between the Fonoteca de la Biblioteca de Catalunya, the Biblioteca Nacional in Madrid and the ERESBIL archive in the Basque Country.

Information management system (catalogues)

The cataloguing of sound recordings according to professional standards did not start until 1985. We use ISBD for description, AACR-2 for authority entries, LCSH [Library of Congress Subject Headings] and Music Subject Headings and the CATMARC format. The automated library system used at this starting point (called SICAB) was especially designed to build up the *Bibliografia Nacional de Catalunya* (the Catalan National Bibliography). It was not until the integration of the Fonoteca with the Biblioteca de Catalunya that catalogue records were migrated from the SICAB to the VTLS system in November 1995.

By law, the Biblioteca de Catalunya is responsible for the compilation of the Catalan libraries' collective catalogue. A first step has been the recent integration into the Collective Catalogue of the Catalan Universities (CCUC). The Fonoteca, with approximately 50.000 entries, is the institution with most audio and audiovisual material appearing in this shared catalogue.

Our management system equipment is held in a HP3000 server with a MPE/iX (5.5 version) operative system. VTLS (1994.1.13 version) is our documentary management system which includes Acquisitions, Cataloguing, Serials Control, OPAC, Circulating and Document delivery.

Our catalogues can be searched on-line through the Virtual gateway VTLS by going to the Biblioteca de Catalunya web page at the <URL <http://www.gencat.es/bc/>>.

Staff and equipment

There is a staff of seven people working on different tasks. Four are qualified, specialist librarians and we divide our cataloguing work according to acquisition source: one person deals with sound recordings coming via Legal Deposit, another catalogues donations and Radio Barcelona records, the third specialises in video recordings and Radio Barcelona open reels and the fourth acts as Director. There is also a sound technician who deals with user requests, Radio Barcelona dubbing onto CD and the production of security copies. One of the team with musical knowledge is in charge of attending to the public and dealing with suppliers along with routine management. And a subordinate takes care of the receipt and storage of materials.

The listening room is rather small, with only six listening places and one on-line catalogue terminal. Books and current periodicals are in the listening room on open access, and users can also ask to listen to records. The playback equipment consists of three double listening-points, one for 78 rpm and the others for CDs, cassettes or LPs. The monitor and devices for watching videotapes are not in the main room. We have planned to increase our facilities in the new premises, such as putting a stereo monitor and a three-system video player in the listening room.

Services

Bibliographic resources

The printed collection is quite small (approximately 1,000 monograph titles and 22 current periodicals) and is on open access. Apart from general reference books, there is a small collection of professional tools for librarians working on or interested in sound archives. Our collection of periodicals includes all kinds of music and related subjects (hi-fi equipment, etc.) and all are catalogued.

As with any other unit in the Biblioteca de Catalunya, a CDnet server with 20 CD-ROMs is available, and a terminal with a connection to Internet will be installed in the new reading room.

Copies and facilities

Copies and loans of audio and audiovisual materials held by libraries, with restrictions on research use, are permitted by the Spanish Copyright Act. Nowadays, and with the absorption of the Fonoteca into the Biblioteca de Catalunya, we are trying to find a system to make compatible the aims of a national sound archive with the lack of other public audio and audiovisual services (although the Catalan public library system already offers certain facilities for accessing the small collections of local and university libraries).

As a Legal Deposit records collection, the Fonoteca has not developed a loan system. With regard to our printed resources, we try to make our documentary supplies available within the Biblioteca de Catalunya premises or, in special cases, even to other institutions, national or foreign.

The use (consultation, listening or copying) of the Radio Barcelona deposit is restricted to private researchers and copies of Radio Barcelona's own productions stored in the Fonoteca must be requested through the Director of Radio Barcelona.

Preservation and restoration

In our present provisional premises two thirds of the documents are under temperature and relative humidity control maintained at a constant level (16°-18° C, 35%). This is so for all kinds of documents (digital, vinyl and tape) and will be extended to the whole collection in the new premises.

We make security copies in mini-disc format in order to safeguard original sound recordings in case of damage from bad conditions or from constant use. We do not anticipate doing so with the whole collection for the moment nor are we ready to undertake digitisation. However, we are aware of loss of quality and shortness of lifetime problems for magnetic tapes and that we will have to deal with this sooner or later.

As a general rule, we try to get rid of plastic covers on the vinyls. Some kinds of the early plastic stuck to the records. We remove them from the store and from donated collections and replace them with a specially prepared paper. We clean dust covers before shelving them. Recordings are thoroughly cleaned with record cleaning machines whenever they are requested by users. The Radio Barcelona collection was not very well preserved. Many of the 78's were in fact unplayable because of the conditions under which they had been stored and the fact they were in constant use for

broadcasting. As for the sound reels, they were put in neutral PH boxes and their conservation state is generally good.

Small collections such as piano rolls, videotapes in 2000 format, wax cylinders or other less common formats cannot be replayed because of lack of appropriate equipment, and so it happened with videotapes from the earlier collection and for this reason we do not know its current state.

Controversial questions

Framework

There is a need to create a framework for collecting the Catalan heritage. The Legal Deposit concerns only the manufacturer and experience proves that it would be better if the publisher were also involved, for audiovisual documents published together with printed materials are usually manufactured/printed in different places. This means that an audio or audiovisual document accompanied by a booklet (the former manufactured in Catalonia and the later printed in any other part of Spain, for instance) would reach the Legal Deposit incomplete.

From the viewpoint of cultural criteria, we are interested in three matters

- a) *The Catalan heritage produced in Catalonia.* It should be covered by the Legal Deposit, but as the law only concerns manufacturers, Catalan producers, publishers and any other body responsible for the release become separated.
- b) *The external production in Catalan language.* This would be a clear category if it were not for the fact that Catalan is also an official language outside our political borders. Although we share the language, we obviously do not share laws, so cooperation between these areas is strongly recommended. Catalonia is a clear example of an increasingly multicultural area. Castilian Spanish is the co-official language used in Catalan music, and even English is often used in rock and jazz music.
- c) *Thematic matters.* These are subjects related to Catalan culture in general. (i.e. sardanas performed by foreign 'cables' such as La Principal d'Amsterdam, videotapes related to Catalonia, etc.)

Cataloguing of retrospective collections

As there is no catalogue for the 1957-1985 Legal Deposit collection we must rely on the primitive list on cards of records filed by year and record label. This is the reason why record company catalogues are so appreciated, as well as other discographies, reference catalogues and guides.

Radio Barcelona had to keep their card catalogue on its premises for internal use. We have recently considered the possibility of copying this catalogue onto microfiche. This means that nearly 40% of our stock could be retrievable in the near future, although it would take a while before it could be searched on the automated catalogue.

Cataloguing rules and MARC format

From 1985 to 1991 the cataloguing was quite accurate and done in depth, with contents notes and a complete ISBD level of description. In 1991 we had to find a solution to coping with the increasing number of incoming items, so it was decided that catalogue records should be concise with the minimum of information, giving the maximum possible access points for Art music (mainly uniform titles and subject headings) and for Catalan interest authorities. The main difficulty was linking titles with performers for the highest level of description and the impossibility of retrieving non-Catalan pop music titles. Nowadays we are looking for alternative systems of cataloguing that allow us to maintain our rate of growth without losing information retrieval facilities.

The CATalan MARC format is based in the UKMARC, but its development for audio and audiovisuals cataloguing depends exclusively on our own experience. This is a handicap we would like to overcome by sharing this experience with others who have already succeeded.

Conclusion

The Fonoteca de la Biblioteca de Catalunya is a young institution which must serve researchers and general needs for sound and video recordings of Catalan interest. Our main goal now is to have the Fonoteca settled in its new building and to provide increasingly good services. We sincerely hope to achieve this in collaboration with other similar institutions.

NOTES

1 The former Director of the Fonoteca, Mercè Rubió, attended some IASA meetings but she could not see the *Fonoteca* being a member of this Association before her retirement. A great deal of the work presented in this article is due to her initiative and professionalism.

**The composer as sound archivist: a glimpse into the
studio methods of Karlheinz Stockhausen**
Chris Clark, British Library National Sound Archive

In *IASA Bulletin* no.22 (July 1997) it was announced that the German composer Karlheinz Stockhausen had joined IASA in order to benefit from our work on long-term preservation. I invited him last November to consider writing something for the Journal. The reply indicated, not surprisingly, that he was busily involved in composition and could not write afford the time to write something special but he made the suggestion that I re-print some of the notes from one of his recent projects involving use of tape.

Stockhausen is one of the pioneers of electronic composition involving the manipulation of sound on tape and his studio methods have evolved since the 1950s to a level of sophistication and meticulousness which will be of interest to audio technicians regardless of their ever having heard a note of his music. All of his compositions are made available on his own eponymous label (including those which were previously available on the Deutsche Grammophon label) and he could be regarded as one of the first composers to harness the discipline of the sound archivist to his own work. I am therefore pleased to be able to reprint, with permission, a section of the notes which were included in the booklet accompanying *Dienstag aus Licht* (Stockhausen CD 40 A-B, 1996).

The section from Act 2 of the opera described below contains several components, each of which has also been released separately on other CD's, hence the reference throughout these notes to other titles, e.g. *Synthi-Fou* which is the part for one of the electronic keyboard players and *Octophony* which is the layer of electronically produced sounds to be projected in octophonic space, an additional challenge thrown down to the audio industry.

Recordings and mix-down of INVASION – EXPLOSION¹ 1993–1995

1993 studio recordings: INVASION – EXPLOSION (until BEYOND) with
singers and instrumentalists at Studio 4 of the WDR

On February 10th, the 2 original 24-track digital (Sony) tapes 1 and 2 of INVASION – EXPLOSION were picked up from the archives of the *Studio for Electronic Music*.

(Assistants during the following work were: Stephan Schmidt, recording supervisor; Mark Hohn, recording engineer; Ruth Witt, recording technician.)

- A 1) 2 days (February 11th / 12th): copies Two 24-track tapes of the electronic music: tape \square tracks \square - \square , duration 36'18", and tape \square tracks \square - \square , duration 31'55", were copied \square : \square onto two 24-track tapes having identical time-code, using 2 digital (Sony) tape recorders. Result: recording tapes \square \square , tracks \square to \square . As tape \square was being copied onto tape \square , the time-code on \square was recorded to the end of the tape [see explanation \square].

