Sound Advice

Guidelines for the production of audio materials for people with print disabilities

2nd edition: 2013

Round Table on Information Access for People with Print Disabilities
Sound Advice:
Guidelines for the Production of Audio Materials for People with Print Disabilities

2nd. Ed.

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P O Box 229
Lindisfarne, Tasmania 7015
Australia

Email: admin@printdisability.org
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About these guidelines

These guidelines are published by the Round Table on Information Access for People with Print Disabilities Inc. The Round Table is an umbrella organisation which brings together producers, distributors and consumers of information in alternative formats to print; blindness agencies, tertiary institutions and government departments in Australia and New Zealand.

These guidelines are available from Round Table in accessible formats.

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Jo Booth  Queensland Narrating Service
Sheena Daniel  CBM Australia
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Barbara Taylor  Vision Australia
Sue Wallwork  Association for the Blind of Western Australia

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Every effort has been made to trace the copyright holders of all material appearing in this manual. The publishers would welcome approaches on this subject so that appropriate acknowledgments can be made in future editions.
Introduction

I.1 Why this manual?

Sound Advice reflects the continuing commitment of the Round Table to maintaining and improving national standards for the production of audio materials for readers with print disabilities.

It aims to:

- document the experience gained by producing agencies during the past decade;
- help producing agencies that are new to the industry;
- provide a resource to encourage the standardisation of production in Australia and New Zealand;
- establish comprehensive guidelines that are appropriate for Australian and New Zealand requirements; and
- improve the productivity of producing agencies by reducing the amount of time spent solving production problems.

I.2 Philosophy of recording

Audio materials that are produced for readers with print disabilities should reflect the fact that such readers have the right to the same information and the same quality of production as readers of print. All recordings should be of the highest standard possible given their purpose and the circumstances in which they are made.

An audio version of print material must be an accurate, uncensored reproduction of the printed text, not only to comply with the copyright conditions under which the recording is made, but also to give equal opportunities and information to readers with print disabilities.

Alterations should only be made to the print text when:

- it would not make sense in audio format;
- a literal narration would disrupt the text's flow of meaning;
- changing the order in which the material appears would make it more accessible to the print disabled reader; or
• alterations have been specifically requested by the reader (in case of a special request item).

The recording should also be:

• a faithful transmission of the author's intentions;
• narrated in a listenable manner with correct pronunciation;
• presented consistently in a manner which allows ease and efficiency of access; and
• of good sound quality.

I.3 How Sound Advice is set out

Sound Advice has been designed to meet the needs of two groups: producing agencies new to the industry, or new to an aspect of the industry; and established producers who wish to improve and standardise their products and procedures. Note that various producing agencies may have slightly different approaches, procedures and protocols dealing with each particular chapter.

It provides producing agencies that are new to the industry with a comprehensive framework for setting up their operations and achieving the necessary standards. It does not contain all the information they will need, but raises all the main issues that will need to be considered, and gives sources of further information.

Sound Advice also assists established producers by specifying the standards and procedures applying to the various aspects of the production process, and supplying examples where appropriate. It gives detailed information on how to transcribe different kinds of texts into audio format and provides guidelines for dealing with specific issues that will arise during that process.

Factors which must be considered for all types of texts are covered in Chapters 1, 2, 3, 11, 12 and 13 (see Contents Summary). Particular requirements for each type of text are then dealt with in a separate chapter. The types of texts are: recreational and general interest material (Chapter 4), children's books (Chapter 5), magazines (Chapter 6), local newspapers (Chapter 7), student and vocational material (Chapter 8), material for people with intellectual disabilities (Chapter 9) and ephemeral and personal material (Chapter 10).

Of these, the chapters covering two basic types of recordings, i.e. recreational material (Chapter 4) and student and vocational material (Chapter 8), are designed to function on their own. Chapters 5, 6, 7 and 9 should be used in conjunction with Chapter 4, or where appropriate, with Chapter 8.
Guidelines for dealing with the more specific issues that will arise during the recording of all the types of material mentioned above are given in Appendix A. If the approach to a particular issue varies according to whether the recording is for recreational or student/vocational purposes, this will be specified in the relevant section. Appendix B covers additional requirements for law texts.

The manual is designed so that producing agencies can remove sections and use them according to their own purposes. For example, an agency using narrators to record material in their homes for students could supply copies of Chapter 8, Appendix A and Appendix B to their narrators for use as an on-the-spot production manual.

I.4 Feedback

The Round Table welcomes input from users of Sound Advice – Guidelines for the Preparation of Audio Materials for People with Print Disabilities. Suggestions should be sent to:

Round Table on Information Access for People with Print Disabilities
P O Box 229
Lindisfarne, Tasmania 7015
Australia

Email: admin@printdisability.org
1. Preliminary Considerations

Before starting to record audio materials for readers with print disabilities, producing agencies must consider a number of issues. The approach taken to these will depend on the purpose of the recording and the circumstances in which it will be made.

The issues include:

- selection of material for recording (see below)
- avoiding duplicate recordings (see below)
- copyright (see Chapter 2)
- selection of narrators and production staff (see Chapter 3)
- methods of structuring to be used, if any (see Chapter 11)
- selection of format and equipment for recording and technical aspects of production (see Chapter 12)
- labelling and packaging (see Chapter 13)

1.1 Selection of material for recording

Material for recording may be selected by the producing agency or requested specifically by a reader with print disabilities, or a government department etc. Libraries serving readers with print disabilities should consider involving borrowers in the selection of material being recorded for general library use.

1.2 Avoiding duplicate recordings

Once a producing agency has made the decision to transcribe a particular text into audio format, it should search national and international bibliographic catalogues (see below) to check if the text has already been recorded or is in the process of being recorded. If this is the case, the title may be made available for loan and/or inter-library loan and resources should not be wasted on a duplicate recording. In some situations (such as when the original recording is in student format or is substandard) another recording may be warranted.

An agency intending to reformat a particular work should also check that it is not already available or in the process of being produced in the required format. If it is,
the agency should obtain a sub master of this recording rather than remaster the
original production again.

The catalogues to be consulted are:

1.2.1 Libraries Australia

Libraries Australia contains records of published titles in national bibliographies from
Australia, New Zealand, Canada, UK etc., and provides Australian libraries with
information about a large number of publications worldwide. It also lists the holdings
of contributing libraries in Australia.

The database is housed in the National Library of Australia and can be accessed on-
line.

For further information contact:

The Manager
National Bibliographic Database
National Library of Australia
Canberra ACT 2600
Phone +61 (0) 6262 1111

Royal New Zealand Foundation of the Blind does not add records of their accessible
format collection to the National Bibliographic Database on New Zealand.

1.3 Print Disability Subsidy

Print disability funding is available, however it is up to the individual producing
agencies to source the funding from the government in Australia.

1.4 ISBN/ISSN

All materials recorded for readers with print disabilities may be given an International
Standard Book or Serial Number (ISBN/ISSN) as appropriate. This will assist with
Public Lending Right payments. Numbers for allocation to individual recordings can
be obtained from the National Library.

Australian ISSN Agency
National Library of Australia
Canberra ACT 2600
Ph. +61 (0) 6262 1213
2. Copyright

Copyright laws affect all types of reproduction of creative works, including recordings for readers with print disabilities. Producing agencies must observe the relevant provisions of the Australian Copyright Act 1968 and subsequent amendments, and the New Zealand Copyright Act 1994 Section 69 and Copyright (New Technologies) Amendment Act 2008 Section 40.

In Australia and New Zealand, various producing agencies may differ in their approach to dealing with copyright permissions for their materials and some materials (ie. Magazines) are produced under certain exceptions under the Australian Copyright Act 1968 and the New Zealand Copyright Act 1994 Section 69 and Copyright (New Technologies) Amendment Act 2008 Section 40. Some producing agencies may have a Memorandum of Understanding with certain publishers in regards to producing alternate formats from the print material.

The copyright world is constantly changing and with that in mind, producing agencies are to be aware of the changes both locally and globally.

In Australia, organisations wishing to obtain copyright permission to reproduce material for use by readers with print disabilities can do so by voluntary licence agreement or by statutory licence agreement.

2.1 Voluntary licence agreement

A voluntary licence agreement is made when a producing agency is given permission by the copyright owner to reproduce a work. The copyright owner has the right to give or refuse permission.

Copyright permission may be given with the proviso that certain conditions will be met. For example, a copyright owner may limit the number of copies that can be made, limit the use of the recording (e.g. only for distribution within Australasia), or limit production to certain formats. The copyright owner may also seek royalty payments or a fee for reproduction of the work.

Copyright permission may also be given on the understanding that a copy of the print book or other print material always accompanies the audio format. This is particularly relevant in the case of kits for readers with intellectual disabilities.
2.2 Statutory licence agreement

Section VB of the Australian Copyright Amendment Act 1989 provides for optional statutory licence agreements allowing "institutions assisting persons with a print disability" and "institutions assisting people with intellectual disabilities" to make copies of literary or dramatic works in alternative formats for use by readers with disabilities without the permission of copyright owners if the copy is for educational or self-instructional purposes.

Agencies in Australia wishing to produce under statutory licence (other than educational institutions, which do not require gazettal) should write to the Attorney-General's Department asking that the Attorney-General declare by notice in the Gazette that the organisation is either an institution assisting persons with a print disability or an institution assisting persons with an intellectual disability.

The statutory licence requires producing agencies to follow certain procedural and marking formalities which are set out in the Australian Copyright Act 1989 and the Regulations. For example, all temporary working copies made under section 135ZQ of the Act and all permanent copies (or adaptations) made under section 135ZT must be marked according to the requirements of the Regulations. Marking is the term used to describe the information which the Act requires to be included in the reproduction.

In New Zealand those wishing to be a 'prescribed body' for purposes of Section 69 of the New Zealand Copyright Act 1994, an organisation needs to write to the Associated Minister of Commerce stating reasons why they should be a prescribed body. If this application is accepted, an order of Council needs to be drafted, approved by the Government and Gazetted before the organisation can become a prescribed body and take advantage of the protection from copyright infringement provided by Section 69 of the New Zealand Copyright Act 1994.

2.3 Copyright issues - music and sound effects

Copyright implications are also involved in using music and sound effects in audio materials for readers with print disabilities. Commercially available sound effects are usually copyright free, but whenever music is used, producing agencies must identify what copyrights are involved and ensure that appropriate permissions are obtained.
For further information contact:

Australasian Mechanical Copyright Owners' Society (AMCOS)
16 Locked Bag 5000
Strawberry Hills NSW 2012
Phone: +61 (0)2 9935 7900
Fax: +61(0)2 9935 7999
Email: apra@apra.com.au
www.apra-amcos.com.au

Australian Copyright Council
P O Box 1986
Strawberry Hills NSW 2012
Phone: +61 (0)2 8815 9777
Fax: +61 (0) 2 8815 9799
Email: info@copyright.org.au
www.copyright.org.au

Copyright Council of New Zealand Inc.
P O Box 331488
Takapuna
Auckland 0740
New Zealand
Phone: (63 3) 472 0030
Email: cll@copyright.co.nz
www.copyright.org.nz

Intellectual Property Office of New Zealand
Ministry of Economic Development
P O Box 9241
Marion Square
Wellington 6141
New Zealand
Freephone within New Zealand: 0508 447 669
International Phone: +64 3 962 2607
www.iponz.govt.nz
2.4 Copyright issues - reformatting

Before changing the format of a recording, permission is to be obtained from the copyright holder for the print material (who may have only given permission for the original format) and from the agency that produced the original recording (if appropriate). Publishers may be willing to provide files for reformatting into synthetic voice. This will in turn reduce turn-around times, depending on the quality of the original files. The procedure for this may vary between producing agencies and will depend if the copyright holder still exists and the agency of the original recording still exists.

The agency that produced the original recording must be acknowledged in the introductory announcement of the new version. For example:

‘This recording was originally produced by (original producing agency) and is now made available by courtesy of that organisation to borrowers of (reformatting agency).’

2.5 Further information

Producing agencies are advised to study the Australian Copyright Act 1968, the Australian Copyright Amendment Act 1989 and the “Declaration of Collecting Societies: Guidelines” (published in “The Copyright Reporter”) and the New Zealand Copyright Act 1994 and the Copyright (New Technologies) Amendment Act 2008.
Producing agencies requiring specific legal advice or assistance in contacting authors, publishers etc., are advised to contact the Australian Copyright Council and Copyright Council of New Zealand Inc.

Australian Copyright Council
P O Box 1986
Strawberry Hills NSW 2012
Phone: +61 (0)2 8815 9777
Fax: +61 (0) 2 8815 9799
Email: info@copyright.org.au
www.copyright.org.au

Copyright Council of New Zealand Inc.
P O Box 331488
Takapuna
Auckland 0740
New Zealand
Phone: (63 3) 472 0030
Email: cll@copyright.co.nz
www.copyright.org.nz

Copyright Licensing Ltd
P O Box 331488
Takapuna
North Shore City 0740
New Zealand
Phone: +64 9 486 6250
Email: info@copyright.co.nz

Ministry of Economic Development
(Now amalgamated with Ministry of Business Innovation & Employment)
P O Box 1473
Wellington 6011
New Zealand
Freephone with New Zealand: 0508 447 669
International Phone: +64 3 962 2607 (same number as Intellectual Property Office NZ)
www.iponz.govt.nz

WIPO (World Intellectual Property Organization) www.wipo.int
IDPF (International Digital Publishing Forum) www.idpf.org
DAISY Consortium www.daisy.org
3. Narrators and Production Staff

The selection of quality narrators and production staff is very important if a high standard of audio production is to be achieved. The following applies equally to all narrators and producers/monitors, whether they are paid staff or volunteers and working in a studio or non-studio environment.

Note that various producing agencies may have slightly different approaches, procedures and protocols dealing with this particular chapter.

3.1 Narrators and production staff - functions

Narrators and production staff perform a number of tasks involved in recording an audio version of a print text. Depending on the circumstances and requirements of an individual organisation, there are various ways in which these tasks can be grouped and carried out.

The tasks may be performed by various combinations of paid and volunteer staff. If a production team consists entirely of volunteers, producing agencies will usually find it necessary to appoint a paid production coordinator to allocate work, ensure that standards are maintained and keep things running smoothly.

The tasks include:

3.1.1 Allocation of the text to a narrator

This is usually done by a production coordinator or producer. A narrator's preference for a particular title may be taken into account, provided he or she is suited to the text (see 4.2).

3.1.2 Preparing the text for recording

For more information about preparation (see 4.3.1).

Formatting the text

This includes deciding on the order in which the material will be narrated, writing descriptions of diagrams, tables or maps, working out a formula for indexing, etc. It is usually done by a production coordinator or producer, but in some cases the narrator may do some or all of it him/herself. Greater consistency will be achieved if production staff perform this task.
Checking pronunciations prior to recording
This may be done by the narrator, producer or face-to-face monitor. Even if the narrator has checked pronunciations, producers/monitors may need to check them as well in order to confirm that the narrator is pronouncing the words correctly.

If the text is being proofread after recording (delayed monitoring) (see 3.1.5) then the proof-reader needs to be aware of the correct pronunciations as well. Production staff and narrators should pass their lists of checked words on to proofreaders to avoid duplication of work.

Deciding on an interpretation for the text
Decisions in this area should be based on the recommendations in these guidelines (see 4.6, 5.3, 7.9 and 9.7). They may cover use of characterisation, reading pace, tone, style, use of inflection, pauses etc. The best results will be achieved if they are made by the producer, in consultation with the production coordinator and narrator.

3.1.3 Narrating the text
This is the responsibility of the narrator, in conjunction with the production coordinator or producer/monitor.

3.1.4 Operating recording equipment
• In the home - this is usually done by the narrator.
• In the studio - this may be done by:
  o the narrator (if the studio does not have a separate control room or has a remote facility);
  o a studio operator (in cases where face-to-face proofreading is not occurring, one operator may run more than one studio);
  o a face-to-face monitor or producer (who is proofreading as the text is being recorded); or
  o an operator and a producer/monitor.

3.1.5 Proofreading the recording
There are three methods of proofreading (see 4.9 for further information).
• As the text is being recorded - this is done by the producer/monitor.
• **Delayed monitoring/proofreading** - this is done by a separate proof reader, who may be another narrator.

• **Self monitoring/proofreading** - this is done by the narrator.

### 3.1.6 Deciding on corrections needed

This may be done by the producer/monitor, production coordinator or by the narrator him/herself if he/she has proofread his/her own material. It is preferable that someone other than the narrator is involved, although this may not always be possible because of time constraints.

### 3.1.7 Recording corrections

If the text was recorded in the studio, then the original production team will correct it. If the text was recorded in the home and self monitored, the narrator will correct it him/herself. A text recorded in the home and proofread by delayed monitoring may be returned to the narrator for correction, or, if the corrections are minor and/or the recording is required urgently, corrections may be made by the producing agency.

### 3.1.8 Examples

Following are examples of how producing agencies distribute the above tasks among their staff.

**Example A: Production of recreational books and magazines at in-house studios**

- **Production coordinator** allocates work to narrators and producers, schedules studio bookings, manages studios, decides which errors need to be corrected;

- **Producers** format texts for recording, check pronunciations, decide on interpretation for the text in consultation with narrator, operate recording equipment in studios, proofread face-to-face, correct errors with narrator;

- **Narrators** check pronunciations as appropriate, decide on interpretation for text in consultation with producer, narrate text, record corrections;

- **Proofreaders** proofread after recording is complete and list errors and faults.

**Example B: Production of student materials at narrator's home**

- **Production coordinator** recruits, trains and manages narrators, oversees allocation of work to narrators, formatting of texts and proofreading of recordings.
• **Producers** allocate work to narrators, format texts for recording, decide on a general interpretation for the text, spot-check final recording and return it to narrator for correction if necessary, make corrections to recording if time constraints make this the only option;

• **Narrators** check pronunciations, decide on specific interpretation for the text and research any information required to narrate it, arrange individual recording environment as directed, narrate text, operate recording equipment, proofread their own work progressively, decide what corrections are required in consultation with producers, make corrections to recording.

**Example C: Production of recreational books at narrator's home**

• **Production coordinator** recruits, trains and manages narrators, oversees allocation of work to narrators, formatting of texts and proofreading, decides which errors need to be corrected, returns recordings to narrators for correction;

• **Producers** decide on treatment for the text, send material to monitors for proofreading, return work to narrators for correction;

• **Narrators** check pronunciations, decide on specific interpretation for the text, research information required to narrate the text in consultation with production coordinator, arrange individual recording environment as directed, operate recording equipment, narrate text, proofread own work progressively and make corrections as necessary, make corrections to recording as directed by production coordinator;

• **Monitors** proofread the recording after it is complete and submit list of errors and faults to production coordinator.

### 3.2 Selection of narrators

#### 3.2.1 Preliminary information

Prospective narrators may be sent information about the organisation and its requirements, and/or a questionnaire to establish their qualifications, reading skills and abilities.

They may also be sent a preliminary demonstration recording covering the range of material to be recorded and the styles of reading and standards that are required. This enables the candidates to consider whether the work is within their capabilities or is of interest to them.
3.2.2 Auditions

Narrators should be required to pass an audition, for which they must be given sufficient time to prepare. This may include:

- set pieces which will demonstrate the general ability of the narrator. These may include dialogue, fiction, non-fiction, poetry and material for children;
- pieces that will enable the candidate to demonstrate competence in handling particular materials. For example, a candidate who would be suitable to narrate scientific texts for students might be given an extract from one of these;
- difficult or controversial pieces, e.g. sexual scenes or passages expressing extreme political views;
- texts that include passages in languages other than English;
- a selection of the candidate's choosing;
- an unseen piece; and
- a list of commonly mispronounced words and commonly used foreign words or phrases.

The audition may be performed at the producing agency's premises, or in the candidate's home. Where possible the conditions for the audition should be similar to those in which the candidate would be working if he/she were accepted as a narrator.

3.2.3 How to assess an audition

The audition should be submitted to a panel which includes people experienced in audio production and in the requirements of readers with print disabilities. This may include consumers and staff of the producing agency. In the case of narrators of student and vocational materials, the panel may give priority to specific academic knowledge rather than narration skills.

The following should be demonstrated for a candidate to pass an audition. Although requirements may vary according to the particular circumstances of an agency or the material to be recorded, the principles remain the same.

3.2.3.1 Voice production

The voice should be pleasant and easy to listen to. This will require:

- a warm sound with rich tonal range;
- a moderate pitch (voices which are pitched too low or too high will not record well);
- good modulation, without excessive variations in volume;
• a clear and distinct sound (e.g. the voice should not be scratchy, nasal or raspy, and should not be affected by dental or asthmatic conditions); and
• the absence of strain or tension in the voice.

3.2.3.2 Reading style
The narration should be relaxed and convey the meaning of the text without intruding upon it. This will involve:
• good expression and phrasing, including appropriate use of pausing and emphasis to convey the meaning of the text;
• fluency, without jerkiness or stumbling;
• an even, moderate pace (a slightly faster pace may be suitable for student and vocational material);
• good breath control, without breaths in inappropriate places;
• clear enunciation of words, without overemphasis; and
• the absence of irritating mannerisms and monotonous or repetitive speech patterns.

3.2.3.3 Additional criteria
Other requirements for narrators may include:
• accurate pronunciation;
• accuracy to the text;
• the ability to cope with foreign language material;
• the ability to distinguish dialogue from prose;
• the ability to characterise appropriately (see 4.6.1);
• the ability to convey a variety of moods;
• adaptability to different types of material;
• the ability to sustain quality narration over a reasonable period of time;
• the absence of accents or dialects which are likely to interfere with the reader's comprehension of the material; and
• expertise in specific subject areas (in the case of those being considered for recording student material).

Agencies may find it useful to devise an accreditation checklist for assessing auditions.
Candidates who are not taken on as narrators are often interested to know why they were not successful. It may be useful to keep a copy of the accreditation checklist so that comments can be given to the candidate.

3.2.4 Other qualities required of narrators

To be a successful narrator, a person must demonstrate a number of other qualities. These can be assessed to some extent at an interview, but will also need to be monitored once the narrator has begun recording material.

The narrator must have:

- the ability to hear and reproduce sounds (e.g. to pronounce a word as directed by the producer);
- the ability to sustain a consistent and listenable narration over an entire book;
- the ability to use recording equipment effectively - this is particularly important in the case of narrators working in a non-studio environment, where technical advice is not available on the spot (see 12.3 and 12.4);
- the ability to operate recording equipment and establish a suitable recording environment (if appropriate);
- the ability to accept direction and work as part of a team;
- an understanding of and willingness to cooperate with the aims and requirements of the organisation (e.g. the need for accuracy and correct pronunciation);
- an understanding that he/she may be asked to narrate material that he/she would prefer not to read for enjoyment (for example, texts containing explicit sex scenes or material which is written in a dry and functional style);
- reliability and commitment to the task; and
- the ability to complete each piece of work in the required time.

3.3 Procedure for taking on narrators

In order to develop the required expertise, narrators will generally require initial and ongoing training. They should be taken on for a probationary period, during which they should record at least two reasonably substantial texts.

These recordings should be examined by the producing agency against the criteria listed above. If they are satisfactory, the narrator can become part of the agency’s narrator team.
3.3.1 Narrator profiles

When an agency takes on a new narrator, it should acquire information that will assist in allocating suitable texts to them. This may cover:

- the kind of texts he/she would prefer to narrate;
- subject areas in which he/she has particular interest, experience or skill;
- accents, languages and countries with which he/she is familiar; and
- the amount of time he/she is prepared to commit to the organisation.

3.3.2 Narrator records

Organisations may wish to keep other records about each narrator as they become more familiar with the narrator's work. This will provide valuable information for future production staff. The records may include:

- the types of material that the narrator narrates well or badly;
- the narrator's patience with and ability to handle difficult material;
- the narrator's reliability and commitment;
- settings for recording equipment etc. (if appropriate); and
- how any technical difficulties with the narrator's voice or reading style (e.g. popping, sibilance or a large volume range) should be dealt with.

The organisation may also wish to keep note of any changing preferences, ongoing interests or concerns of the narrator. This will assist the organisation to understand the narrator's needs and show appropriate interest in them.

3.4 Narrator motivation

It is very important to give narrators ongoing recognition and feedback in order to maintain motivation, morale and involvement with the organisation. This may include:

- comments on performance from production staff;
- feedback from readers;
- a narrators' newsletter;
- ongoing in-service training;
- occasional dinners or meetings;
- internal awards (e.g. for length of service, outstanding performance etc.); or
- nominations for state and national awards (e.g. Senior Citizen of the Year).
3.5 Selection of production staff

The Production staff include production coordinators, producers, face-to-face monitors and proofreaders. They may be paid staff or volunteers.

All production staff must undergo thorough training to ensure that they understand the needs of readers with print disabilities, the guidelines set out in Sound Advice and the policies of the agency.

They may need to possess some or all of the following abilities depending on the functions they are performing:

- good organisational skills;
- a command of spoken language;
- accuracy of perception, both visual and aural;
- a good general knowledge and/or knowledge of specific subjects (as appropriate);
- a familiarity with different genres, styles of language and writing;
- the ability to cope with foreign language material, technical material, geographical, proper names and colloquial terms;
- the ability and willingness to use reference materials and other sources to verify pronunciations etc.;
- a willingness to work positively with material that they may not choose to read themselves;
- an awareness of and willingness to cooperate with the aims and requirements of the agency;
- the ability to direct narrators in a positive manner and work with them as a team; and
- the ability to operate recording equipment and evaluate the technical quality of recordings.

It may be appropriate to test the accuracy, concentration and technical skills of production staff who will be performing face-to-face or delayed proofreading (e.g. by audition).
4. Recreational and General Interest Material

This chapter covers the main factors involved in the audio production of recreational reading (books for general library use, including fiction and non-fiction), and of general interest material (such as information pamphlets etc.).

Note that various producing agencies may have slightly different approaches, procedures and protocols dealing with this particular chapter.