2) On track \square (click-track) of the tapes \square and \square , I spoke a click-track for all 252 signals (on tape \square from EXPLOSION until the end).

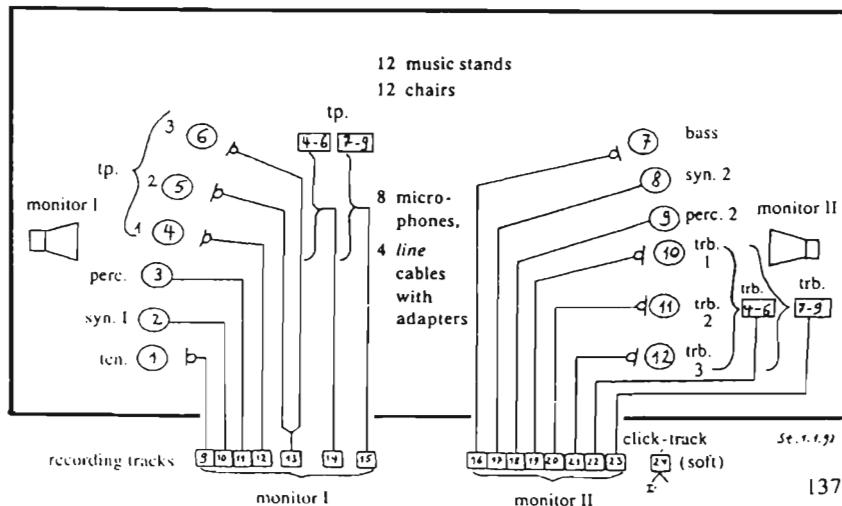
128

I Recording and mix-down of PIETÀ are comprehensively described in the booklet of CD (41), that of FAREWELL in the booklet of CD (42).

During this, I heard a stereo-mix of tracks to (*electronic music*) over earphones.

- 3) The two tapes **1A** and **2A** with click-track **copied 1:1** (without mixing console!) as security copies: **S 1A** **S 2A**.

- B** 3 days (February 15th / 16th / 17th): **recording** with 12 musicians on the 24-track tapes **1A** and **2A** which had been prepared.



- 1) 12 pairs of earphones (light *Sennheiser* with individually adjustable volume controls on the cable) numbered ① – ⑫ for the 12 musicians in the studio.

A stereo-mix on earphones ① to ⑫:

- a) 8 tracks of *electronic music*:

panoramas	< 20	< 8	2 >	11 >	< 11	< 2	8 >	20 >
tracks	1	2	3	4	5	6	7	8

- b) synthesizer 1 track ⑩, percussion 1 track ⑪ left ear,
synthesizer 2 track ⑯, percussion 2 track ⑰ right ear } for all
musicians;
c) track ⑭ click-track left + right for all musicians;
d) for tenor (①) and 3 trumpeters (④ ⑤ ⑥) tracks ⑯ ⑯ ⑯ ⑯ ⑯ ⑯
⑯ in addition on the right earphone,
for bass (⑦) and 3 trombonists (⑩ ⑪ ⑫) tracks ⑨ ⑯ ⑯ ⑯ ⑯ ⑯
in addition on the left earphone.

- 2) On tapes ① (1st and 2nd INVASION) and ② (3rd INVASION) each section was repeatedly recorded by each group until everything was right: at first 1st and 2nd INVASION, then the 3rd INVASION;
4th–9th trumpets and 4th–9th trombones not yet.
Only the two synthesizer players and percussionists could correct individually.

- 3) As each section was ready, they were listened to by the musicians over two high quality monitor loudspeakers (I and II) on stands in the studio.

Monitor I (at the left, behind the trumpet group)
electronic music panorama left, and tracks ⑨ – ⑯
as well as ⑭ (softer);

Monitor II (at the right, behind the trombone group)
electronic music panorama right, and tracks ⑯ – ⑯
as well as ⑭ (softer).

- C 1) 3 days (February 18th / 19th / 20th): recording with 6 musicians onto the 24-track recording tapes ① and ②:
trumpets 1, 2, 3 (microphones ④ ⑤ ⑥) played 4th–6th / 7th–9th trumpets on ⑯ and ⑯,
trombones 1, 2, 3 (microphones ⑩ ⑪ ⑫) played 4th–6th / 7th–9th trombones on ⑯ and ⑯.
Recording method like B.
- 2) On the 3rd day, security copies of the recording tapes ① and ② were made. Result: tapes ③ and ④.

BEYOND until the end was recorded on the recording tape ② in October 1993 by the WDR choir and synthesizer (Simon Stockhausen).

Stereo-mix of INVASION – EXPLOSION
(Mix-down of the 24-track recording using *Neve-Necam-System*)

- !) Each musician was recorded on only one channel (sometimes even 2 or 3 musicians on the same channel). Thus it would have been much better to have had a 48-track tape recorder for this recording. At first I had to dynamically balance the entire recording using the *Neve-Necam-System*, and only after this could I make the stereophonic movements.

The duet version of PIETÀ was recorded on February 23rd and 24th 1993 (see booklet of CD 43). After this, on February 25th–26th and March 2nd–3rd, I began to mix the *1st INVASION* in Studio 4. On March 4th–5th, we recorded PIETÀ Solo on tape 1A with Markus Stockhausen. After this, I continued to mix the *1st and 2nd INVASION* on March 6th and 8th–12th.

Mix-down of the recordings on tape IA

		3rd INVASION ip. 2-3										next 3rd INVASION!																																												
GR = group fader	GR 1-2	GR 3-4		GR 5-6		VCA1		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	click- track	reverb, high	reverb, low																						
		L	R	L	R	L	R	GR	electr. music										high group					low group																																
tracks	1-8	electr. music		high		low		Σ		Σ		Σ		1-6																																										
		9.15		16.23		9.23												ten.	syn	perc	tp.	1p.	2-3p.	4-6p.	7-9p.	bass	syn	perc	tp.	1p.	2p.	3p.	4p.	5p.	6p.	7p.																				
mixing console fader	1	panorama		<20		<12		<12>		<20>		<16		<8		<8>		<16>		<15		<12>		<9		<7>		<5>		<3>		<1>		<1>>		<5>		<7>		<9>		<11>		<13>		<15>										
		5		7		9		11		12		13		14		15		16		17		18		19		20		21		22		23		24		25		26		27		28		29		30		31		32		33		34		35

- 2) A *security copy* **IC** of the *Neve-Necam* mix was made on a second 24-track tape recorder from the result of the *mix-down* of the 1st and 2nd *INVASION* on the 24-track tape **IA**. The 24-track tape **IC** had been previously formatted.

3) I mixed the *3rd INVASION* from April 5th–8th 1994 in *Studio 2*.

3) I mixed the *Spa INVASION* from April 5th-8th 1994 in Studio 2.

Reverberation: *LEXICON Large and Stage*, 1.7 sec.

On April 8th 1994 we made a *security copy* (IC2) of the completed 3rd INVASION (Neve-Necam mix-down, tape 1A).

On this copy, from 0'50" to 5'00" (without GR = group faders 3-6, and without VCA 2) is the following:

	electronic music	high group	low group	click-track
tracks	1–8 not regulated	9–15	16–23	24

from 5'50"-9'30":

	electronic music	GR high group	GR low group	reverb.	high group	click- track
tracks	1–8 not regulated	9–10	11–12	13–14	16–22	24
panorama		< 20 20 >	< 20 20 >	< 20 20 >		

from 9'50"–13'40":

	electronic music	GR high group	GR low group	reverb.	low group	click- track
tracks	1–8 not regulated	9–10	11–12	13–14	16–23	24
panorama		< 20 20 >	< 20 20 >	< 20 20 >		

Continuation of the stereo mix-down of the INVASIONS (compare with p. 144)

At first, the incomplete mix of the three *INVASIONS* presented a problem for which I knew of no solution. Since namely all 24 tracks were taken for the three movements of the *electronic music*, of the *trumpet group* and of the *trombone group*, I wanted to copy the 7 stereo sums synchronously onto a second 24-track tape recorder.

In performances, during the three *INVASIONS* the musicians move through the auditorium from side to side and from back to front at completely different speeds. The general movement is

from left to right in the *1st INVASION*,

from right to left and again to the middle and to the front right in the *2nd INVASION*,

from the rear to the front in the *3rd INVASION*.

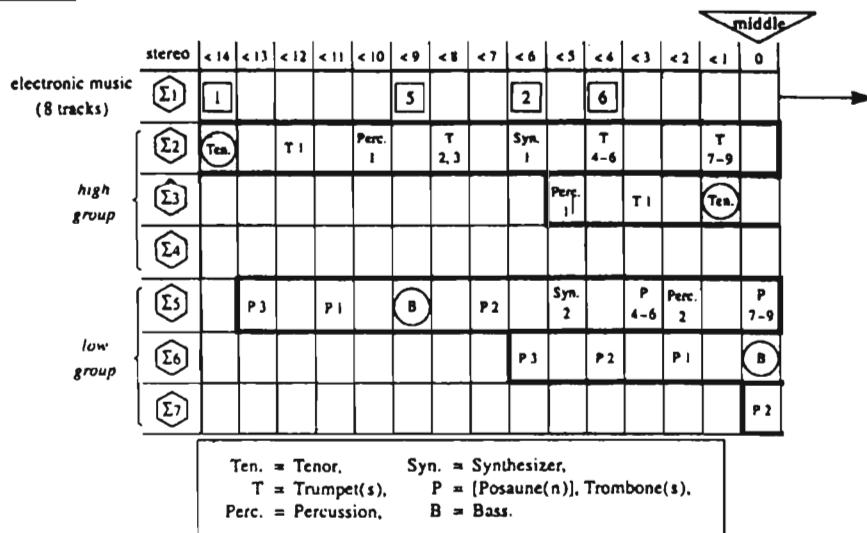
I had to convey these movements stereophonically.

On August 3rd and 4th and from August 7th to 11th 1995, I mixed down a stereo recording of the 1st, 2nd and the beginning of the 3rd INVASION, assisted by recording engineer Peter Esser and recording technician Dirk Franken in the *WDR Studio* at the *Philharmonic Hall* in Cologne (*Capricorn mixing console*).

The stored results of this mix were copied via 6 group faders onto a 24-track tape $\langle 1d \rangle$ as 6 stereo sums. During this, the two linked tape recorders were operated synchronously using 2 control consoles:

- a) The stereo sum Σ_1 as a panorama of the *electronic music* with 8 panorama settings of the tracks $\boxed{1} - \boxed{8}$
from $\langle 1A \rangle$ 1 2 3 4 5 6 7 8 recorded on tracks $\boxed{1} - \boxed{2}$
of tape $\langle 1d \rangle$.
- b) The stereo sums Σ_2 Σ_3 Σ_4 comprise three different panoramas of the *high group* (tenor, trumpets 1, 2, 3, 4–6, 7–9, synthesizer 1, percussion 1), namely left – middle – right, successively recorded on tracks $\boxed{3} - \boxed{4}$, $\boxed{5} - \boxed{6}$, $\boxed{7} - \boxed{8}$ of tape $\langle 1d \rangle$ (see *panorama-scheme* on the next page).
- c) The stereo sums Σ_5 Σ_6 Σ_7 comprise three different panoramas of the *low group* (bass, trombone 1, 2, 3, 4–6, 7–9, synthesizer 2, percussion 2), namely left – middle – right, successively recorded onto tracks $\boxed{9} - \boxed{10}$, $\boxed{11} - \boxed{12}$, $\boxed{13} - \boxed{14}$ of tape $\langle 1d \rangle$ (see *panorama-scheme*).

1st and 2nd INVASION | panorama distribution for *high group* and *low group*



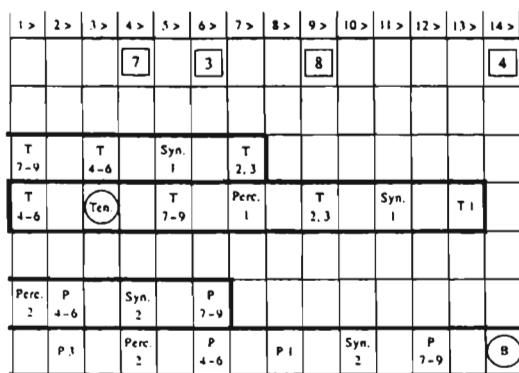
Each channel of the *Capricorn mixing console* has a button with 14 dots for left and 14 dots for right panorama setting:

middle



(on the console there are, however, no numbers, but only white dots).

(Continuation of panorama distribution for the **1st and 2nd INVASION**)

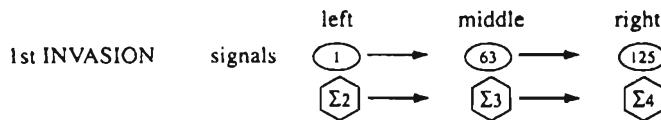


Since in the *Capricorn mixing console* only *stereo reverberation* can be set, which always affects all open channels, during the 1st copying process Σ_1 (electronic music without reverberation) and Σ_2 were copied simultaneously; afterwards, however, the sums Σ_3 to Σ_7 individually.

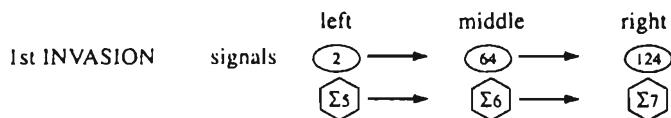
Reverberation: *Lexicon unit, Large and Stage 1.7 sec.*

The setting of the reverberation panorama in each channel was identical with the panorama setting indicated above.

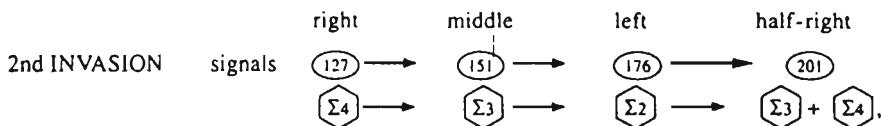
After copying the stereo groups Σ_1 to Σ_7 onto the 24-track tape ID_1 , I copied the *high group* of the **1st INVASION** onto tracks 15–16 of this tape (signals 1 – 126 in the score), signal by signal from tracks 3–4, 5–6, 7–8 using 3 group faders with continuous movement left → middle → right:



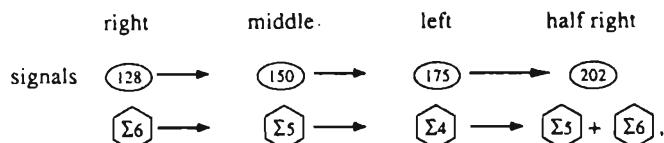
and then tracks 9–10, 11–12, 13–14 using 3 group faders left → middle → right onto tracks 17–18:



I regulated the **2nd INVASION** (signals 127 bis 202 in the score) right → middle → left → half-right with the following movement; the *high group* first:



which I copied onto tracks 15–16, and then the *low group*:



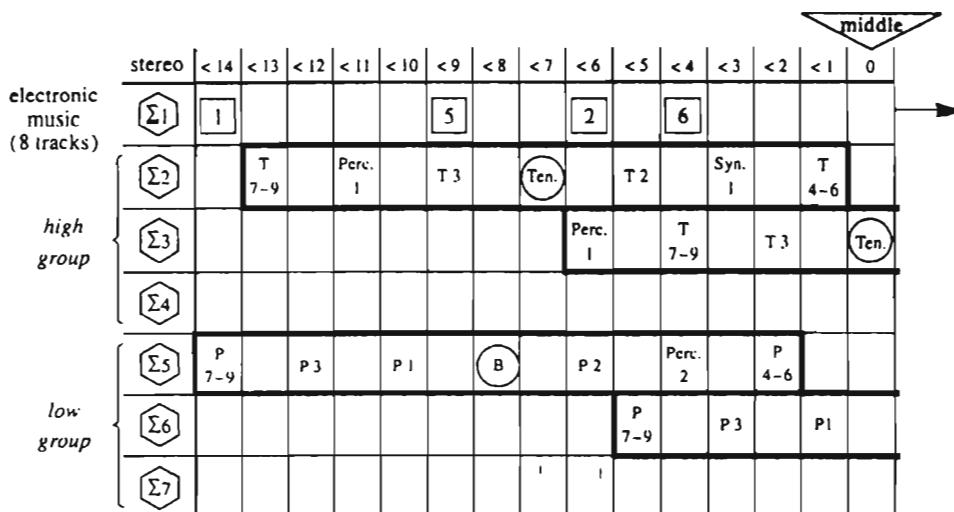
which I copied onto tracks 17–18.

I then copied tracks 15–16 (*high group*) and 17–18 (*low group*) signal for signal balanced onto tracks 19–20.

3rd INVASION

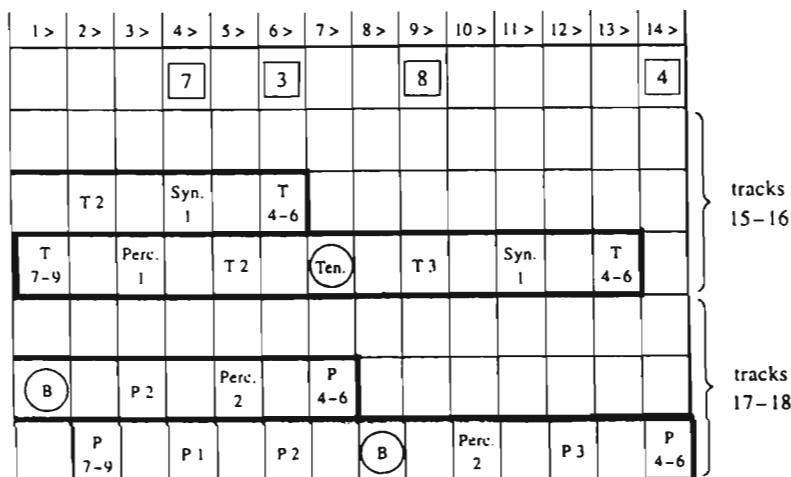
On August 24th 1995, assisted by recording engineer Daniel Velasco-Schwarzenberger and recording technician Dirk Franken, I copied the security copy of the **3rd INVASION** ID_2 of April 8th 1994 in 7 stereo groups onto a further 24-track tape ID_3 : **3. INVASION stereo groups**, as I had done for the 1st and 2nd INVASION earlier, but with 2 x 3 other panorama distributions for *high group* and *low group* (see illustration on the following pages).

3rd INVASION panorama distribution for *high group* and *low group*



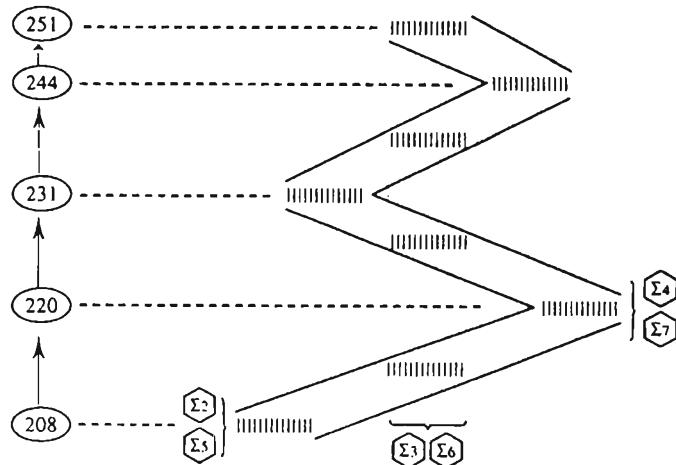
Ten. = Tenor, Syn. = Synthesizer,
T = Trumpet(s), P = [Posaune(n)], Trombone(s),
Perc. = Percussion, B = Bass.

(continuation 3rd INVASION panorama distribution)



I regulated the *signals* of the 3rd INVASION as a continuous zig-zag movement through transitions, aided by the group faders.

Signals



I copied the *zig-zag* movements of the *high group* onto tracks 15–16, those of the *low group* onto tracks 17–18.

Then I copied these tracks 15–16 and 17–18 with group faders **balanced** onto tracks 19–20.

On August 25th and 28th I mixed the final result onto the tapes $\langle ID_1 \rangle$ 1st and 2nd INVASION and $\langle ID_2 \rangle$ 3rd INVASION:

Tracks 1–2 *electronic music* (stereo Σ_1) and the tracks 19–20 **high and low group** with movements and balanced.