See Chapter 5 for additional factors involved in recording books for children, Chapter 6 for magazines, Chapter 9 for material for people with intellectual disabilities and also Appendix A for ways of dealing with specific issues that may arise when converting a print text to audio format.

4.1 Structure

The overall structure of audio books for recreational reading may include:

- an introductory announcement, the publisher's blurb and the biography of the author (if applicable), bibliographic details of the print book and details about the recording (see 4.10);
- the production information (see 4.3.6.1);
- an indication that the narration of the main text is about to begin;
- introductory items from the text, e.g. dedication, epigraph, contents, disclaimers (not including bibliographic details);
- the main text, including announcements and narrator's notes as appropriate (the order of the text may be changed);
- an indication that the narration of the main text has been completed; and
- the final announcement, including additional information from the print copy, (e.g. a list of, or extracts from, other titles in the series), copyright statement and the end of recording statement.

For accessibility purposes, producing agencies should consider structuring the audio book and informing readers of this as soon as possible in the introductory announcement (see Chapter 11). This makes it easier for readers to skip the introductory material, while still making it available for those who require it.
4.2 Choosing the right narrator

When allocating a text to a narrator, production staff must ensure that the narrator has the appropriate qualities and abilities to match the particular text. It is an advantage if the narrator has an interest in or knowledge of the subject matter or setting of the text, but this should not be an overriding criterion.

The narrator's vocal style must reflect the point of view or "voice" of the text.

Variables to be considered include:

- gender
- age
- accent (regional British, broad Australian etc.)
- reading style (formal/intimate, slow/fast, cheery/solemn, rhythmic pattern etc.)

The narrator should also be able to:

- pronounce all names, foreign words and technical terms that appear in the text;
- perform any dialects, accents or character voices that are required (see 4.6.1);
- sustain high quality narration, especially when working with complex, lengthy or poorly written material;
- be at ease with any sensitive material which may appear in the text, e.g. sex scenes or blasphemy; and
- complete the book in the required time.

In some cases it may be necessary to use more than one narrator for a particular book, e.g. when the narrative is written from the perspective of several different characters, each in the first person. Where possible, the same narrator should be used for books in a series containing the same characters.

4.3 Production issues

4.3.1 Preparation

Books should be thoroughly prepared for recording so there is minimum disruption to the actual recording sessions and the flow of the narration is maintained. Preparation is a joint process between the narrator and production staff (see 3.1.2), and should involve:

- reading the text, making lists of all items requiring further attention;
• deciding on any omissions (see 4.3.3);
• deciding if and how the text should be structured (see Chapter 11);
• writing notes explaining the treatment of the text, including structuring;
• writing explanatory notes for visual material;
• researching pronunciations;
• deciding on an overall approach to the narration of the text which will best capture its mood; and
• establishing character voices and researching accents where necessary.

4.3.2 Order

All material should be read in the order that it appears in the print copy. The only exceptions to this are:

• when the text would not make sense if narrated as it appears in the print copy (e.g. insert boxes, footnotes); and
• when the information would be more useful if it appeared in a different order, (e.g. a glossary may be moved from the back of the print book to the front of the audio one).

If the text is broken up into units distributed around the page (e.g. children's books, information brochures), it will be necessary to decide on an order in which to narrate the material. Generally this should be from top left to bottom right of the page, but in some cases a different order may be necessary to achieve the most logical flow of ideas. Care should be taken not to miss any items.

4.3.3 Omissions

It may sometimes be appropriate to omit something which appears in the print book from the audio version (e.g. very complex diagrams which are impossible to describe). If the item omitted adds information to the main text, the reader should be informed of the existence of the item and the fact that it has not been narrated.

This can be done at the beginning of the recording, at the point where the item occurs in the text or at both places as appropriate. The reader will then be able to use alternative methods of accessing the information, e.g. a tactual diagram, large print or assistance from a sighted reader.
4.3.4 Misprints

Apparent misprints should only be corrected when it is absolutely clear that there is a typographical error in the print book, and it is possible to work out what the correct word should be.

If it is clear that there is a misprint, but it is not clear what the correct word or words should be, a narrator's note (see 4.3.6.2) may be included to inform the reader that the error originated from the print copy rather than the recording.

4.3.5 Sound effects and music

Sound effects and music should generally not be included in audio versions of print books, as the recording is a transcription rather than a dramatisation. The only exception to this is when it is impossible to convey the meaning of the print text in any other way, e.g. when reading complex descriptions of musical chords or motifs.

Music may be used for identification (e.g. of a series or project) or structuring (see 11.3.5). Please note that copyright restrictions apply to the use of music in recordings.

4.3.6 Explanatory notes

Explanatory notes may be added by the producing agency to give information that will help the reader understand the recording. It is important to maintain the distinction between the print text and any explanatory notes, so they must always be carefully delineated.

4.3.6.1 Production information

General information about the treatment of the text should be given after the introductory announcement and before the narration of the main text (see 4.1). It should be as brief as possible and presented in a consistent format, and should cover:

- omissions from and changes to the order in which the material appears in the print book;
- information about structuring (see Chapter 11);
- a warning to the reader that the book contains explicit sex, violence or offensive language (if appropriate);
- the treatment of figures, illustrations, spelling, footnotes etc.;
- an explanation of the audio presentation of the print layout (e.g. "insert boxes will be narrated at the end of the chapter in which they appear")
Example of production information

"Insert boxes that appear in the print copy will be narrated at the end of the chapter in which they occur. The glossary, which appears at the end of the print book, will be narrated immediately after the table of contents."

4.3.6.2 Narrator's notes

Narrator's notes are used when it is necessary to explain specific aspects of the audio version of the print text during the narration. They should begin with "narrator's note" and end with "end narrator's note". These notes should be succinct and should interfere as little as possible with the flow of text. They should be descriptions rather than interpretations and should not patronise the reader.

Example of a narrator's note

The text of a book reads: "Rubyville was linked to the mainland by four long causeways. The lake was surrounded by cities, which either had been defeated by the invaders, or were at best uncertain allies. So, as a precaution against sudden attack, the causeways were spanned by removable bridges." The text is accompanied by a map of Rubyville.

The narrator's note reads: "Narrator's note: a map in the print book shows Rubyville (in the centre of Lake Diamond), surrounded by eight other cities. End narrator's note."

For further examples and exceptions to this rule see Appendix A.

4.3.7 Structuring

Any text that the reader may want to skim or access at a specific point rather than read in strict sequence should be structured. (For further details see Chapter 11).

4.4 Treatment of the text

When making decisions about the treatment of the text the two questions to ask are:

- What is most faithful to the author’s intentions?
- What will make most sense to the reader?

4.4.1 Page numbers

Page numbers may or may not be given in recreational material. This depends if the recreational material is being reformatted or not, or if the material has page number insertions inputted at the time of narration.
Page numbers should be given when:

- the audio version is being used in conjunction with the print copy (e.g. *Tax Pack*);

Page numbers may also be given at the beginning of each chapter. If the text refers to page numbers within the print copy, these should be replaced by references to the title of the relevant section.

Producing agencies may also consider structuring each page for recreational material, particularly if the recording is likely to be used by students (see Chapter 11).

### 4.4.2 Punctuation and print layout

Punctuation and visual cues (e.g. headings, paragraphs) should generally be conveyed by use of inflection and phrasing. See Appendix A for exceptions to this rule.

### 4.4.3 Publisher's information

The publisher's blurb and any information about the author may be narrated during the introductory announcement (see 4.10.2). If there are two blurbs (e.g. one on the back cover and another before the title page), both should be narrated. If they duplicate each other, the more detailed one should be used.

Any other information from the publisher, such as a list of other titles in the series, information about or extracts from other titles in the series etc., may be recorded after the main text.

### 4.4.4 Bibliographic details

These should be provided in the introductory announcement or closing announcement and do not need to be narrated in full as part of the main text.

### 4.4.5 Introductory material

As a general rule, all introductory material should be narrated in order of appearance. This includes information about awards and funding, disclaimers, acknowledgements, dedications, epigraphs, introductions and prefices. In some cases it may be necessary to distinguish between items appearing on separate pages in the print text by giving them titles, e.g. "Dedication ...". This can be done when structuring the book. (see Chapter 11)


4.4.6 Contents list

The contents list of the print book should be narrated at the point where it occurs in the print text, unless the contents have already been given as part of information about structuring in the production information (see Chapter 11). This should be done even if the contents list only contains chapter headings.

Any alterations made to the order in which material appears in the print copy should be announced during the narration of the contents list. Page numbers should only be given if they have been narrated in the main text.

4.4.7 Text design

Readers should be informed if the text design may use marginal notes, colour coding, insert boxes etc. to separate particular information from the rest of the text (see A.5, A.9 and A.12 for further information).

4.4.8 Visual information

Visual material such as maps, charts, graphs, diagrams, tables etc. should generally be described. This may be done at the point where the material occurs in the main text or at a point where it doesn’t interrupt the flow of the text (see A.26.1).

Visual material should not be described if:

- the information involved is directly duplicated in the text;
- the description would be so long and convoluted that it would disrupt the main text completely and/or be very difficult to understand;
- the material adds little to the meaning of the text; or
- it is virtually impossible to describe the material in a comprehensible manner.

If visual material is described, information that is duplicated in the text should be kept to a minimum. If any items are not described, the omission should be noted (see 4.3.3).

See A.28 for further information.

4.4.9 Pictures

Pictures (e.g. illustrations and photographs) generally need not be described (see A.15 for exceptions).
4.4.10 Textual notes

All textual notes (footnotes, endnotes etc.) may be recorded. They may be inserted into the main text, at the end of the relevant chapter / section, or at the end of the recording (see A.26).

4.4.11 Appendixes

Appendixes should generally be included, either at the point where they occur in the print copy or at the end of the book.

4.4.12 Glossaries

For ease of access, these should be recorded at the beginning of the book or section to which they refer or in a separate section at the end of the book. They should be internally structured if lengthy (see Chapter 11).

4.4.13 Bibliographies

Bibliographies should be included, either at the point where they occur in the print copy, or at the end of the book. They may be structured if lengthy (see Chapter 11).

4.4.14 Indexes

Indexes referring to page numbers should be omitted, and the omission should be mentioned in the production information.

4.5 Pronunciation

When recording an audio version of a print book, all available resources should be used to determine the correct pronunciation of all words in the text. Once these have been established, they must be used consistently throughout each book. The international phonetic alphabet is the most reliable method of transcribing pronunciations.

In choosing between alternative pronunciations, the guiding principle should be what will make most sense to the reader. This means that Australian usage should be given priority in titles produced primarily for an Australian audience.

The pronunciation of words or names from other languages must be appropriate to the context. For example, "Paris" may be given its anglicised pronunciation or the original French pronunciation, depending on who is speaking or the "voice" of the
text. Foreign words which have been italicised should generally be given their native pronunciation.

Researching foreign or unusual words may involve consulting embassies and consulates, travel agencies, specialty shops, government departments, universities, interpreter services, ethnic radio and TV services, etc., as well as reference books. In some cases it may be appropriate to consult the author.

These sources should be approached by the producing agency or in consultation with the producing agency, and care must be taken not to over-exert their goodwill. If there are a lot of pronunciations to be checked with one source, it may be helpful to send them a list of all the words involved and/or ask them to record the pronunciations which can then be used by the narrator.

To avoid duplicating work, producing agencies may consider establishing some kind of record of checked pronunciations (e.g. a card file or computer database).

For useful references for pronunciation, see References.

4.5.1 Material in languages other than English

Where possible, material in languages other than English should be recorded by native speakers of the language. Their pronunciation must be free from dialects which are likely to interfere with the reader's comprehension of the material.

4.6 Narration of the text

The narration of the text should reflect the principles outlined in I.2 Philosophy of Recording. A high standard of narration is crucial to the success of a transcription into audio format and to the enjoyment of the reader. This standard should be sustained over the entire text and variations according to the energy level of the narrator should be minimised (see 4.7).

For recreational material a moderate pace is most suitable, and care must be taken not to narrate too quickly or too slowly. Although the overall speed of the narration should be consistent throughout the recording, minor variations in pace can be used to reflect the dramatic requirements of the text.

The narrator should pause at appropriate places - such as punctuation points, the ends of phrases, paragraph endings, between listings of separate items etc. - to help the reader understand the text. Inflection should also be used to convey meaning, with only one stress inflection in each phrase. Pauses and changes in inflection
should not cause the narration to become stilted. See A.10, A.19, A.25.1 and A.25.2 for particular situations in which pausing may be used to convey meaning.

The narrator's expression must always be appropriate to the emotional level, mood, genre and writing style of the text. The approach to the narration of each text should be developed by a process of consultation between the narrator and production staff.

The narrator should be as unobtrusive as possible while conveying the sense of the text in a listenable and entertaining manner. Over-reading (i.e. excessive use of emphasis and character voices) is a common problem which should be avoided at all costs. The narrator should allow readers to judge the text for themselves, and must not use tone of voice to make any editorial comment or impose opinions.

**4.6.1 Dialogue/Characterisation**

The narrator should differentiate clearly between prose and dialogue, and between the various characters involved in a text. This will often require some degree of characterisation, as well as the use of timing and inflection.