During this, I regulated the *electronic music* during the *signals* circa 10 dB softer, with $>$ before the signals and $< 0 \text{ dB} >$ in the rests between the signals.

I copied the final result, *electronic music plus high and low groups*, onto tracks 23 and 24.

On August 29th a security copy was made 1:1 from the tapes $\langle ID_1 \rangle$ and $\langle ID_2 \rangle$ onto a single tape, designated as the **security copy of $\langle ID_1 \rangle$ and $\langle ID_2 \rangle$** .

The result on tracks 23 and 24 of tapes $\langle ID_1 \rangle$ and $\langle ID_2 \rangle$ was copied onto DAT.

Summary of all results

On August 31st 1995 we joined together the following results of INVASION – EXPLOSION with FAREWELL – using *Sonic Solution* – in Studio 91 of the main WDR building at Wallrafplatz:

- 1) The beginning until 8'35.4" from *U-Matic Copy 1994 of the stereo-mix master copy OCTOPHONY (Studio for Electronic Music, February 1994)*;
- 2) 1st INVASION 8'35.4" until just after 17', from the **stereo result** of August 29th 1995;
- 3) continuation with the **stereo-mix** of OCTOPHONY until 23'40.3";
- 4) 2nd INVASION 23'40.3" until just after 29'42.2", from the **stereo result** of August 29th 1995;
- 5) continuation with the **stereo result** of PIETÀ duet version from April 5th and 6th 1994, from the *U-Matic* copy of April 6th 1994, until the beginning of the 3rd INVASION (*electronic music tape* 2 at 10'00", page IN-EX 28 of the score);
- 6) 3rd INVASION (10'00" until 13'00") from the **stereo result** of August 29th 1995;

- 7) BEYOND – SYNTHI-FOU – FAREWELL starting at score-timing 10'00" until the end, copied from *U-Matic tape* of February 18th 1994.

During the final montage of Act II INVASION – EXPLOSION with FAREWELL, the final fade-out had to be corrected, raising the level 4 dB as of score-timing circa 28'35", so that the last note can be heard until the end.

The finished tape of INVASION – EXPLOSION with FAREWELL has a duration of 1:12'30" with final fade-out until 1:13'. On September 1st 1995 it was copied onto *U-Matic* tape, onto DAT tape and onto a *WDR CD*.

In order to make the description of the recording and mix-down of the three INVASIONS continuous, the previous text followed the time jumps from January 1993 to September 1995.

In between, however, the studio recordings and mixing-down of PIETÀ and FAREWELL took place in February, September, October 1993 and February 1994. Recording and mixing down of PIETÀ are comprehensively described in the booklet of CD 43, that of FAREWELL in the booklet of CD 42.

Policy guidelines for the legal deposit of sound recordings

Prepared by the IASA National Archives Committee

1. **Background.** Legal deposit is a statutory provision, widely applied across the world, which places a legal requirement on producers of publications to deposit their works in designated institutions. Although legal deposit requirements have mainly been applied to printed publications, sound recordings are considered of equal importance to printed material as part of the cultural and intellectual heritage
2. **Purpose.** Material acquired through legal deposit serves three related, but distinct, purposes. It enables the collection and preservation of all published works of value to current and future research; it ensures that published material will be available to users when it is no longer possible to acquire it in other ways; and it provides a means of compiling the national bibliography of published material.
3. **Criterion for deposit** Since the purpose of legal deposit is to maintain a national published archive, the criterion for deposit should be the publication of the item. A work is considered to be published when:
 - a) copies of the work are offered to the public for sale or hire or for distribution without charge, or
 - b) the work is broadcast to the public, or
 - c) the work is performed before an audience in a place which is open to the public, or a copy of the work is made available, for payment or otherwise, through a technology enabling the public to read, view, hear or otherwise use or consult the work in whole or in part.

4. **Key principles for the legal deposit of published sound recordings should be:**
 - a) **comprehensiveness** - provision should include all recordings irrespective of carrier.
 - b) **notification** - publishers should be required to deposit all published catalogues of their product with the repository.
 - c) **no exemptions** - no organisation or body which publishes sound recordings should be exempt.
 - d) **no payment** - physical material should be deposited at no cost to the repository.
 - e) **number of copies** - publishers should be required to deposit two copies of the published item, one for access and one for back-up security and preservation. The two copies should be delivered to a single repository designated as the appropriate location for them.
 - f) **selection** - repositories should have the discretion to reject material offered for deposit in specific cases where the expense of preservation outweighs cultural importance, or in the case of broadcast material which mainly comprises recordings already held.
 - g) **materials of required standard** - material should be deposited in good condition. Where identical products are issued on parallel formats, the repository shall be entitled to determine which is more appropriate for deposit.
 - h) **continued possession of materials** - the repository shall have the right to uninterrupted possession of physical materials deposited.
 - i) **the right to copy** - The repository shall have a limited right to make copies, digital or analogue, of deposited material to support the functions of preservation and access.
 - j) **the right to show or play material** - The repository shall have the limited right to provide free public access on its own premises to deposited material.

5. **Responsibilities of the repositories.** Repositories which are assigned the privilege of legal deposit accept responsibility for the publications and for meeting required standards of storage, maintenance, preservation, bibliographic control and public use facilities. The costs of caring for the legal deposit publications in places of deposit will be borne by the organisations which maintain them.
6. The ongoing costs of the maintenance of the national published archive should be taken into account when the designated repositories receive grant in aid from the appropriate public funding bodies.
7. **Ownership of publications.** Items deposited under the provisions of legislation would form part of the collections of the designated repository whose responsibility it would be to ensure that they were made available, appropriately, for research purposes and to endeavour to preserve them. Inalienable ownership of the physical item should be vested in the repository: this would not alter the copyright protection in force.

Copyright and Legal Deposit in Uruguay
Graciela Dacosta, University School of Librarianship
Montevideo, Uruguay, presented at the
IASA Conference in Muscat, Oman, 1997

This paper provides an overall idea of current Copyright and Legal Deposit law in Uruguay. Even though Intellectual Property Law dates from 1937 (with very few amendments), there have been prior attempts in the area that are worth mentioning. With regard to Legal Deposit, the provisions were broadened in 1970 and again in 1996 but none of the changes so far have encompassed the enormous expansion in the output of audiovisual media and emerging technologies.

Copyright law

A year before Uruguayan independence (1830), the Provisional Government passed a law in support of the freedom of the press, although it included strong warnings to prevent people from committing acts that could be harmful to "our Holy Religion, public morality and good customs".

In 1912 the first *Copyright Law* was enacted, fairly extensively improved by the current *Intellectual Property Right Law* of 1937 (1). It has 66 articles and its main characteristics can be described as follows:

a) Protection of moral authorship in any literary, scientific or artistic work. This right comprises the right of copying, publishing, translation, performing or authorising others to represent them.

The scope of reproduction covers different means: press, cinema, audio playing, transcripts of unedited materials, translations of languages and dialects, public performances and all means of communication.

b) Types of materials (this list is not exhaustive)

- * printed matter: brochures and books
- * manuscripts
- * graphic materials: photographs, illustrations, drawings, paintings, engravings
- * coreographies, pantomimes
- * cartographic media: maps, plans, charts, atlases
- * architecture and sculpture works
- * television (note that this was foreseen in 1937)

This section ends with a statement that anything produced by human intelligence is protected by intellectual property rights as long as the creation is registered according to Law.

c) copyright holders:

- * authors (and its heirs)
- * collaborators
- * those who acquire the rights of the work
- * translators
- * interpreters of literary or musical works
- * the Government

d) duration of property rights.

Authors are lifetime rightholders and their heirs retain the rights until forty years after the author's death. With our adherence to the Berne Convention, this has changed to fifty years.

Finally, it covers works in the public domain although some restrictions still remain.

e) piracy/illegal reproduction

Here the law is enumerative, providing many examples whether a copy can be considered illegal or not, and stating penalties.

f) work registration

Authors must register their work in the National Library and deliver two copies to the Copyright Department. For certain types of materials, e.g. photographs, two stills are requested instead.

The material held in the Copyright Department is not available to the public. Data about the registered intellectual property is published three times in the *Official Bulletin* and after one month, a definitive property certificate is given to the interested party.

g) Copyright Board

This item has been amended in 1990. The Board now comprises five honorary members directly appointed by the Ministry of Culture and Education, excluding the representatives of different Associations (Writers and Press among others).

Its members look after the adequate application of the Intellectual Property Law, solve controversial cases, and provide advice when requested.

LEGAL DEPOSIT

Printed and graphic materials : the starting point

The Departments of Copyright and Legal Deposit are located in the National Library, although they work independently from each other. The beginning of a kind of Legal Deposit is supposed to be found as a Resolution, in September 1842. Press owners were asked to send one copy of any printed matter to the National Library, the idea being that it would act as a depository of "documents and data relevant to the understanding of time". No doubt "time" meant "heritage" one hundred and fifty years ago but this Resolution did not take shape until 12 July 1893 (2) when the "Honorable Chamber of Representatives" obliged printers to deliver the above mentioned copy. Infringements were first subjected to fines or in default, imprisonment. Time did not permit me to discover the impact of this law, but one may presume Uruguayan jails and infractors were not too much worried about it. This deposit was created mainly for inventory purposes although the spirit of having an instrument to safeguard our national heritage already existed.

Legal deposit in force : printed matter and graphic material in general

In January 1970, Law No. 2.239 was modified (3). Printers and related businesses were subject to a free and compulsory deposit according to the following classification:

1) three copies of graphic materials: books, brochures, serials, journals, bulletins, law compilations, minutes, exhibition and bibliographic catalogues, maps, atlases, geographical charts, guides and books of art.

Two copies are kept in the National Library and thus made available to the public. A third copy must be sent to our Parliamentary Library becoming then our second service with the privilege of Legal Deposit although the access to their holdings is strongly restricted.

2) one copy of other printed matter such as: speeches, postcards, almanacs, posters, photographs, music scores, playing cards and any other material issued in several copies, whatever the method used.

The size of fines was increased. Charged by the National Library, the money obtained in this way could be used to improve the service. To foster Legal Deposit, printers have tax exemptions when buying machinery, paper, etc., as long as they comply with regulations. They must print on the material, the words "Legal Deposit" and the number given by the National Library for that purpose.

Legal deposit of videograms, phonograms and broadcasting issues

It is not a coincidence that National Libraries share with Audiovisual Archives and Broadcasting Services, the responsibility of collecting AV media (E.g. France & United Kingdom).