Prose (i.e. not dialogue) should always be narrated in the narrator's normal voice. This is generally the case even if the text is written in the first person, as it is still necessary to distinguish when the first person narrator is actually speaking in the dialogue. In addition, it is difficult for even the most skilled narrator to sustain a characterisation over an entire book without dominating other aspects of the text and irritating the reader.

Information about character voices is often contained in the text and should be observed in the characterisations used. This information sometimes appears after the character first speaks and must therefore be noted during preparation.

Characterisation should generally be kept to a minimum, and may only involve a slight change of tone, register or inflection. The level of characterisation will depend to some extent on the style of the text (for example, fantasy novels may allow for greater characterisation than biographies).

Each separate characterisation should sit comfortably within the narration and have the same flow and vocal range as the narrator's normal voice. Care must be taken not to overdo character voices, particularly accents and dialects (in some cases adopting only selected aspects of an accent, such as the rhythm or a characteristic vowel sound, may be all that is required).

Character voices must be consistent throughout each recording. This will be most easily achieved if:

- the main characters have voices which are closest to the narrator's own;
• the character voices, accents and dialects chosen are within the narrator's range and can be sustained over the necessary period; and

• the narrator and/or producer compiles notes to remind themselves of the voice used for each character (this is most helpful when the text contains a large number of characters).

4.6.2 Poetry

When narrating poetry, it is important to avoid a sing-song or overdramatised style. Stress and pausing should usually be guided by punctuation rather than line breaks, even in the case of rhyming verse. Some experimental poetry may require special treatment (see A.27).

4.7 Recording sessions

Each recording session should be kept to a duration over which the narrator's vocal quality, accuracy and energy can be maintained. Short breaks should be taken as required, particularly when working with difficult material, and no narrator should record for more than two hours without at least a fifteen minute break.

It is important to ensure that the narration of each text is consistent over all recording sessions. To achieve this, the tone and style of the narration should be matched with that of the previous session at the beginning of each subsequent session. The sessions for each text should be scheduled over as short a period of time as possible, while keeping in mind that recording for long stretches on a number of days in a row is likely to strain the narrator's voice and detract from his/her performance.

During recording, relevant details should be kept on a work card or sheet. These may include the names of all staff who work on the title, the studio in which it is recorded, technical details (e.g. microphone placement, equalisation settings, etc.), the end cues (i.e. the last phrase recorded before each break) and the dates on which the work is done.

4.8 Productivity

Producing agencies are likely to be concerned that narrators achieve maximum productivity while maintaining the quality of the recording. It may be useful to keep productivity statistics such as the number of hours recorded per session. This will allow the agency to assess the efficiency of individual narrators and will also assist with estimating the number of recording sessions required for each text.
4.9 Proofreading

Proofreading is essential to ensure the accuracy of the recording and achieve a high standard of production. It involves checking the audio version of a text against the print copy, as well as assessing technical quality and ensuring that track announcements are correct.

Proofreading can be done in three ways: team recording, delayed monitoring, and self monitoring. In order to achieve even greater accuracy, some organisations may use a combination of two of the methods described below, e.g. team recording followed by delayed monitoring.

Team recording
The narrator and producer/monitor have identical copies of the text, and as the narrator reads, the producer/monitor follows the text, signalling the narrator when an error occurs. The producer/monitor checks the audio recording and indicates the narrator to re-start (e.g. the end of the previous sentence), and recording proceeds. The technical quality of the recording is also monitored. This method is used for studio productions.

Delayed monitoring
A person other than the narrator listens to the completed audio book and checks it against the print text. Mistakes and technical problems are listed for correction. This method is used for both studio and non-studio recordings.

Self monitoring
The narrator records a section of the text, then goes back and checks that section with the print text before proceeding to record the next section. Corrections are made by the narrator directly. This method is used for non-studio recordings.

4.9.1 Common problems
Proofreaders should listen for the following common problems:

Accuracy
- a word read from another line
- a word's opposite read (e.g. "he" instead of "she")
- singular or plural misread
- a word with two meanings mispronounced (e.g. "read")
- obvious misprint not corrected
• incorrect tense read
• words added or omitted
• a line left out - this is most likely to occur in dialogue
• dates/figures misread
• negatives added or omitted
• abbreviations read incorrectly

**Delivery**
• wrong syllable emphasised in word
• wrong word emphasised in sentence
• pause put in wrong place
• lack of appropriate pause between sentences, paragraphs or chapters
• sense lost in long sentence
• punctuation not followed
• characterisation inconsistent or overdone
• distinction between dialogue and prose blurred
• poor accents
• words mispronounced
• stutters, stumbles, slurs, hesitations, etc.
• popping on p's or sibilance on s's
• extraneous noises (e.g. page rustling, chair squeaking, teeth clicking, stomach rumbling)
• mood inappropriate to text
• narration flat and uninspired
• inappropriate or inconsistent pace

**Format**
• introductory announcement incomplete
• concluding announcement incomplete
• items from the book left out (e.g. headings, glossary, etc.)
Technical

- sound of narrator's voice varies (e.g. narrator has moved closer to microphone or equalisation has been changed)
- recording levels inconsistent
- recording levels too low or too high (distortion)
- dropout in recording
- hum, hiss, unclear recording, change in recording speed, etc. (these may happen gradually)
- static, crackle, sibilance, popping, etc.
- voices in background (e.g. crosstalk)
- correction edits noticeable

4.10 Announcements

There must be an announcement at the beginning of the audio book.

It is essential that all information in announcements is accurate and consistent. The author's name should always be read as it appears on the title page (see Chapter 5, 6, 7, 8 and 9).

4.10.1 Copyright statement

The copyright statement may vary depending on how the various producing agencies deal with their copyright of their material they are producing whether, blanket, voluntary, statutory under a special provision of the Australian Copyright Act 1968 or New Zealand Copyright Act 1994. If the recording has been made under a Voluntary Licence Agreement (this is usually the case with recreational recordings made specifically for readers with print disabilities), a statement similar to below may be included in the introductory announcement.

‘This book is copyright, and permission has been given by (name of copyright holder) to (producing agency) to record it for the sole use of readers with print disabilities. No unauthorised copying, broadcasting or public performance of this recording is permitted.’

See Chapter 2 for more information.
4.10.2 Introductory announcement

The introductory announcement may include:

- title of book
- name of author (as printed on the title page)
- publisher's information - including the blurb, the biography of the author.
- Copyright statement
- publisher of print copy being narrated
- place and date of publication of print copy
- edition of print copy
- ISBN of print copy
- name of publisher of original edition (if same publisher do not repeat)
- place and date of original publication
- ISBN of the audio version (if applicable)
- name of producing agency
- name of narrator
- name of producer/monitor (if appropriate)
- year of production

The production information should follow immediately after the introductory announcement or be at the end of the book (see 4.3.6.1).

Example of introductory announcement

‘This is (title of book) by (author). From the book jacket (publisher's blurb). About the author: (biography of author). Other books by (author's name) ...

This book is copyright and permission has been given by (copyright holder) to (producing agency) to record it for the sole use of readers with print disabilities. No unauthorised copying, broadcasting or public performance of this recording is permitted.

This edition of the print book was published by (publisher) in (place) in (year). Print ISBN ... The print book was originally published by (publisher) in (place) in (year).

This recording was produced by (producing agency) in (year). It was narrated by (narrator) and produced by (producer).’
4.10.3 Final announcement

This may include:

- a statement that the main text has been completed
- title of book
- name of author
- name of producing agency
- name of narrator
- name of producer/monitor (if appropriate)
- date of production
- additional information from the print copy
- material omitted from the introductory announcements, if appropriate
- a statement that the recording is finished

The final announcement may also include:

- instructions for the return of the audio book
- information on how to report a faulty book
- a request for feedback

Example of final announcement

‘This is the end of (title) by (author). It was narrated by (narrator) and produced by (producer). This recording has been made by (agency) in (date). The print edition was published by (publisher) of (place) in (date). Print ISBN ... The book was originally published by (publisher) of (place) in (date). Please place the book in the mailing wallet and return to (agency). This is the end of the recording.’
5. Children's Books

In general, books for young people should be recorded according to the same principles as books for adults (see Chapter 4). However, given the specific nature of children's books and the range of age and comprehension levels involved, the following additional considerations should be borne in mind.

Note that various producing agencies may have slightly different approaches, procedures and protocols dealing with this particular chapter.

5.1 Choosing the right narrator

As with adult books, the gender, age and reading style of the narrator should be matched with the style of the book. Books for younger children can be narrated by older or younger narrators, depending on the focus or "point of view" of the book. If the focus is strongly that of the child, then a younger-sounding narrator will be more appropriate, whereas a book with a more external focus (e.g. fairy tales) may sound better with an older, more "authoritative" narrator.

Books for older children, particularly adolescents, are usually written from the young person's point of view. In this case a younger-sounding narrator is preferable if the feeling and atmosphere of the book are to be accurately conveyed.

5.2 Production issues

In preparing a children's book for narration, particular attention must be given to the nature of the material and the age of the children for whom the book is intended. See Appendix A for solutions to specific production problems which may arise in converting print material into audio format.

Books for younger children differ more from adult books than those for older children and adolescents, both in terms of the language used and the role of visual material in conveying information. Producing agencies must ensure that an audio version of a book for children conveys the maximum possible amount of information in a manner which sits comfortably with the style of the book and is accessible to the child.

In some cases, particularly for very young children, this may mean adapting or explaining conventions used in adult books. However, it is important to maintain the distinction between the text of the print book and any explanatory notes added by the
recording agency, and to accustom children to the methods used in adult books as soon as possible.

For example, the concept of the narrator's note may be introduced to children under the age of ten by adding the following to the introductory announcement:

"My name is ... and I am your narrator/storyteller. Sometimes I may need to explain something that appears in the print book. Each time I do this, I will start with the words `narrator's note` and end with `end narrator's note`." 

The narrator's notes can then be inserted into the text in the normal way. However, as narrator's notes can detract from the text they should be as brief as possible and should only be used when absolutely necessary.

5.2.1 Order

The following may vary between producing agencies:

In some cases, particularly with books for young children, the introductory announcement may be abbreviated in order to minimise the information given before the narration of the actual text begins. Additional copyright and bibliographic information can be given at the end of the recording.

Extra material from the print copy may also be recorded after the main text. This could include acknowledgements, information about the series and lists of other titles in it, awards which the book has won, etc.

Another option is to include and structure everything in the same order as that used for adult books.

Glossaries should be recorded at the beginning of the book or at the end of the book, as with adult books.

5.2.2 Omissions

Omissions should be identified as with adult books (see 4.3.3). Illustrations which are an integral part of the text should be described where possible, or it can be noted in the Introductory announcement or Narrator’s note that the book does/does not contain illustrations.

5.2.3 Illustrators

Given that books for younger children rely more heavily on illustrations than adult books, the print book often includes information about the illustrator. This may be recorded along with the information about the author.
5.3 Narration of the text

As with adult books, books for young people should be narrated in a manner which accurately reflects the style and atmosphere of the book.

Character voices may be used to greater effect in "fantasy" books for younger children (e.g. fairy stories, animal stories, science fiction etc.), but care must be taken not to overdo this technique or use it inappropriately.

5.4 Grouping several books

Many recordings of books for very young children are only a few minutes long, and producing agencies may consider grouping several books together in order to save money, space and time in handling.

However, this may have the disadvantage of distancing the experience of the print disabled reader from that of the sighted one (who can select "a book" to read), and may also create complications in cataloguing. For these reasons it is usually only appropriate to group titles from the same series.

5.5 Announcements

5.5.1 Introductory announcement

The placement of announcements may vary with each agency so an introductory announcement for a children's book may include:

- title
- author and/or illustrator
- publisher's blurb
- copyright statement
- producing agency
- narrator
- producer/monitor (if appropriate)
- year of production
- length of recording
It may also include:

- information about the author and/or illustrator
- publisher, place and date of publication
- ISBN of print book
- ISBN of audio book (if applicable)
- information about the contents of the book (if this does not duplicate the book's table of contents)

When recording books for very young children, the copyright statement and all publishing details may be given at the end of the recording.

The production information should follow immediately after the introductory announcement (see 4.3.6.1).

**Example of introductory announcement**

‘This is (title), which was written by (author) and illustrated by (illustrator). From the book jacket: (publisher's blurb).

This book is copyright, and permission has been given by (grantor of permission) to (producing agency) to record it for the sole use of readers with print disabilities. No unauthorised broadcasting, public performance or copying is permitted.

This recording was produced by (recording agency), narrated by (narrator) and produced by (producer) in (date). It lasts for (length of recording). There is more information about this book at the end of the recording.’

**5.5.2 Final announcement**

This may include:

- a statement that the main text has been completed
- title
- author and/or illustrator
- narrator
- producer/monitor (if appropriate)
- name of producing agency and date of production
- any publication details not given at the beginning of the book
• additional information from the print copy (information about the author, publisher's
• advice to parents/teachers, biography of the author, information about other titles in the series (if applicable) etc.
• a statement that the recording is finished

The final announcement may also include:

• instructions for the return of the book
• information on how to report a faulty book
• a request for feedback

Example of final announcement

‘This is the end of (title) by (author). It was narrated by (narrator) and produced by (producer). This recording has been made by (agency) in (date). The print edition was published by (publisher) of (place) in (date). Print ISBN ... The book was originally published by (publisher) of (place) in (date). Please place the book in the mailing wallet and return to (agency). This is the end of the recording.’
6. Magazines

In general, magazines should be recorded according to the same principles as recreational books and general interest material (see Chapter 4 and also Appendix A for solutions to specific production problems).