Video and audio Legal Deposit exists in the Uruguayan Broadcasting Service for radio, television and performing arts (Servicio Oficial de Radiotelevisión y Espectáculos - SODRE). In 1967 the Government obliged phonographic editors to send two copies to SODRE of all discs manufactured for commercial distribution. This was extremely controversial: producers were reluctant to deposit audio cassettes and likewise, later, compact discs. Argentina underwent the same problem, that is why in 1989 the expression "phonographic discs" changed into "phonograms".

By January 1996, a more ambitious revision was made. The Uruguayan Parliament approved in December 1995 a new Legal Deposit for sound recordings. Two copies of all discs, magnetic tapes, cassettes, compact discs or any other format containing phonograms, produced in the country or recordings of national artists produced abroad by companies established in the country, will be sent to the Uruguayan Broadcasting Service for Radio, Television and Performing Arts (SODRE). SODRE has also been created to acquire Video Legal Deposit and is entitled to two copies of all video programmes produced in the country.

Fines equivalent to ten times the retail price will be imposed if deposit is not made. It has also been declared by law that programmes broadcast by SODRE either by radio, television or any other way belong to them, and prior consent of SODRE is required in the event of reuse (4).

The fact that SODRE claims the rights of broadcasted programmes and its reuse, will not be discussed here. The lack of professional advice in this matter is clearly understood. In spite of the Law, AV Legal Deposit has not been put into practice as there is no supervision regarding editing and distribution companies and it actually works as a voluntary deposit.

References

- (1) Law No. 9.739
- (2) Law No. 2.239
- (3) Law No. 13.835, articles 191-193
- (4) *Audiovisual Librarian*, Feb. 1996

Appendix

International Law approved by the Uruguayan Government

* Berne Convention

- Adherence to the Convention on May 2 1967 (Decreto-Ley No. 275). Article 64 of Intellectual Property Right has already mentioned this in its 1937 Law.

- July 1979: approval of Paris (1971) and Stockholm (1967) Acts through Law 14.910. Regulations stated in Paris Act Appendix are not applicable in Uruguay.

* Rome Convention of 1961 about the Protection of Performers, Producers of Phonograms and Broadcasting Organizations. Approval by Law No. 14.587, Oct. 1976.

* Geneva Agreement for the Protection of Producers of Phonograms, 1971. It became into force on May 1982, Law No. 15.012.

* Uruguayan Round on Multilateral Trade Negotiations. Agreements of the Final Act, Marrakesh, April 1994. The Government approved these on December 1994, Law No. 16.671. (They include aspects of intellectual property legislation)

REVIEWS

The Orchestra On Record, 1896 - 1926. An Encyclopedia of Orchestral Recordings Made by the Acoustical Process. Compiled by Claude Gravely Arnold, C.S.B. - Westport: Greenwood Press, 1997.- 695 pages.

The title and sub-title of this new work say it all. When this volume is opened, one is almost overwhelmed by the amount of information contained in its pages. This is a magnificent reference book which should be ranked alongside other landmark works, such as the highly-esteemed discographies of Brian Rust, *et al.* What the compiler - Claude Graveley Arnold - has done is to collect and collate details of some seven thousand *acoustic* orchestral recordings, and arrange them in such a way that people may readily access the information on any recording they so choose.

The survival of some nineteenth-century catalogues and actual recordings has enabled Arnold to commence his entries as far back as 1896 (1). At the opposite end he chose December 1926 as the cut-off date; an appropriate choice, since by that time the major companies (Columbia, Edison, the Gramophone Co., Odeon/Parlophone, Victor, and probably Brunswick and Polydor) had discontinued the production of new *acoustic* orchestral recordings.

Spatial considerations dictate that any listing must be confined within defined parameters. Thus, Arnold's definition of *orchestra* appears to have included any combination of multiple strings and winds. It is therefore understandable that recordings of works played by *wind bands*, but originally scored for full symphony orchestra, have been excluded. However, works written for winds alone by Beethoven, Herbert, Holst, Mendelssohn, Mozart, Sibelius, Strauss (Richard), Wagner and Williams are included. Naturally string only orchestras are also covered, as are pertinent contributions by some of the "light" orchestras, such as Dajos Bela and Edith Lorand.

Whilst the recordings surveyed are mainly of music in the mainstream classical repertoire, Arnold has also included a number of lighter musical items by composers such as Ganne, Ketelbey, Lehár, Lincke, Pierné, Popy and Sousa.

All concerti and other works(e.g. Bruch's *Kol Nidrei*, Lalo's *Symphonie Espagnole*) which feature an instrumental soloist are included. In addition, *orchestral* works in which a voice(or voices) play an essential part (e.g. Beethoven's Ninth Symphony) receive full coverage. On the other hand songs and vocal excerpts from opera and operettas have had to be ignored, unless they had been rearranged for orchestra. However, overtures, intermezzi and postludes belonging to operatic and other vocal works are fully covered. N.B. Where an entry refers to an excerpt (e.g. overture)

All concerti and other works(e.g. Bruch's *Kol Nidrei*, Lalo's *Symphonie Espagnole*) which feature an instrumental soloist are included. In addition, *orchestral* works in which a voice(or voices) play an essential part (e.g. Beethoven's Ninth Symphony) receive full coverage. On the other hand songs and vocal excerpts from opera and operettas have had to be ignored, unless they had been rearranged for orchestra. However, overtures, intermezzi and postludes belonging to operatic and other vocal works are fully covered. N.B. Where an entry refers to an excerpt (e.g. overture) from a complete work - such as a Gilbert and Sullivan Opera - and the work has been recorded in full, a footnote will indicate that the orchestral excerpt is part of a complete recording, and will provide catalogue numbers and information on the other records in the set.

Entries are as complete as anyone might desire. Wherever possible Claude Arnold has furnished details of orchestra, conductor and soloist, as well as record company, catalogue number, matrix numbers, recording dates and issue dates. In addition where catalogue numbers in diverse countries (e.g. France, Germany, Italy, Russia, Spain, the U.K. and the U.S.A.) differ from one another, the alternatives are provided. The criterion for first catalogue number entry appears to be choice of first country in which the recording has been issued. Furthermore, should the original issue have been withdrawn then later reissued under a changed catalogue number, the new number is shewn, together with the date of reissue. This also applies where two single-sided releases have been combined - at a later date - into a single double-sided issue.

Not every entry contains all the above data, since Arnold could only work from the material that was available to him at the time of compilation. Lest it be thought that a majority of entries have insufficient information, it should be emphasised that most do include all the data specified above. It is mainly in entries prior to approximately 1905, that omissions may occur. Understandably. Whilst Arnold has supplied a listing of the catalogues and discographies from which he has obtained his material, one can only marvel at the volume of information he has been able to unearth. For every entry of which the writer of this review was previously aware, there must be another forty or fifty entries. Likewise, for most of the already known entries, much additional information becomes readily available.

The work is structured in a somewhat similar manner to the English *Gramophone* six-monthly catalogues. Composers' surnames are listed in strict alphabetical order. Their compositions are also listed in alphabetical order, generally with their European spelling(e.g. Rossini's *William Tell* becomes *Guillaume Tell*); chronological order of recording dates determining the sequence of entries for each composition.

Certain works which were very popular and much recorded in the early years of the twentieth century (e.g. Gounod's *Faust Ballet*, Tchaikovsky's *Nutcracker Suite*) have been provided with additional Chronologies of Recordings. These are at-a-glance tables which just display recording date, excerpt identification and conductor (or orchestra) - a worthwhile bonus. Strangely, Grieg's *Peer Gynt Suites* - for which there are over fifty separate entries - have not been so favoured.

There are separate indices for conductors, orchestras and soloists at the rear of the book. This is an improvement on *The Gramophone Catalogue's* Artist Index, in which all three categories are grouped together. But, rather than referring the reader to composer and (then) composition, the entries in these indices refer to page numbers only. This is not completely satisfactory, because there can often be multiple entries on the one page for the same orchestra and/or conductor, and it is not easy to know as to whether certain works have or have not been recorded by a particular conductor(or orchestra), without referring to the actual composition. For example, entries for two separate recordings (Odeon, 1912 and Columbia, 1916) by Sir Thomas Beecham of the overture to Mozart's *Le Nozze di Figaro* are only identified by their page numbers in the Beecham section of the conductor index. As the Beecham section lists thirty-two separate page entries, one can imagine the extra time taken in finding his *Figaro* recordings. If one already knew that there were one or more Beecham recordings of the overture, then it would be simpler to proceed directly to the *Nozze di Figaro* entry in the main body of the book, where twenty-one separate recordings are listed over two pages.

Furthermore, it would be a tedious task to quickly compile an elementary discography of a conductor or orchestra, since every page referral would have to be individually examined; and, if that conductor were Albert Coates, that would amount to thirty-one separate pages. The number of entries for some other conductors(e.g. Leo Blech, Landon Ronald, Carlo Sabajno) would be double those for Coates.

Appearing in the Gramophone Co.'s Australian catalogue of 1912 is a set of 4 x 12" s/s records entitled *Musical Memoris* (Pts.I-IV), played by the Palace Theatre Orchestra, catalogue nos. 0549, 0550, 0551 & 0552. Although the Palace Theatre Orchestra is listed in Arnold's index, no entry could be found for these recordings. The same applies to *Fantasia on Scottish Airs* (Pts.I & II), played by De Groot and the Piccadilly Orchestra, HMV 12" d/s cat. no. C1080. This is possibly due to the lack of a suitable section in Arnold's book. Collections and medleys of divers compositions pose especial problems for catalogue compilers, since they cannot be attributed to a single composer. *The Gramophone Catalogue* has overcome this by adding a separate section designated *COLLECTIONS*. Perhaps such a section could be included in a revised edition of this work?