Note that various producing agencies may have slightly different approaches, procedures and protocols dealing with this particular chapter. The following additional considerations should also be borne in mind.

6.1 Turnaround time

It is important that readers have access to current material, so the turnaround time for production and distribution should be as short as possible. Serious consideration should be made to producing magazines in synthetic voice with files provided by the publishers.

If, however, human narration is required:

- less time can be spent on preparation and proofreading;
- the narrator’s availability becomes a more important criterion in allocation; and
- material is more likely to be omitted if it is too time-consuming to describe.

Although speed is of the essence in magazine production, high technical quality must be maintained. Agencies providing sub-masters of magazines they have recorded must ensure that these are also of the highest possible quality.

To save postage costs, an agency may prefer to provide magazines grouped into particular agendas, and send them out at a regular time each month.

Another speedy way of delivering audio magazines, especially those produced using a DAISY file format, is that they can be uploaded to a public site for downloading by borrowers.

6.2 Approaches to magazine production

There are four main ways to approach the production of audio magazines:

- All articles are narrated from a particular publication.
• Selections are compiled from an issue or a number of issues of one particular magazine. (For example, a monthly selection of material from weekly issues, e.g. *Time Magazine*). Care must be taken to ensure that the selections are representative of the material covered in the print magazine, and that only material from the stated period is included.

• Selections from a number of different sources are used to compile a regular audio magazine on a particular theme or subject. This may be of general interest (e.g. book reviews, gardening, travel), or a more specific subject chosen in response to client need (e.g. ham radio news or current computer software). The selections must provide a balanced coverage of the theme or subject area.

• An agency may produce an in-house magazine directly in audio format. This may contain original and/or published material.

### 6.3 Dealing with magazine publishers

#### 6.3.1 Copyright

In Australia and New Zealand, various producing agencies may differ in their approach to dealing with copyright permissions for their materials and some materials (i.e. Magazines) are produced under certain exceptions under Section 135ZQ of the Australian Copyright Act 1968 and the New Zealand Copyright Act 1994 and Copyright (New Technologies) Amendment Act 2008. The following may vary between the producing agencies, but in general, it is best for producing agencies to seek permission for material used in audio magazines, including music. When material from a particular print magazine is being used on a regular basis, the most practical approach is to seek blanket permission to use any material from the magazine.

In this case it is worth suggesting to publishers that they include a statement in the print copy that any material published in it may be recorded for people with print disabilities. Publishers may also place restrictions on the use of some material.

#### 6.3.2 Other considerations

Publishers are sometimes willing to provide galley proofs of magazines before they appear in print or pre-publication copies. Publishers may be willing to provide files for reformatting into synthetic voice. This will in turn reduce turn-around times, depending on the quality of the original files. Obtaining these will improve the chance of getting the audio version to readers while the material is still current.
Publishers may also be asked to indicate in the print magazine that the whole or part of the publication is available in audio format, and from whom.

6.4 Choosing the right narrator

A wide range of narrators may be used for magazines, depending on the specific content involved. Specialist magazines will require specialist narrators. However, in most cases a warm, friendly reading style is preferable to a more formal approach.

Agencies may consider using more than one narrator to add interest to magazines or speed delivery. Male and female narrators can be alternated, or a host narrator can introduce material narrated by one or more others.

6.5 Production information

This should be recorded after the introductory announcement and should include:

- information about the contents of the recording, including the order in which the material appears
- an explanation of how the magazine has been structured (see Chapter 11)
- information about omissions (if appropriate)
- information about the treatment of the text (where necessary)

6.6 Treatment of the text

Magazines should be prepared for narration in the same manner as other recreational and general interest material (see Chapter 4 and Appendix A), but time constraints may mean that less effort can be put into preparation. It is therefore particularly useful to have essential reference books on hand during the recording process. Spelling of difficult names or websites is appropriate, though should be kept to a minimum, and is up to the discretion of the producing agencies.

If an audio magazine consists of selections from one or a number of print magazines, these selections may be edited to fit into the allotted time, if applicable. When only part of an article is narrated this should be indicated with a producer’s note.

If articles are spread throughout a magazine, it may be helpful to cut and paste them prior to recording. This reduces the time wasted in recording sessions and minimises the risk of accidentally leaving out material.
6.6.1 Omissions

When recording all articles from a particular print magazine it may be preferable to omit certain items. These include:

- Advertisements and promotional materials - as priority should be given to reproducing articles, these are often excluded. However, producing agencies may consider narrating the text of advertisements and promotional material, particularly if they include competitions, free giveaways, catalogues or special offers (obviously there is little point in including these if the reader will miss the deadline). If advertisements are included, care must be taken not to favour one product over another. For information on the treatment of reply coupons and forms, see A.7.

- Conditions of entry and lists of competition winners. These may appear in advertisements or as part of the editorial content of a print magazine, usually in fine print. As they are very time consuming to narrate, it is acceptable to omit them, but again a producer’s note should indicate their presence.

- Out of date material (e.g. diaries of events, competitions etc.). Generally these should not be included, although in some cases (e.g. a list of recent conferences from which papers may be obtained) it may be appropriate to do so.

- Complex diagrams, tables, etc. These may be left out if time constraints make it too difficult to include them. In some cases it may be appropriate to inform the reader that an item has been omitted so they can seek alternative methods of acquiring the information. Producing agencies may consider retaining print copies of a magazine for a limited period in order to answer readers' enquiries about omitted items, or a print copy may accompany the audio magazine.

6.6.2 Introducing each article

Each article in an audio magazine should be introduced with the name of the article, and where possible, its author and the print magazine from which it is reproduced.

6.6.3 Structure of compiled magazines

In compiled magazines, regular formats may be useful. For example, in a general interest magazine, interviews or feature articles may be at the beginning, recipes may be in the middle, and sport at the end of the magazine.

Interest may also be added to compiled magazines by:

- using scripted links between items;
• music (with appropriate copyright permission);
• alternating long and short items; and/or
• ordering the flow of ideas through the magazine.

6.6.4 Structuring

All magazines should be structured - see Chapter 11 for information on suitable methods.

6.6.5 Music and sound effects

Agencies may wish to use a signature tune for each magazine they record. Short music extracts and/or sound effects can also be used between articles/sections to add interest or as a method of structuring (see 2.3 regarding copyright implications).

6.7 Announcements

All audio magazines should contain announcements at the beginning and end (see 4.10).

6.7.1 Introductory announcement

This should include:

• title of audio magazine
• date(s), edition(s) and volume number(s) of the audio recording and the print issue(s) from which the material was taken (as appropriate)
• copyright statement
• publisher of print copy
• ISSN of print copy, if applicable
• producing agency
• narrator/narrators

The production information should follow immediately after the introductory announcement (see 6.5)
Example of introductory announcement

‘This is (title of magazine) for the month of ....20.... Edition ... Volume ... , narrated by narrator/s. This magazine is copyright and permission has been given by (name of copyright holder) to (producing agency) to record it for the sole use of people with print disabilities. No unauthorised copying, broadcasting or public performance of this recording is permitted.

About this magazine: This magazine has been structured using two levels. Level 1 contains all main headings and Level 2 contains any sub-headings. Use the forward and back arrow keys to skip between each heading. Each heading can also be accessed using its corresponding page number.

Contents: [read attached table of contents compiled by the DAISY markup]

6.7.2 Final announcement

The announcement should include:

- a statement that the narration of the magazine has been completed
- title of magazine
- date(s), edition(s) and volume number(s) as appropriate
- narrator’s name
- name of producer/monitor (if appropriate)
- name of producing agency
- a statement that the recording is complete

Information about procedures for returning the magazines, or borrowing or subscribing to the magazine may also be included.

Example of final announcements

Publishing and Copyright Statement:

‘This is the end of (title of magazine) for the month/year (as appropriate). This audio magazine was produced by (production agency) in month/year and is copyright. Any reproduction in part or in whole without written consent of the copyright holder is not permitted.’

Closing Announcement:

‘This issue, ISSN………was published in (place) by (publisher).

Some articles in the print version of (name of magazine) contain (tables and graphs) that are lengthy and difficult to present in audio format. These have not been read.
The (production agency) holds back issues of the print copy for (twelve months). If you would like access to this information please contact ……..

This magazine had been produced using DAISY file format (2.02). This concludes the recording.'
7. Local Newspapers

This chapter covers the recording of local suburban and country newspapers. See also Chapter 4 and Appendix A for solutions to specific problems which may arise when making audio versions of print material, and Chapter 6 for other considerations that may be relevant for topical material.

Note that various producing agencies may have slightly different approaches, procedures and protocols dealing with this particular chapter.

Local newspapers are usually recorded by volunteers in the area concerned. As speedy production is essential if news and information is to remain current, it is preferable that copying and distribution also takes place locally. As with some agencies, newspapers may also be downloaded electronically, received in text format and converted to audio with synthetic speech (see Chapter 11).

7.1 Copyright

Where possible, local newspapers should be recorded under the auspices of an experienced producing agency. The agency can then become the copyright holder of the audio version and be responsible for coordinating production and maintaining standards.

7.2 Local volunteer coordinator

In cases where the producing agency oversees the recording of a number of newspapers, it is also advisable to have a local coordinator of volunteers in each community where a newspaper is recorded. Their role is to handle initial enquiries from prospective narrators, supervise auditions, dispatch audition recordings to the producing agency, and generally liaise between the agency and the local volunteers.

7.3 Editing/selection of material

With audio versions of local newspapers, the entire contents of the print newspaper may not usually be recorded. In some cases, material may be taken from more than one print newspaper.

Material for recording may be selected by:
• the narrator him/herself;
• a production coordinator or producer; or
• the editorial staff of the print newspaper.

The material for recording should be selected according to guidelines set by the producing agency. It should reflect the content of the print newspaper and be free from political bias.

In selecting material, the emphasis should be on information specific to the local area covered by the newspaper. Items of the greatest interest should be given priority.

These include:
• editorials
• local council news;
• other local news stories:
• community activities;
• letters to the editor
• social and cultural news;
• sporting news and fixtures; and
• items relating to older people (as most people receiving the service will be elderly).

In the case of country newspapers, births, deaths and marriages and stock and station prices are also likely to be popular.

Items that can be read elsewhere (e.g. horoscopes, crosswords) and articles that duplicate general news stories available in other publications can be omitted. Paid advertisements can also be omitted, although community notices should be included. In the case of letters to the editor, letters representing different points of view should be narrated rather than the entire column.

Photographs are generally not described, but the accompanying captions may be narrated if appropriate. If a photograph is of particular interest, a very brief description may be given.

The material selected should be divided into appropriate sections, e.g. council news, social news, sport etc. The same pattern of sections should be maintained from issue to issue.
In order to choose the right amount of material, the person who is selecting the material for narration should roughly calculate the amount of time each item will take to narrate. However, as it will always be difficult to gauge exactly how much material can be fitted into the time allowed for each section, the most important material should be narrated first. This may be followed by other items as time permits.

### 7.4 Selection of narrators

Narrators of community newspapers should be selected by audition (see 3.3). Any member of the general public may be suitable, and local radio/television newsreaders etc. may be particularly interested.

The audition should consist of pieces that are representative of the kind of material that will be in the audio version of the community newspaper. These may include:

- an article about a council meeting;
- social news;
- the crime column;
- letters to the editor;
- sports results;
- death notices; and/or
- a sample of the production agency's standard opening announcements.

Completed audition should be assessed by a selection panel including staff of the producing agency, people with print disabilities and if possible, an audio technician. If the auditions are for a newspaper in a language other than English, a native speaker of that language should also be on the panel.

### 7.5 Training of narrators

Narrators volunteering to read magazines should be given initial and on-going training by the producing agency. This should cover the following areas:

- the standards narrators are expected to achieve (printed guidelines and examples of good recordings should be made available);
- how to select material from each issue (if appropriate);
- how to use recording equipment;
- how to set recording levels;
• how and when to use indexing/structuring;
• how to edit mistakes;
• how to avoid common recording errors;
• appropriate narration style;
• the need to avoid making personal comments or using tone of voice to impose a particular viewpoint on the text; and
• the correct copyright details and announcements.

Initial training workshops should include input from readers with print disabilities and an audio technician. On-going workshops should be held at least once a year.

The producing agency should evaluate the work of each narrator. This should include a formal evaluation at least twice a year as well as ongoing informal discussion with the production co-ordinator. To facilitate formal evaluation, the producing agency could devise a standard assessment sheet which itemises and rates aspects of the narrator's work on a particular recording (technical competence, editing, sound levels, announcements, narration quality etc.).

7.6 Structuring

Where possible, community newspapers should be structured and/or indexed (see Chapter 11).