In his preface, Claude Arnold points out that *acoustic* orchestral recordings have never previously been subject to specialised research; and that his aim was to begin the task of discovering and organising the history of such recordings; this mammoth assignment he has more than accomplished. Nevertheless, no matter what assistance might have been available, minor omissions may occur. This reviewer was able to find partial details of several items which do not appear in his encyclopedia. A selection follows:-

1. DELIBES	La Source Ballet selections 1 - 4	Mayfair Orchestra	2 x 12" s/s Gram.	0618 - 9
	later coupled together and reissued as	12" d/s HMV	C 250	
2. LEHAR	The Merry Widow March (Oh, You Women!)	Bohemian Orch.	10" s/s Gram.	781
3. LEHAR	The Merry Widow Maxim march	Bohemian Orchestra	10" s/s Gram.	782
4. LEHAR	The Merry Widow Waltz	Bohemian Orchestra	10" s/s Gram.	783
5. LINCKE	Glow Worm - Idyll	Metropolitan Orchestra	12" s/s Gram.	0597
	later coupled with MYDDLETON's Phantom Brigade (Metropolitan Orch.)	12" d/s		
	HMV C 146			
6. VOELKER	A Hunt in the Black Forest	Victor Orchestra	12" s/s Gram.	0566
7. HAYDN	'Cello Concerto in D (2nd & 3rd movements - adagio & allegro)			
	Arnold Földesy with Orchestra	Polydor 15910 ("Cat no" 0947856-57 [R], matrix 1129-30m)		

My thanks to Anthony Cane of Sydney, Australia for the information on the Haydn *green* label 12" d/s Polydor pressing, which is one of the items in his collection. All HMV s/s data taken from the Gramophone Co.'s Australian catalogue of 1912, d/s data from the U.K. HMV catalogue of 1924.

Note that item 7 above is a *green* label Polydor (i.e. the budget 15000 series), of which Arnold writes(in his Introduction) "...Material first issued on *Black* label often reappeared on *Green* label (15000), but no orchestral records of any importance figured in this reduction". Did the Haydn *Cello Concerto* excerpts originally appear on mid-price *black* label (i.e. the 65000 - 66000 series), or was this recording overlooked because it only belonged to the 15000 series?

These relatively insignificant examples should not be taken as criticism of such a noteworthy publication, but rather as offerings for inclusion in a revised edition. Hopefully, other users of Arnold's work will be kind enough to furnish him with any additional data that they may possess, for similar inclusion.

With coverage ranging from the trivial music of composers such as George Gershwin, Victor Herbert, Ferencz Lehár, Emile Waldteufel to the symphonies of Brahms, Bruckner and Mahler; from the light orchestras of Dajos Bela, Edith Lorand, Marek Weber, and Paul Whiteman to the Philharmonic and Symphony Orchestras of Berlin,

Boston, London, New York, conducted by Thomas Beecham, Willem Mengelberg, Arthur Nikisch, Arturo Toscanini, Bruno Walter, this most significant volume can be unconditionally recommended to anyone interested in furthering his knowledge of the composers, conductors and orchestras appearing on *acoustic* orchestral recordings.

Whilst the name of Claude Arnold may be well known to residents of North America, others may be left with the query "Who is this remarkable man who has compiled this magnificent encyclopedia?" All we know is contained on the last page of his book - "*CLAUDE GRAVELEY ARNOLD, C.S.B., a member of the Congregation of St. Basil, is a Roman Catholic priest. Until his retirement in 1995, he was a Professor of English at St. Michael's College in the University of Toronto.*"

Notes

1. Orchestral recordings of waltzes by Johann Strauss II appear to have been particularly popular with the recording directors of the 1890s. Listed in Arnold's book are some thirty separate entries dating before 1900 of compositions by Strauss II; with the earliest Edisons being six cylinders from 1896, the earliest Columbias being two cylinders from 1897 and the earliest Berliners being eight 7-inch discs from 1898.
2. For instance, when the writer of this review comes upon a relatively unknown conductor (e.g. Henry Hadley, Gennaro Papi, Otto Urack, Bruno Weyersberg etc.) it would be nice to know in which area of the repertoire he specialised.

Paul de Noskowski

Paul de Noskowkis is a member of the Australasian Sound Recordings Association (ASRA). From 1968 until 1974 he was Chief Engineer to EMI's Australian Recording Studios and thereafter an independent audio engineering consultant until his retirement three years ago.

Jaco van Witteloostuyn: *The classical long playing record: design, production and reproduction. A comprehensive survey.* Rotterdam; Brookfield, VT: A. A. Balkema 1997; X, 507 pp., illus.; ISBN 90-5410-642-5: Hfl. 195 / £ 65 / \$ 95 (cloth).

Although long playing records are occasionally still being manufactured, the era of the black disc can already be considered over for a decade. And it is fitting that now a large book has been published that deals with this very time-span of only (!) 35 years during which the LP was the main mass-produced format for sound recordings. Jaco van Witteloostuyn bases his survey on an enormous number of second-hand records that have gone through his hands as both a record collector and an antiquarian dealer. He attempts to deal with almost everything that relates to the actual artefact, the disc and its cover.

Witteloostuyn's book falls into various sections. There is a chronology of sound recording (pp. 11-28), followed by a brief description of producing recordings which has been spiced with anecdotal writings from artists. The first part continues with practical remarks on the handling, storage, and playback including restoration of LPs and the description of the various systems according to which matrix numbers were assigned to the releases of the British Decca label, of EMI, Lyrita, Mercury, and RCA Victor. This latter section is somewhat strangely titled "appreciation". "The listening environment at home" follows. This is a chapter on the ideal acoustic conditions for listening to sound recordings.

The first part is concluded by the most fascinating chapter of the whole volume. Titled "Cover culture" (pp.87-179), this is the first attempt to structure the artistic possibilities, changes, and fashions for cover design in terms of marketing and not on pure artistic grounds. What makes this chapter so entertaining is the abundance of colour illustrations. It would have added to the sleeve illustrations' value to cite the record numbers.

Part Two, which is the book's largest section, deals with the dating of labels (pp. 183–473). The main section of this part is a table (slightly misleadingly titled "Discography (bibliography)" that lists labels and their numbering systems. The section's coverage is world-wide. It is, so to speak, a continuation of WERM's "Guide to the main record prefixes of the leading European companies" (on pp. ix-xiii of the main volume of WERM) and of the listing given in Creighton's *Discopedia of the violin*. But in contrast to these two former listings, it structures the prefixes, suffixes, and numerical series chronologically by assigning the numerical series to the following periods: "through 1954 / 1955–1958 / 1959–1964 / 1969–1973 / 1974–1978 / 1979–1981 /

1982–1985 / 1985+”. Part Two can certainly be very useful for the rough dating of records. The publications is concluded by a bibliography and an index.

To sum up, this folio-size book has been written primarily for collectors of LPs and not so much for those who are interested in the sound coming from the classical long playing record. Nevertheless, this survey is truly comprehensive in what it attempts and it is a very important reference tool for all collectors, archivists, and researchers of recorded sound. With around 500 colour illustrations, mainly of very well chosen sleeves, it is also both a delightful and instructive visual object. It would have added to its value as a reference book to cite the record numbers for the sleeve illustrations.

Martin Elste
Staatliches Institut für Musikforschung PK, Berlin

Philip Stuart: *The London Philharmonic discography. Compiled by [...] Westport, CT; London: Greenwood Press, 1997. - viii, 533 pp., (Discographies. No. 69. ISSN 0192-334X), ISBN 0-313-29136-5: £ 79.50 (cloth).*

Being established in 1932, the London Philharmonic Orchestra (LPO) is a fairly new orchestra. Its inaugural concert set new standards in orchestral playing in the British Isles, and already a few weeks before that concert took place, the orchestra made its first gramophone recording. Since then, the LPO participated in some 1000 recording projects, first exclusively for EMI, after World War II also for Decca, and with the advent of tape recording and the long playing record for a number of smaller companies such as Westminster. This lead to the use of pseudonyms due to contractual commitments – as also the opposite happened occasionally, i.e. the orchestra's name was used for labeling recordings done by other orchestras. In the past three decades, virtually all major and many small companies recorded the LPO. Due to competition from Eastern European orchestras and a rise in the reputation and standard of British provincial orchestras, since the early 1990s, recording has, however, become more and more sporadic in line with the other London symphony orchestras.

Nevertheless, the LPO has played a major role in the making of classical music recordings. Its playing style has been disseminated throughout the world on both, prestigious and expensive coffee-table recordings as well as budget products sold on racks in supermarkets.

Philip Stuart was granted access to the official papers at the LPO's office. This proved invaluable for the way he documents the recording work of the orchestra as he lists the

recording projects (rather than the actual sessions) – some 1200 up to 1996 – in chronological order. When recording projects are concluded by sessions at a later date, those sessions are listed separately (though reference is made to the main entry of the first sequence of sessions).

In addition to the files, Stuart consulted label catalogues, record magazines and other secondary sources as well as the discs themselves in record shops and archives.

The discography proper is preceded by a brief but informative historical sketch and some useful explanatory notes. A welcome feature are short notes about the record companies and labels. These notes are inserted between the discographical entries when the company/label appears for the first time, and it is referred to it thereafter whenever the company/label hired the orchestra again for another recording project.

The discographic data are detailed. Producers and engineers, recording location, artists, compositions, and record numbers with issue dates are given. As for record numbers, Stuart standardizes them and uses a dot instead of a horizontal hyphen which separates sections of a record numbers. Thus, Decca 411 969-2 becomes 411 969.2. This is an otherwise uncommon practice, used before only in Stuart's Stravinsky discography. Yet as he is consistent in applying this standardization, one can easily live with it.

Stuart also lists video recordings. They are interspersed between the sound recording projects at their proper chronological places, but they have been given their own numbering sequence, preceded by a "V". This makes it difficult to locate a given entry within the book as the reader has no other option than to browse through the pages unless he/she happens to look for the concordance hidden on p. 498! On the other hand, film soundtracks and recordings with the London Philharmonic Choir together with other orchestras are listed in separate appendixes.

There is also a useful listing of the principals in all sections, and an index of recording locations. Other specific indexes are by conductors, composers and their works, and a general index lists names of others such as soloists and producers.

This is clearly a discography and not a record catalogue, as the information gathered is going beyond the information given on the actual records and their accompanying material such as sleeves, booklets etc. The well produced book will prove indispensable for researchers of recorded classical music. It is highly recommended for the reference section of any sound archive collecting classical music recordings.

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Irdial Discs 59 IRD TCP1: The Conet Project: recordings of shortwave number stations

Irdial Discs 62 IRD TCP2: Electric Enigma: the VLF recordings of Stephen P. McGreevy

Irdial Discs is a small, effectively one-man record company based in London with an unusually mercurial range of releases. Two of particular interest to sound archivists are *The Conet Project* and *Electric Enigma*. Both are accompanied by exemplary booklets full of information about the contents and the way they were compiled.

The first of these is a set of recordings on four CD's of so-called 'number stations' caught on tape from short-wave radio transmissions. These are simply broadcasts of sets of numbers or (less often) letters, read out clearly, often by a woman's voice, sometimes that of a child, often quasi-robotic or synthesised.

The numbers stations appear to be a mystery. No-one admits to running them; they can be found in the ether and their very lack of provenance lends a dimension of mystery and other-worldliness to the whole phenomenon. Anyone familiar with the ghostly collage of European continental stations which breaks through into evening AM broadcasts in the U.K. will be prepared for the electronic tapestry presented here.

The sequences of numbers are read out in a variety of languages: English, German, Russian, Italian, Japanese, even in police-style alphabetical identifiers (Alpha, Bravo, Charlie, etc.) and come and go in traditional short-wave fashion through the usual melee of distortions, hums, whistles, Morse code bleeps and superheterodyne effects. Some use a sequence of jingles reminiscent of an ice-cream van, others a short piece of classical music (Enesco's *Romanian Rhapsody* may or may not indicate the source of one particular transmission) to engage the recipient's attention. Others simply start and repeat the sequence of numbers over and over again.

The experience of listening to these recordings is, over time, very unsettling. What do the messages mean? At whom are they aimed? Are they connected with espionage? With defence?

The answer is probably "yes" to both. During the Cold War years there was a feeling that nothing would surprise us in these circles, but these stations have apparently been recorded quite recently, and the geographical distribution suggested by the variety of languages represented implies a network that extends world-wide.

The sheer amount of material presented is overwhelming. (One of the disadvantages of CD's, in my view, is that they are invariably too long). It has to be said that fascinating and thought-provoking as they are, once the listener has accepted that each recording may differ in language, presentation, even distortion level, beyond these variables each recording follows a similar pattern. I am loathe to decry this bold project, but it is weakened rather than strengthened by its sheer size.

I hope I do not appear to be missing the basic point of the *Conet* discs by evaluating them from an aesthetic angle and finding them wanting. This is not the case: documentary-style projects like this serve their purpose most fully by being comprehensive. What does strike me, however, is that here we have a meeting of source material which would traditionally be of interest to security forces such as the FBI or the KGB being presented as a listener-friendly experience for the open-minded, fin-de-siècle CD consumer, antennae tuned into the Zeitgeist of a data-obsessed, technology-drenched society fundamentally lacking in certainties and which takes an increasingly cynical view of its own infrastructures.

The release of *The Conet Project* set caused a moderate ripple of media interest earlier this year with some coverage in the music press and interest being shown by at least one London-based radio station. It will no doubt be unavailable by now as it was released in a limited edition. The British Library National Sound Archive has, however, secured two copies and it can be listened to there by appointment.

The other set, *Electric Enigma*, is equally unusual. We are offered a set of just two CD's containing recordings made over a period of years by Stephen P. McGreevy, a Californian, of disturbances in the Earth's magnetosphere caused by electro-magnetic phenomena such as lightning and aurorae. These recordings could be described as the 'sound' of these events insofar as the recordist has developed equipment to capture the electro-magnetic disturbances and translate them into audio frequencies. If they can thus be heard, they can be recorded.

These powerful natural effects cover the whole spectrum of radio frequency information but are mainly VLF (very low frequency) events. The longer the wavelength the more easily the pulse will travel around the Earth and these recordings contain sounds of lightning strikes taking place thousands of miles away from the recordist's position. (Compare the low-frequency submarine communications of whales which can be received over vast distances).

The net effect of these recordings is rather like that of images we sometimes see from radio frequency telescopes or electronic microscopy: we are shown something with which we may be familiar but in a new and unexpected form. They consist, for the

most part, of a variety of whistles, pops, whispers, gliding tones, bubblings and twangs against a background electronic mist of gently coloured miasma. At one level these recordings are raw material of interest to scientific research into natural phenomena. However, the set is attractively packaged and the author refers to the sounds as "natural radio". From a phenomenological point of view, one is led to ponder what is going on here?

These discs offer a natural sonic experience which, to those attuned to developments in the field, is going to become another facet of electronic music. They would not be out of place in a collection of such music. Experimental electronic music has extended its tendrils into so many areas and bred an audience of such tolerant, open-minded and inquisitive listeners that what would twenty years ago have been considered scientific research material will now find a sympathetic audience for whom it will form a purely aesthetic experience and, no doubt, an agreeable one.

As with the *Conet Project*, this release could have been half as long and not suffered unduly. Nevertheless, these are two thought-provoking releases which offer, on the one hand, an awe-inspiring insight into the world around us and, on the other, a somewhat sinister, uneasy listening experience.

Noel Sidebottom

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British Library National Sound Archive.*

THE IASA BOARD CHARTS

A welcome return to a regular feature started in IASA Journal 8 in which members of the IASA Board are invited to write about the recorded sounds which first engaged their attention and those which they currently regard as indispensable listening (or viewing). Bearing their souls this month are President Sven Allerstrand and Treasurer Mark Jones.

PRESIDENT'S TOP TEN

Sven Allerstrand

Unlike many other members, music was not the reason why I joined IASA. I started my professional career at the Royal Library, the National Library of Sweden. In my country there has been legal deposit since 1661 and once I entered the library I got fascinated by the richness of the collection. There were not only books, papers and magazines but also all other sorts of printed material: menues, timetables, telephone directories, advertising leaflets, etc. dating back more than 300 years. After a while I started to wonder about the modern media, sound and moving images, and found out that they were not at all as well-documented as the printed items. I got upset by the thought that this material was abandoned and I suddenly knew what was my mission in life: to work for the safeguarding of the Swedish audiovisual heritage. To learn more in this field I applied for a job with the Swedish Broadcasting Company where I found my suspicions confirmed. Only a small part of the radio- and TV-broadcast was kept and preserved and extensive selection took place continuously. This was unsatisfying to say the least. The smallest item of print was kept for eternity while important radio- and TV-programmes such as news, debates and documentaries were demagnetized without any thought given to future needs. To my great delight things were about to be changed in Sweden. In 1979 the legal deposit was extended to all AV-media and when the ALB started its activities I was lucky enough to get the position as deputy director. That's when and how I joined IASA.

What about my top ten favourites, then? I agree with those who says that this is an impossible question and I will not even try to answer it. What I will do is just to give you a few examples of recordings I have been attracted to over the years. As IASA has stepped into the audiovisual world I take the liberty of starting with some visual items.

I run the risk of being regarded as a chauvinist but my two favourite films are in fact Swedish. One is world-famous: *Wild Strawberries* directed by Ingmar Bergman. Even if you are not a Bergman fan, you have to admire the magnificent performance of Victor Sjöström, the great silent movie director, who is playing the leading part. The other is more internationally unknown, I believe: *Raven's end* directed by Bo Widerberg. *Raven's end*, from 1963, brought something new and fresh into the Swedish film industry and the acting is really outstanding. My third choice would be *The 400 blows* directed by François Truffaut. A small touching masterpiece which to me was an excellent introduction to the French New Wave.

Now to the audio part. My first memory of recorded music was when my elder brothers brought a portable gramophone to our summerhouse. I must have been four years old and my recollections are a bit vague. I still remember the music, though, *Oh, didn't he ramble* by W.C. Handy. The year was 1948 and I don't know the name of the orchestra, maybe it was Kid Ory. This first experience of a gramophone record left me with a special feeling for New Orleans music and it still happens that I listen to some early Jelly Roll Morton, Sidney Bechet or Louis Armstrong especially his Hot Fives.

As a teenager me and my friends got interested in French culture: red wine, the New Wave, Camus and Sartre. The musical interest was focussed on the chansons, and from that 'French period' I enjoy the company of George Brassens, Jacques Prevert and Léo Ferré.

Nowadays, there is not much time to really sit down and listen to my favourite music, especially with four children in the house. But when if I were to nominate a special favourite for my videoshelves it would be *The Magic Flute* produced for the Swedish Television Company by Ingmar Bergman and in my mind a true audiovisual masterpiece.

TREASURER'S TOP TEN

Mark Jones

I spent my childhood in rural South Wales. The nineteen fifties were very quiet. Not a lot ever seemed to happen. Domestic entertainment came originally from a wind-up gramophone found in the attic, but with sadly only two 78 rpm records. I played them endlessly. They were a revolting sentimental dirge *You'll Never Miss Your Mother Till She's Gone* and *Les Sylphides*. Unsurprisingly, neither makes it to my top ten.

After my parents had bought a radiogram my relationship with recorded sound became much more sophisticated, although my first attempt to become a consumer was disappointing. Presenting myself at the record department at Cardiff's biggest store I confidently asked for *The Ballad of Davy Crockett* on one side and *The Railway Runs Through The Middle Of The House* on the other side. No sale.

Radio inevitably played a large part in my early years. The BBC in the fifties and sixties provided new drama, wonderful schools programmes, inventive features and witty and salacious comedy. Ideal for adolescents, of all ages. The sixties produced another phenomenon, the pirate radio station, which made listening to the radio even more attractive, even subversive: the perfect accompaniment to being a student in 1968.

Twenty five years at BBC Radio have merely confirmed an interest in sound in all its forms. Now I'm an independent producer I'm rather more interested in different aspects of its usage, but I still would like cataloguing literacy and the appropriate levels of relative humidity. Still a closet archivist possibly.

Anyway, enough of this flim-flam. Time to get down to business. Most of my top ten are of so-called popular music; I'm with Noel Coward on the potency of cheap music. Additionally there are a couple of recordings of plays because for me the best drama is usually better than anything else.

So here goes. My top ten (on a May Monday, about 9 p.m., 1998), is:

1. Under Milk Wood

Dylan Thomas's play for radio, broadcast in 1954. A sensuous wordfest, with perhaps the only unflawed performance ever given by Richard Burton, of a Welsh village and its inhabitants over twenty-four hours. The name of the village, Llareggub, is what Thomas felt about Wales, backwards.

2. Tears Of A Clown

Smokey Robinson with one of Tamla Motown's great tracks from 1971.

3. Carrickfergus

If you can remember Van Morrison when he was thin then you really do go back. Still "the man", despite the born-again phase and the excruciating duet with Cliff Richard. This one's from his album with the Chieftains.