7.7 Production information

The production information should be recorded immediately after the introductory announcement. It may include:

• information about the contents of the recording, including the order in which the material appears on the audio magazine;
• an explanation of how the recording has been structured and/or indexed;
• information about the service, e.g. subscription fees or return of magazines.
7.8 Recording

7.8.1 Recording environment

Local newspapers may be recorded in the studios of local radio stations or, if this is not possible, in any other quiet area which is free from interruption and extraneous noise. If a public building is used (e.g. the local library or hall), a small room or partitioned area is preferable, as large rooms do not usually have good acoustics for sound recording. A room in the narrator's home may also be suitable (see 12.4 for further information).

Whatever the chosen location, the producing agency should provide technical assistance with setting up a suitable recording environment.

7.8.2 Use of microphones

Correct microphone technique is critical if a good quality recording is to be achieved. (For more information see 12.5.)

If two or more narrators are recording during a session, a separate microphone should be used for each narrator. These should be turned off when the person is not actually speaking.

Whenever possible, the same model microphone should be used by all the narrators of a particular newspaper. This will ensure that the standard of the recording is consistent over all issues.

7.9 Narration of the text

The narration of local newspapers should be non-judgemental and professional. Narrators must not add personal comments or interjections, or use tone of voice to impose opinions (see 4.6 and 8.7 for more information).

7.10 Announcements

All recordings of local newspapers should contain announcements at the beginning and end of each newspaper (see 4.10).

7.10.1 Introductory announcement

This may include:

- title of newspaper (e.g. "The [title]")
• date(s), edition(s) and volume number(s) of the audio recording and the print issue(s) from which the material was taken (as appropriate)

• copyright statement

• publisher of print copy

• ISSN of print newspaper, if applicable

• name of producing agency

• name of narrator/s

• name of person who selected the material (if appropriate)

The production information should follow immediately after the introductory announcement (see 7.7).

**Example of introductory announcement**

‘This is (title of newspaper) issue number ... It includes articles selected by ... from the print editions published from ... to ... This newspaper is copyright, and permission has been given by (publisher) to (producing agency) to record it for the sole use of readers with print disabilities. No unauthorised copying, broadcasting or public performance of this recording is permitted. The ISSN of the print newspaper is ... This recording is narrated by (narrator/s).’

**7.10. 2 Final announcement**

This may include:

• a statement that the narration of the newspaper has been completed

• title of newspaper

• date(s)

• name of narrator/s

• name of the producing agency

• a statement that the recording is complete

Information about procedures for returning the audio newspaper, or borrowing, or subscribing to the newspaper may also be included.

**Example of final announcement**

‘This is the end of (title of newspaper) issue number ... It was narrated by ... for (producing agency). This is the end of the recording.’
8. Student and Vocational Material

This chapter refers to all types of texts recorded for student and vocational purposes.

Note that various producing agencies may have slightly different approaches, procedures and protocols dealing with this particular chapter.

See Appendix A for solutions to specific problems that may arise when converting a print text to audio format, and Appendix B for specific information regarding law texts.

Audio versions of student and vocational texts may be recorded by volunteer narrators working in the non-studio environment. They require individual treatment and should be tailored both to the requirements of the reader and the nature of the material. Although these recordings are often subject to time pressure because of deadlines, every effort must still be made to achieve the highest possible technical quality.

Where necessary, the recorded text may be supplemented by study materials in other formats, such as braille, raised-line drawings and/or large print, or by the aid of a trained personal reader.

8.1 Structure

The overall structure of audio versions of print books for student and vocational reading may be as follows:

- the introductory announcement, including the copyright statement, the publisher's blurb and the biography of the author, bibliographic details of the print book and details about the recording (see 8.11);
- the production information (see 8.4.5.1);
- an indication that the narration of the main text is about to begin;
- introductory items from the text e.g. dedication, epigraph, contents, disclaimers (not including bibliographic details, which have been given in the introductory announcement);
- the main text, including announcements and narrator's notes, as appropriate, an indication that the narration of the main text has been completed; and
the final announcement, including additional information from the print copy, (e.g. a list of, or extracts from, other titles in the series) and the end of recording statement.

When a book is not recorded in its entirety, all the above items apart from the sections which have been omitted should still be included.

Producing agencies may consider structuring the beginning of the main text and informing readers of this as soon as possible in the introductory announcement (see Chapter 11). This makes it easier for readers to skip the introductory material, while still making it available to those who require it.

8.2 Copyright

Time pressure often makes it difficult to record student and vocational texts under a voluntary licence agreement (which requires the producing agency to seek copyright permission for each text prior to recording).

Most are therefore recorded under a statutory licence agreement. In this case a copyright statement must be recorded first, before the introductory announcement. This is in accordance with Section VB of the Australian Copyright Amendment Act 1989 and Section 69 of the New Zealand Copyright Act 1994 (see Chapter 2 for more information).

8.3 Choosing the right narrator

When selecting a narrator to record a particular text, the following should be taken into account:

- familiarity with the subject matter
- ability to meet the required deadline
- vocal quality
- reading style

(See 3.3 and 3.4 for further information).
8.4 Production issues

8.4.1 Preparation

Books should be thoroughly prepared for recording so that there is minimum disruption to the actual recording sessions and the flow of the narration is maintained. Preparation is a joint process between the narrator and production staff (see 3.1.2), and should involve:

- skimming the text, making lists of all items requiring further attention;
- deciding on any omissions (see 8.4.3);
- deciding if and how the text should be structured (see Chapter 11);
- writing notes explaining the treatment of the text, including structuring;
- writing explanatory notes for visual material;
- researching pronunciations;
- deciding on an overall approach to the narration of the text which will best capture its mood (when appropriate); and
- establishing character voices and researching accents where necessary.

8.4.2 Order

All material should be read in the order that it appears in the print copy. The only exceptions to this are:

- when the text would not make sense if narrated as it appears in the print copy (e.g. insert boxes, footnotes); and
- when the information would be more useful if it appeared in a different order (e.g. a glossary may be moved from the back of the print book to the front of the audio one)

If the text is broken up into units distributed around the page (e.g. junior texts, information brochures), it will be necessary to decide on an order in which to narrate the material. Generally this order should be from top left to bottom right of the page, but it may be varied to achieve the most logical flow of ideas. Care should be taken not to miss any items.

8.4.3 Omissions

It may sometimes be appropriate to omit something which appears in the print book from the audio version (e.g. very complex diagrams which are impossible to
describe). In this case it is essential to mention by name and page number any material that has not been narrated.

This must be done in the production information and also as the omitted material is reached in the text. The reader will then be able to use other methods of accessing the information, e.g. a tactual diagram, large print or assistance from a sighted reader.

In some cases the person for whom the initial recording is made may not need to have the whole book recorded. However, the entire book should still be recorded if at all possible, as other people may need it later and it would be a waste of resources to do another version. Material should only be omitted for individual requirements if the deadline makes this the only option.

8.4.4 Misprints

Apparent misprints should only be corrected when it is absolutely clear that there is a typographical error in the print book, and it is possible to discern what the correct word should be.

If it is clear that there is a misprint, but it is not clear what the correct word or words should be, a narrator's note (see 8.4.5.2) may be included to inform the reader that the error was made in the print copy rather than in the recording.

8.4.5 Explanatory notes

Explanatory notes may be added by the producing agency to give information that will assist the reader to understand the recording. It is important to maintain the distinction between the print text and any explanatory notes, so they must always be carefully delineated.

8.4.5.1 Production information

General information about the treatment of the text should be given after the introductory announcement and before the narration of the main text (see 4.1). It should be as brief as possible and presented in a consistent format, and may cover:

- omissions from and changes to the order in which the material appears in the print book
- information about structuring (see Chapter 11)
- treatment of page numbers
- treatment of punctuation
- treatment of figures, illustrations etc.
• treatment of footnotes, references etc. if appropriate
• treatment of spelling
• treatment of the print index
• an explanation of the audio presentation of the print layout (e.g. "insert boxes will be narrated at the end of the chapter in which they appear")

The wording of the production information is usually given to the narrator in a letter of instruction which accompanies the recording assignment. A narrator with particular expertise may, with the approval of the producing agency, add to this to clarify the treatment of the text.

8.4.5.2 Narrator's Notes

Narrator's notes are used when it is necessary to explain specific aspects of the audio version of the print text during the narration. They should begin with the words "narrator's note" and end with "end narrator's note". These notes should be succinct and should interfere as little as possible with the flow of text. They should be descriptions rather than interpretations and should not patronise the reader. Narrators should advise production staff if narrator's notes have been inserted.

Example of narrator's note

The text of a book reads: "Rubyville was linked to the mainland by four long causeways. The lake was surrounded by cities, which either had been defeated by the invaders, or were at best uncertain allies. So, as a precaution against sudden attack, the causeways were spanned by removable bridges." The text is accompanied by a map of Rubyville.

The narrator's note reads: "Narrator's note: a map in the print book shows Rubyville (in the centre of Lake Diamond), surrounded by eight other cities. End narrator's note."

For further examples and exceptions to this rule see Appendix A.

8.4.6 Spelling

Students with print disabilities need information about spelling, as they have little or no exposure to print material. In most cases some spelling will also be appropriate for vocational material.

If it is decided that a word requires spelling, this is usually done on the first two or three occasions that it occurs in the print text. In some cases it may be appropriate to confine spelling to the index and glossary if these have been recorded. Another
alternative is to compile a spelling glossary which can be given at the end of each chapter or at the end of the main text.

The author’s name may be spelt. The following may also be spelt, depending on the level of study or type of work:

- technical terms
- foreign words
- words which have unusual spellings
- words which may be unfamiliar
- words which have several variations, e.g. Brown/Browne, rein/reign/rain, etc.

The narrator should pronounce and spell the word with as little break in the flow as possible, e.g.: "The new clique c-l-i-q-u-e had taken charge". The spelling should be given in a lower tone than the main text.

8.4.7 Structuring

Any text that the reader may want to access at a specific point rather than read in strict sequence should be structured. There are a number of different methods for doing this facility (for further details see Chapter 11).

If the print book contains a large amount of information that is supplementary to the main text (e.g. textual notes, glossaries, maps, etc.) it may be appropriate to record this at the end of each chapter or at the end of the book rather than narrating it where it occurs in the print. This gives the reader better access to the supplementary material and avoids disrupting the main text (see A.26.1).

Information about the supplementary material should be given in the production Information and should be structured accordingly for accessibility (see Chapter 11).

8.5 Treatment of the text

When making decisions about the treatment of the text the two questions to ask are:

- What is most faithful to the author’s intentions?
- What will make most sense and be most useful to the reader?

8.5.1 Page numbers

Page numbers should usually be given for student and vocational material and can be placed as part of the structuring process of that material. If it is not part of the
structuring process they may be stated unobtrusively in a lower voice so that they do not break the flow of the text, and should always precede the first word of the new page.

Roman page numbers should be announced as, for example, "Page Roman One". The first Arabic page number should be announced as, for example, "Page Arabic One" and subsequent pages as "Two", "Three", etc. If numbers are frequently used in the text, e.g. in a mathematics text, it may be necessary to repeat the word "page" before each page number to avoid confusion.

Page numbers are generally given during the narration of contents, glossaries, indexes and bibliographies.

8.5.2 Punctuation and print layout

Punctuation and visual clues (e.g., headings, paragraphs) should generally be conveyed by use of inflection and phrasing. See Appendix A for exceptions to this rule.

8.5.3 Publisher's information

The publisher's blurb and any information about the author should be narrated during the introductory announcement (see 8.11). If there are two blurbs (e.g. one on the back cover and another before the title page), both should be narrated. If they duplicate each other, the more detailed one should be used.

Any other information from the publisher, such as a list of other titles in the series, information about or extracts from other titles in the series etc., may be recorded after the main text.

8.5.4 Bibliographic details

These may be provided in the introductory announcement or final announcement and do not need to be narrated in full as part of the main text.

8.5.5 Introductory material

As a general rule, all introductory material should be narrated in order of appearance. This includes information about awards and funding, disclaimers, acknowledgements, dedications, epigraphs, introductions and prefaces. In some cases it may be necessary to distinguish between items appearing on separate pages in the print text by giving them titles, e.g. "Dedication ..."
8.5.6 Contents list

In the case of whole texts, the contents list of the print book should be narrated in its entirety at the point where it occurs in the print text, including page numbers. The only exception to this is if the contents have already been given as part of the structuring announcement. If the chapters etc. are by different authors, their names may be spelt if necessary.

If most of a text is recorded (i.e. only a few sections are omitted) then details of the sections omitted should still be given in the contents, and the omission announced. If only some sections are recorded then only these need to be cited, with their page numbers.

If the recording is a collection of excerpts, articles etc. the producing agency will usually need to compile a list of contents which should be given as part of the production information. When the excerpts, articles etc. are written by different authors, their names may be spelt.

The contents list must be easy for the reader to find, in both the first and subsequent readings. It should therefore be structured in a distinctive manner (see Chapter 11).

8.5.7 Text design

Readers should be informed if the text design may use marginal notes, colour coding, insert boxes etc. to separate particular information from the rest of the text. (See A.5, A.9 and A.12 for further information).

8.5.8 Visual information

Visual material such as maps, charts, graphs, diagrams, tables etc. may be described. This may be done at the point where the material occurs in the main text or at the end of the book (see A.26.1).

Visual material should not be described if:

- the information involved is directly duplicated in the text;
- the description would be so long and convoluted that it would disrupt the main text completely and/or be very difficult to understand;
- the material adds little to the meaning of the text; or
- it is virtually impossible to describe the material in a comprehensible manner.

If visual material is described, information that is duplicated in the text should be kept to a minimum. If any items are not described, the omission should be noted (see 8.4.3).
The treatment of all visual information should be announced in the production information. If an item is not described, any titles, figure numbers or captions relating to it must be narrated.

(See A.28 for further information).

8.5.9 Pictures

Pictures (e.g. illustrations and photographs) generally need not be described. (See A.15 for exceptions).

8.5.10 Textual notes

The treatment of footnotes, endnotes and references should be a joint decision between the producing agency and the person for whom the recording is being made. It may be decided to record all notes, only those which add to the meaning of the text or refer to another part of the book, or none at all, depending on the needs of the reader, the level of study and the nature of the text.

If some or all notes are narrated, this may be done at the end of the sentence in which it occurs or at the end of the chapter or book and structured accordingly (see A.26). All footnote numbers should usually be given as they occur, even if the entire text of the footnote is not narrated.

How footnotes and references will be handled in a particular text must be indicated in the producer's note at the beginning of the recording. For example: "All footnotes will be cited as they occur and read in full at the end of the chapter / book" or "only footnotes essential to the meaning of the text will be cited and read".

For specific information on how to deal with notes in law texts, see Appendix B.

8.5.11 Appendixes

Appendixes should generally be included, either at the point where they occur in the print copy or at the end of the book.

8.5.12 Glossaries

For ease of access, these should be recorded at the beginning of the book or section to which they refer or at the end of the book. They should be structured if lengthy (see Chapter 11).
8.5.13 Further reading

Lists of further reading usually appear at the end of a chapter or at the end of the main text. They are usually narrated at the point where they appear in the print copy or in a separate section at the end of the book.

8.5.14 Bibliographies

Bibliographies should be included, either at the point where they occur in the print copy, or at the end of the book. They may be structured if lengthy (see Chapter 11).

8.5.15 Indexes

When indexes are recorded, they should be narrated at the beginning of the book to provide quick access, if they are required. They may also be structured (see Chapter 11).

Indexes may also be supplied in large print, Braille, or disk. A print copy may be stored with the audio master for future reference.

8.6 Pronunciation

Every effort should be made to determine the correct pronunciation of all words within a text. In choosing between alternative pronunciations, the guiding principle should be what will make most sense to the reader.

Words must be pronounced consistently throughout the text, and a written list of checked words may assist with this. If it is not possible to discover the correct pronunciation of a particular word within the required deadline, it should be spelt and a phonetic pronunciation given.

8.6.1 Material in languages other than English

Where possible, material in languages other than English should be recorded by native speakers of the language. Their pronunciation must be free from dialects which are likely to interfere with the reader's comprehension of the material.

8.7 Narration of the text

The narration of the text should reflect the principles outlined in I.2 Philosophy of Recording and should be of the highest possible standard that the circumstances of
the recording allow. This standard should be sustained over the entire text and variations according to the energy level of the narrator should be minimised (see 4.7).

Student and vocational material should be narrated at the fastest pace with which the narrator is comfortable. This is because students need to cover the maximum amount of material in the shortest possible time. Complex material and books for younger children should be read at a more moderate pace.

The narrator should pause at appropriate places - such as punctuation points, the ends of phrases, paragraph endings, between listings of separate items etc. - to help the reader understand the text. Inflection should also be used to convey meaning, with only one stress inflection in each phrase. Pauses and changes in inflection should not cause the narration to become stilted. See A.10, A.19, A.25.1 and A.25.2 for particular situations in which pausing may be used to convey meaning.

The narrator should be as unobtrusive as possible while conveying the sense of the text in a listenable manner. Over-reading (i.e. excessive use of emphasis) is a common problem which should be avoided at all costs. The narrator should allow readers to judge the text for themselves, and must not use tone of voice to make any editorial comment or impose opinions.

8.7.1 Poetry

When narrating poetry, it is important to avoid a sing-song or overdramatised style. Stress and pausing should usually be guided by punctuation rather than line breaks, even in the case of rhyming verse. Some experimental poetry may require special treatment (see A.27).

8.8 Recording sessions

Each recording session should be kept to a duration over which the narrator's vocal quality, accuracy and energy can be maintained. Short breaks should be taken as required, particularly when working with difficult material, and no narrator should record for more than two hours without at least a fifteen minute break.

It is important to ensure that the narration of each text is consistent over all recording sessions. To achieve this, the tone and style of the narration should be matched with that of the previous session at the beginning of each subsequent session. The sessions for each text should be scheduled over as short a period of time as possible, while keeping in mind that recording for long stretches on a number of days in a row is likely to strain the narrator's voice and detract from his/her performance.
During recording, relevant details should be kept on a work card or sheet. These may include technical details (e.g. microphone placement etc.), the end cues (i.e. the last phrase recorded before each break, and the page number on which it appears) and the dates on which the work is done.

8.9 Proofreading

Proofreading ensures the accuracy of the recording and achieves a high standard of production. It involves checking the audio version of a text against the print copy, and includes assessing technical quality and ensuring that announcements are correct. Recordings of student and vocational material should be proofread whenever time constraints allow it.

Proofreading can be done in three ways: team recording, delayed monitoring, and self monitoring.

Team recording
The narrator and producer/monitor have identical copies of the text, and as the narrator reads, the producer/monitor follows the text, signalling the narrator when an error occurs. The narrator re-starts for example at the end of the previous sentence and recording proceeds. The technical quality of the recording is also monitored. This method is used for studio productions.

Delayed monitoring
The completed master is listened to and checked against the printed text by a person other than the narrator. Mistakes and technical problems are listed for correction. This method is used for both studio and home recordings.

Self monitoring
The narrator records a section of the text, stops the recording and checks that section with the print text before proceeding to record the next section. Corrections are made by the narrator directly. This method is used for non-studio recordings.

8.9.1 Common problems

Following are a number of common problems that should be listened for in proofreading. They will apply to student and vocational recordings to a greater or lesser extent depending on the type of material being narrated.

Accuracy

- a word read from another line
• a word's opposite read (e.g. "he" instead of "she")
• singular or plural misread
• a word with two meanings mispronounced (e.g. "read")
• obvious misprint not corrected
• incorrect tense read
• words added or omitted
• a line left out
• dates/figures misread
• negatives added or omitted
• abbreviations read incorrectly

**Delivery**

• wrong syllable emphasised in word
• wrong word emphasised in sentence
• pause put in wrong place
• lack of appropriate pause between sentences, paragraphs or chapters
• sense lost in long sentence
• punctuation not followed
• distinction between dialogue and prose blurred
• English, foreign and technical words mispronounced
• stutters, stumbles, slurs, hesitations, etc.
• popping on p's or sibilance on s's
• extraneous noises (e.g. page rustling, chair squeaking, teeth clicking, stomach rumbling)
• mood inappropriate to text
• narration flat and uninspired
• inappropriate or inconsistent pace

**Format**

• introductory announcement incomplete
• concluding announcement incomplete
• items from the book left out (e.g. headings, glossary, etc.)
Technical

- sound of narrator's voice varies (e.g. narrator has moved closer to microphone or equalisation has been changed)
- recording levels inconsistent
- recording levels too low or too high (distortion)
- dropout in recording
- hum, hiss, unclear recording, change in recording speed, etc. (these may happen gradually)
- static, crackle, sibilance, popping, etc.
- voices in background (e.g. crosstalk)
- correction edits noticeable

8.10 Correction of masters

Whenever possible, all errors picked up in proofreading should be corrected. There are two main methods for making corrections to a recording when delayed monitoring has been used. In most cases it will be possible to make corrections directly onto the master, although this does involve careful timing.

Sometimes it may not be possible to use this method, for example if the narrator has accidentally left out a sentence or paragraph, or if the master has been damaged. In this case it will be necessary to re-record the faulty sections.

8.11 Announcements

There must be an announcement at the beginning and end of each book.

It is essential that all information in announcements is accurate and consistent. The author's name should always be read as it appears on the title page.

See Chapters 5, 6, 7 and 9.

8.11.1 Copyright statement

This may depend on each individual producing agency but most student and vocational texts are recorded under a statutory licence agreement because of time constraints. In this case the required quotation from section 135ZP of the Australian Copyright Amendment Act 1989 and the New Zealand Copyright Act 1994.
If copyright permission is later obtained to make the text available for general borrowing, this must be acknowledged on the recording, and the original section 135ZP of the Australian Copyright Amendment Act 1989 announcement and the New Zealand Copyright Act 1994 be deleted.

If the text is originally recorded under a voluntary licence agreement, the copyright statement should be included in the introductory announcement.

(See Chapter 2 for more information).

**Example of copyright statement for recordings made under statutory licence agreement**

‘This copy was made on (date) on behalf of (agency) under section 135ZP of the Copyright Amendment Act 1989 OR Section 69 of the New Zealand Copyright Act 1994 for the sole use of people with print disabilities. No unauthorised copying, broadcasting or public performance of this recording is permitted.’

**Example of copyright statement for recording made under voluntary licence agreement**

‘This book is copyright, and permission has been given by (name of copyright holder) to (producing agency) to record it for the sole use of people with print disabilities. No unauthorised copying, broadcasting or public performance of this recording is permitted.’

**8.11.2 Introductory announcement**

If the recording is made under section 135ZP of the Australian Copyright Act or Section 69 of the New Zealand Copyright Act 1994 the copyright statement must come first in the introductory announcements. If it is made under a voluntary licence agreement, the copyright statement may come after the publisher's information in the introductory announcement as for recreational reading.

The introductory announcement may include:

- copyright statement (if recorded under statutory licence agreement)
- title of book (if only excerpts have been narrated, this should be indicated)
- name of the author (as printed on the title page)
- publisher's information - including the blurb, the biography of the author and any list of his/her other books
- publisher of print copy being narrated
- place and date of publication of print copy
• edition of print copy
• ISBN of print copy
• name of publisher of original edition (if same publisher do not repeat)
• place and date of original publication
• ISBN of the audio version (if appropriate)
• name of producing agency
• name of narrator
• name of producer/monitor (if appropriate)
• year of production

The production information should follow immediately after the introductory announcement (see 8.4.5.1).

**Example of introductory announcement**

‘This is ... (title of the text) by ... (author/editor). From the book jacket: (publisher's blurb). About the author: (biography of author). Other books by (author's name)...

This edition of the print book was published by (publisher) in (year). It contains ... pages and the subject heading assigned to it is (subject on reverse of title page). Print ISBN ... The print book was originally published by (publisher) in (place) in (year). This recording was produced by (producing agency) and narrated by (narrator) in (year).’

**8.11.3 Final announcement**

The final announcement may include:

• a statement that the main text has been completed
• copyright statement (if recorded under statutory licence agreement)
• title of book
• author
• name of narrator
• name of producing agency
• additional information from the print copy (e.g. information about other books in the series/imprint)
• a statement that the recording is finished
Example of final announcement

‘This is the end of (title of book) by (author). It was recorded by (agency) and narrated by (narrator) in (date). Following is a list of other books in the series ... This is the end of the recording.’
9. Material for People with Intellectual Disabilities

In general, audio books for readers with intellectual disabilities should be recorded according to the principles outlined in the rest of this manual. However, given the specific requirements of such readers, the additional considerations detailed in this chapter should be borne in mind.

Note that various producing agencies may have slightly different approaches, procedures and protocols dealing with this particular chapter.

Some people with intellectual disabilities will enjoy using audio books that have not been produced specifically for them. However, many prefer slower speeds of narration and the option of following the printed text with the audio version. With the advancement of technology, most players now have the capabilities of the reader being able to select a slower speed that is preferable to their needs.

9.1 Philosophy of recording

Audio versions of print material for people with intellectual disabilities must place particular emphasis on facilitating comprehension. This should be reflected in the choice of print material to be recorded, the speed at which the material is narrated and the ability of the narrator to use inflexion to aid comprehension.

As many people using audio book/print book kits will be following the printed word with the spoken word, the print text should never be altered in the audio version unless it would be totally incomprehensible if narrated as printed. If alterations are necessary, the reader should be told in detail how to return to and continue to follow the print.

9.2 Selection of material for recording

Additional care must be taken in selecting material that will be comprehended by people with intellectual disabilities. Material for adults should be of adult interest and should not patronise the reader. If the print text will be used with the audio version, it should have large clear print and attractive and meaningful illustrations.
9.3 Structure

For most people with intellectual disabilities, past attempts to read have been fraught with frustration and a high level of failure. It is therefore important to maintain the person's initial interest in the book and make it easy for them to find the beginning of the main text.

For this reason, everything that needs to appear before the main text should be narrated separately and then the main text should begin. The publisher's blurb should be narrated immediately after the introductory announcement, followed by any other essential information. The copyright statement, bibliographic information, additional information from the publisher and any other information from the producing agency may be narrated after the main text.