4. Tomorrow Never Knows

The best track on the best Beatles album, *Revolver*, from 1966.

5. Artist Descending A Staircase

The BBC commissioned Tom Stoppard to write this witty and poignant play, a Dadaist murder mystery in which all the clues are contained on a seven-second piece of audio tape. A constant delight.

6. Younger Than Springtime

I'm a sucker for all the great musicals. *South Pacific* is perhaps the most mature of the 'big seven' and Mandy Patinkin's version is robust and lyrical at the same time.

7. Nothing Compares 2 U

Prince songs have an eerie quality and this is perfectly sung by Sinead O'Connor.

8. Wonderful

The best pop music has an anthemic quality. This is by Colin Blunstone from 1974 and has all the distinctive hallmarks of the ex-Zombies lead singer - highly oxygenated and sexy.

9. The Weight

The Band began as Bob Dylan's backing group on his early tours. They remain one of the great bands in their own right and this is them at their best.

10. Bob Dylan

It's impossible for someone of my age not to have had their adolescence transformed and redefined by the music and style of Bob Dylan. I'm cheating here by going for his album *Bringing It All Back Home* but any of his early LP's or *John Wesley Hardin* or *Blood On The Tracks* or anything, really.

Well, that's it, and in a few seconds since I finished typing this I've thought of ten more. Maybe we should be thinking of a 'hot hundred' or even....

LETTERS TO THE EDITOR

*George Brock-Nannestad, The AV Preservation Initiative, Denmark provides a further comment on "Equalisation of BBC Disc Recordings". Peter Copeland at the British Library National Sound Archive may be responding in these pages at some future date. Meanwhile a reply by Peter to a reader's question about radius compensation may be read in the July issue of the *Historic Record*. [Ed.]*

I am happy that my comment has met with an authoritative answer by Peter Copeland (both in *IASA Journal* No. 10), although part of the response puzzles me.

Stripping the various circumstances and sources from the bare facts we are left with certain occurrences at recording which all *present* utilisers, including archives, will have to deal with if they want to do credit to the recording. In the BBC systems approach this was taken care of automatically, but we are breaking the system. I would like briefly to explain the bare facts in terms that will be felt relevant also to the non-technical part of the readership.

In a system with a very high quality control, both on recording and on reproduction, such as that *inside* the BBC, noting a drop in the level of the higher frequencies on reproduction when approaching the centre of a disc, led to compensatory measures at *recording*. Instead of using the fixed "recording characteristic" promoted by Peter Copeland, a *change* in "recording characteristic" was introduced stepwise as the recording machine approached the centre (this, I think, is the clearest way to express the problem). This means that we have to apply a *changing reverse* "recording characteristic" stepwise at replay if we use other than the original pickups used by the BBC in the period 1941 to ca. 1951, and in particular if we use elliptical stylii which reproduce high frequencies much better than spherical stylii. As regards the interplay between "radius compensation" and "recording characteristic", the discussion in my Lit. 5 (the 1950 BBC Recording Training Manual) as relates to Fig. 25 quite clearly states that "... in considering (the BBC Recording Characteristic (78 R.P.M.)), due allowance must be made for the effects of radius compensation (Fig. 23)."

Hence it is interesting (and obviously not only to me!) and *worrying* to note that The British Library National Sound Archive will adhere to a *fixed* "recording characteristic" within 0.5 decibels when the task calls for a *variable* reduction of high frequency response of up to 10 decibels. And the hoped-for removal of side-changes will prevent any future specialists from improving upon the present-day transfer efforts of the BLNSA.

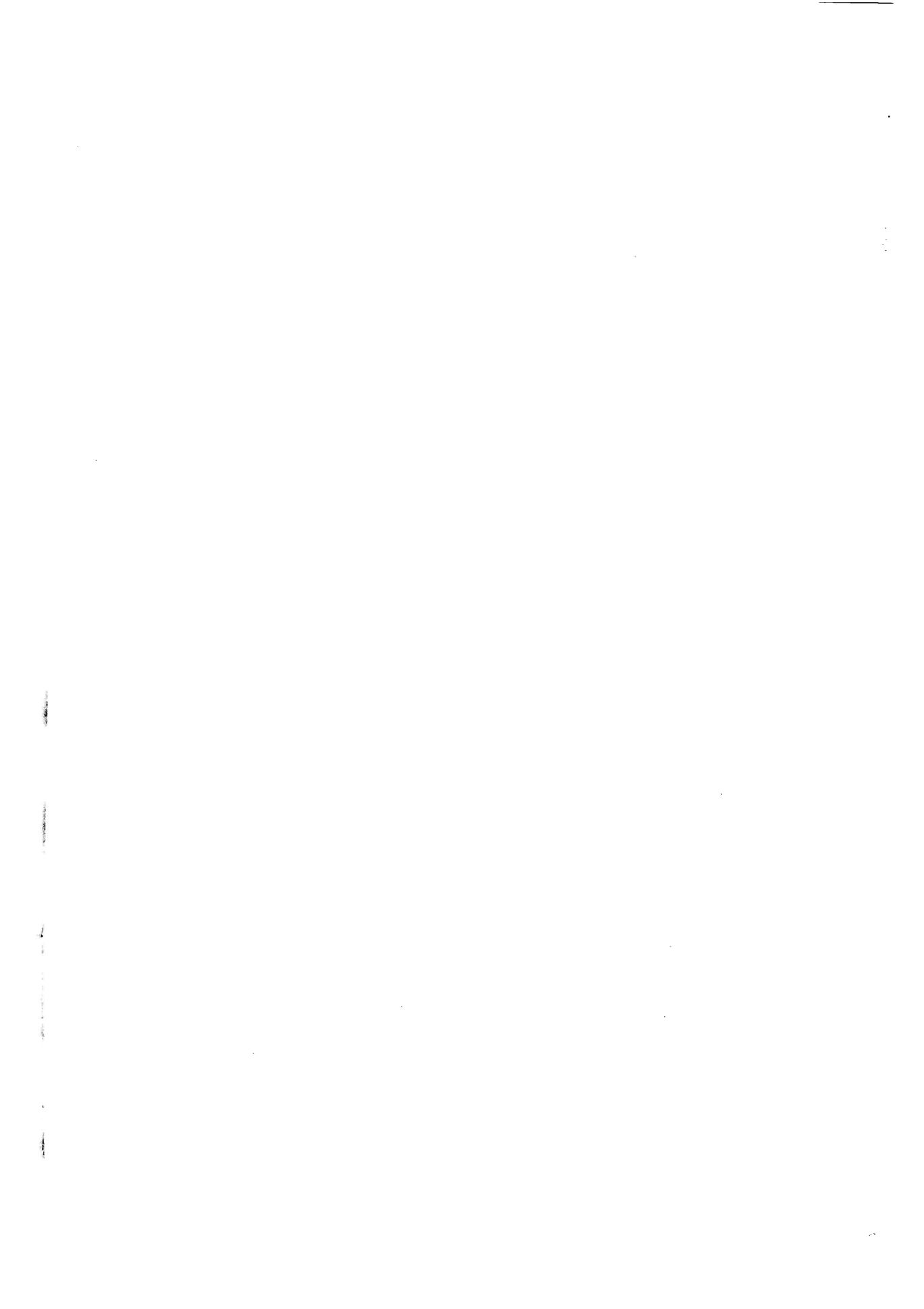
For radii close to the centre the ‘2dBs-per-octave characteristic’ is only good up to 2 kHz for the records recorded 1941-51. This seems to be a fact that cannot be neglected.

In other words, although the reasonings behind “radius compensation” and “recording characteristic” are different, the end result is completely overshadowed by the former as regards frequencies above 2 kilohertz, and hence the precision strived for at the BLNSA is virtually useless as we approach the centre of the disc. On the other hand, if compensation is *not* to be applied at the present transfer, then a calibrated transfer is obviously infinitely better than a haphazard transfer. Alternatively (and this would take into account various mechanical influences and cartridge-to-cartridge variation), a mechanical calibration signal of the class presently under discussion in the Audio Engineering Society Standards Subcommittee SC-03-05 would be relevant.

Now for a few of the circumstances regarding access to information: I would have assumed that a scholarly paper had been based on the facts available at least in the proximity of the author, in other words it is very hard for me to believe that the Technical Instructions and Training Manuals I have based my arguments on are not available anywhere in the UK, home of the BBC. I cannot accept that “we often do not know if radius compensation was fitted to the disc-lathes”, since Peter Copeland’s article makes frequent reference to the whereabouts of much of the equipment. Hence, having been made aware of the importance of this information, I would expect him to be in the best position to dig further.

¹ Leicht überarbeitete Fassung des Referates, das auf der Herbsttagung der IASA-Ländergruppe Deutschland/Deutschschweiz am 1.11.1997 in Basel gehalten wurde. Die Ausführungen fußen wiederum auf einem Diskussionsbeitrag des Autors in der Open Session des Radio Sound Archives Committee (RSAC) während der Konferenz der IASA in Perugia, September 1996, sowie auf einem ähnlichen Beitrag in der Sitzung des RSAC auf der IASA-Konferenz in Oman, Oktober 1997.

² International Association of Sound and Audiovisual Archives (IASA), Technical Committee (Hrsg.): *The Safeguarding of the Audio Heritage: Ethics, Principles and Preservation Strategy.* [= Standards, Recommended Practices and Strategies: IASA - TC 03, Version 1, February 1997].



CONTENTS

Editorial*Chris Clark*

1

President's letter*Sven Allerstrand*

5

ARTICLES**Digital mass storage systems in radio sound archives: a rising tendency?***Per Holst*

7

Der "ewige Datensatz" oder: Löst Digitalisierung wirklich alle Archivprobleme?*Frank Rainer Huck*

10

Audiovisual resource discovery on the web*Chris Clark*

18

Fonoteca de la Biblioteca Catalunya*Margarida Estanyol et al.*

29

The composer as sound archivist: a glimpse into the studio methods of**Karlheinz Stockhausen***Chris Clark*

38

Policy guidelines for the legal deposit of sound recordings*IASA National Archives Committee*

48

Copyright and legal deposit in Uruguay*Graciela Dacosta*

51

REVIEWS

56

BOARD CHARTS

67

LETTERS TO THE EDITOR

71