Items which would be more useful, such as an index or glossary, may be recorded at the end of the book. This will depend on how the producing agency structures the book (see A.26.1 and also Chapter 11).

9.4 Choosing the right narrator

In addition to the criteria listed in 3.2, narrators of audio materials for people with intellectual disabilities must be able to narrate at the speed required by the producing agency, and maintain that speed consistently throughout the recording. With the advancement of technology, most players now have the capabilities of the reader being able to select a slower speed that is preferable to their needs.

Less emphasis should be placed on the narrator having an interest in, or knowledge of, particular subject matter and more on whether the narrator is able to aid the reader's comprehension through use of emphasis, inflexion, pausing etc. This is particularly important when choosing narrators for complex non-fiction material.

9.5 Production issues

9.5.1 Preparation

Preparation should include everything outlined in 4.3.1, with the following differences:

- there should be no omissions;
- it may be necessary to modify illustrations and diagrams to facilitate the comprehension of the reader (with permission from the copyright owner); and
• consideration should be given to what will most assist the reader to follow the print if desired.

9.5.2 Explanatory notes

Narrator's notes (see 4.3.6.2) should be explained in the production information at the beginning of the recording.

9.5.3 Order

In addition to the considerations outlined in 4.3.2, the order in which the material appears in the print copy may also be changed in the audio version if this will assist the reader to visually follow the print copy.

Any changes in order should be explained in the production information and also identified in a narrator's note at the point where they appear in the print copy. For example: “The illustrations on the following two pages will be narrated at the end of this subsection.”

9.5.4 Omissions

Nothing that appears in the print copy should be omitted in the audio version.

9.5.5 Misprints

Apparent misprints should always be corrected. A narrator's note should be given at the point of the misprint and the correct word should then be inserted by the narrator.

The method of correcting misprints should be outlined in the production information at the beginning of the recording.

9.5.6 Sound effects and music

Sound effects and music may be used to enhance production, particularly of fiction, but care must be taken to ensure that narration and music or sound effects do not occur simultaneously. Please note that copyright restrictions may apply to the use of music in recordings (see 2.3).
9.6 Treatment of the text

9.6.1 Page numbers

The treatment of pages for readers with intellectual disabilities may differ from that for recreational and student/vocational material. When the recording will be used in conjunction with the print copy, page "turning" may be indicated by the narrator, preferably by the natural sound of a page turning. This cue will assist readers to avoid losing their place in the print copy.

If the text refers to page numbers within the print copy, a narrator's note should be given after the page number indicating the title of the relevant section.

9.6.2 Bibliographic details

In order to minimise the amount of information given at the beginning of the recording, bibliographic details may be narrated after the main text.

9.6.3 Introductory material

Most introductory material, including epigraphs, introductions and prefaces, should be narrated in order of appearance. Information about awards etc. should be generally narrated as part of the final announcement, unless it is very brief. If it is necessary to distinguish between items appearing on separate pages in the print text, this should be done with a narrator's note.

9.6.4 Visual information

All visual information, such as maps, charts, graphs, diagrams, tables etc. may be described. The decision about how to describe these items should be based on their purpose and what they add to the text.

In some cases it may be appropriate to modify visual information to assist comprehension. It will generally be necessary to seek the copyright holder's permission to do this (see A.28 for further information).

9.6.5 Pictures

Pictures (if applicable) may be briefly described. The description aids comprehension and gives the reader who is following the print copy time to look at the picture before turning the page. If the picture has a caption, this should also be narrated (see A.15 for further information).
9.6.6 Indexes

Indexes referring to page numbers should be included, as the reader may be reading the print text along with the audio version.

9.7 Narration of the text

The speed of the narration is an important feature of audio book/print book kits for people who have comprehension difficulties. A range of speeds may be required – people who are just starting to visually follow print may need speeds as slow as 40 words per minute, while others may need speeds as fast as 120 words per minute.

It is important that the chosen speed is maintained consistently throughout the recording, including narrator's notes, announcements etc. With the advancement of technology, most players now have the capabilities of the reader being able to select a slower speed that is preferable to their needs.

9.8 Announcements

9.8.1 Introductory announcement

The introductory announcement may include:

- title of book
- name of author
- the publisher's blurb
- name of producing agency
- name of narrator
- speed level (if applicable)

The production information should follow immediately after the introductory announcement.

Example of introductory announcement

‘This is ... by ... From the book cover ... This recording was produced by ... and narrated by ... at speed level ... which is ... words per minute.’
9.8.2 Final announcement

This may include:

- a statement that the main text has been completed
- title of book
- name of author
- name of producing agency
- date of production
- name of narrator
- name of producer/monitor (if appropriate)
- copyright statement
- publisher of print copy being narrated
- place and date of publication of print copy
- edition of print copy
- ISBN of print copy
- name of publisher of original publication (if same publisher do not repeat)
- place and date of original publication
- ISBN of the audio version (if applicable)
- additional information from the print copy
- additional information from the producing agency, e.g. information and / or instructions on how to return audio book/print book kit
- a statement that the recording is finished

Example of final announcement

'This is the end of (title) by (author). It was recorded by (producing agency) in (year) and narrated by (narrator) at speed level ... which is ... words per minute.

This book is copyright and permission has been given by (copyright holder) to (producing agency) to record it on the condition that a copy of the book accompanies the recording. No unauthorised copying, broadcasting or public performance of this recording is permitted.

This edition of the print book was published by (publisher) in (place) in (year). Print ISBN ... The subject heading assigned to this book is (classification). The book was originally published by (publisher) in (place) in (year). The ISBN of this recording is...
(Additional material from the print copy)

(Producing Agency) hopes you enjoyed this audio book/print book kit. We are interested in your comments, suggestions and requests. Please ring or write to us if there is anything that you want to tell us or ask us. Our telephone number is ... and our address is ... This is the end of the recording.'
10. Ephemera and Personal Material

People with print disabilities often request audio versions of print material which will assist them personally. These are not generally circulated to other readers, but some material may be circulated (ie. Product Instruction Manuals).

Note that various producing agencies may have slightly different approaches, procedures and protocols dealing with this particular chapter.

In recording any of this material, the guidelines for recording recreational material (Chapter 4), magazines (Chapter 6), and/or student/vocational texts (Chapter 8) should be followed, depending on the needs of the reader requesting the service and the nature of the material. However, it should be borne in mind that speed of production is often a high priority and may affect the process of allocation, preparation and narration.

10.1 Types of material

Any of the following may be recorded under Part VB of the Australian Copyright Act 1968 and Section 69 of the New Zealand Copyright Act 1994 (see Chapter 2). This may vary with different producing agencies and some producing agencies may use a similar announcement as with recreational titles, acknowledging the publishing details and copyright holder:

- personal material, e.g. private documents, personal correspondence, personal instructional material;
- information for daily living, e.g. instructions for the use of household appliances, timetables, knitting patterns;
- reference materials for educational purposes, e.g. lecture notes, extracts from text books, examination papers;
- materials for use in employment, e.g. extracts from professional journals, minutes of meetings, audio filing systems; and
- materials with limited circulation, e.g. hobby material, extracts from books, extracts from magazines.
10.2 Production

The recording must be an accurate transcription of the print original, and the contents should be clearly identified in the production information.

An introductory announcement, copyright statement and all subsequent announcements may be included and structured appropriately following the producing agencies procedures.

(See Chapters 5, 6, 7, 8 and 9)
11. Structuring

Structuring enables the reader with print disabilities to access specific sections of a recording.

Note that various producing agencies may have slightly different approaches, procedures and protocols dealing with this particular chapter.

Various methods of structuring and audio indexing are described in this chapter.

11.1 Types of material that should be structured

Generally, structuring is appropriate when the reader may want to skim, dip into or refer to specific sections of the material rather than read it straight from cover to cover. This may apply in the case of:

- collections of short stories, essays or articles
- recipe books
- reference books, dictionaries, etc.
- non-fiction titles which may be used for academic or reference purposes
- instruction books/guides
- general information (e.g. consumer guides)
- magazines
- talking newspapers
- student and vocational material
- books for people with intellectual disabilities

11.2 What to structure within a recording

Structuring should be used consistently within a recording or its significance will be lost. With all types of structuring, it is vital to inform the reader of the contents of the book and the way(s) in which it has been structured. This should be done in the production information note.
11.2.1 Recreational and general interest material

Recreational material does not generally require extensive structuring (for example by chapters only). In the case of collections of recipes, poems, short stories, essays or articles, each main item will need to be structured into the recording. Sections and sub-sections should also be structured, though anything more than 3 or 4 levels becomes a challenge for the production co-ordinator, narrator and client.

For non-fiction, all chapters and sections should be structured, including the location of any bibliographies, glossaries etc. It may also be appropriate to structure boxed text, maps, graphs, tables etc.

Items within large bibliographies, glossaries and other long lists should be structured either alphabetically or with appropriate subject areas.

11.2.2 Reference books/guides

For reference books and guides, each chapter, section and/or letter of the alphabet (in the case of dictionaries, encyclopaedias etc.) should be structured.

11.2.3 Magazines/talking newspapers

For magazines and talking newspapers, each article or section should be structured separately, and if an article is made up of smaller sections, those should be included in the initial structure at a different level.

11.2.4 Student and vocational material

Structuring is particularly important for student and vocational material, as the reader is very likely to need quick access to particular sections of the text.

The main divisions of the text, such as chapters, sections etc., should be structured. Maps, graphs, tables, boxed text, assignments, practicals and tests etc. should also be included in the initial structure.

All page numbers should be included, though DAISY page numbers may be used (rather than print pages numbers) under certain circumstances, particularly with composite magazines.
11.3 Methods of audio structuring or indexing

There are several methods of structuring or indexing audio material. At present they include: DAISY heading divisions, CDA Track markers, MP3 divisions and music indexing.

Changes in format will affect structuring. This should be borne in mind when decisions about structuring are being made. The method of structuring must be explained to the reader in the production information. Typed, large print or Braille index-sheets may also be provided to suit the needs of individual readers.

11.3.1 DAISY format

If the material is required in DAISY format and is particularly complex, several levels may be necessary.

A recording should be structured in the same order as the print text where possible. The structuring process makes all parts, chapters and sub-headings accessible to the reader of print disabilities.

The structuring process is done before the narration of the material. Level One indicates the main headings and chapters. Level Two indicates sub-headings within those chapters etc. DAISY projects may be structured using up to 6 levels, though any more than 3 levels becomes challenging for production staff, narrator and client.

An example of the production announcement for a DAISY recording is:

‘This DAISY audio book has been structured using 3 levels. Level 1 contains main parts/headings. Level 2 contains chapters within those parts/headings. Level 3 contains further sub-headings. You may access the headings using the forward or back arrow keys or by using the corresponding DAISY page numbers. Note that the item requested may not be the first item on that particular page.’

11.3.2 CDA format

If the material is required in CDA format, track markers are structured in the initial preparation for headings with content longer than 4.2 seconds. If it appears that a track will be very long, it can be further divided into 3 minute sections at the post-production stage.

An example of the production announcement for a CDA recording is:

‘For your convenience, a track marker has been placed at the beginning of each heading in this CD. There are also 3 minute track markers between headings where relevant.’
11.3.3 MP3 format

If the material is required in MP3 format, each main heading should be treated as a separate MP3 unless specifically requested otherwise.

An example of the production announcement for an MP3 recording is:

‘This MP3 recording is divided into separate MP3’s that reflect each new heading within the book.’

11.3.4 Synthetic Voice

If the material is required in Synthetic Voice, the structure should follow normal DAISY requirements, but generally no more than 2 levels.

An example of the production announcement for a synthetic voice recording is:

‘This recording has been produced using synthetic voice technology. Level 1 contains all main headings listed within the Table of Contents. Level 2 contains all chapters within those headings. Please note that this production does not contain pages. You can use all other features of your DAISY player to navigate this recording.’

11.3.5 Music

Music can also be included in recordings for aesthetic purposes.

Small sections of music recorded between chapters, articles etc. can be readily differentiated from speech. Please note that copyright restrictions may apply to the use of music in recordings (see 2.3).

11.4 Further information

For further information about structuring, contact:

Round Table on Information Access for People with Print Disabilities
P O Box 229
Lindisfarne, Tasmania 7015
Australia

Email: admin@printdisability.org
12. Technical Aspects of Production

For an explanation of technical terms used in this chapter, please see the Glossary.

For a detailed overview of digital audio see Appendix A.29 Digital Recording Primer.

Note that various producing agencies may have slightly different approaches, procedures and protocols dealing with this particular chapter.

12.1 Production sequence

12.1.1 Recording the original master

Recording the master is the first stage in the production process. It is the definitive work from which all copies are made, and should be preserved carefully so that more copies can be made in the future. (For storage information, see 12.7).

CD/DVD/Blu-ray masters are not an appropriate storage format as they will degrade over time and can become completely unreadable. Digital masters are the future. The only viable alternative is that the digital masters should be stored on relevant hard drives with offsite backup (this is also emphasised at 12.7).

12.1.2 Benefits of Digital

The advantages of digital are as follows:

- Once the signal has been ‘digitised’, the audio can be readily stored in a computer and easily transferred between computers and other devices.

- Copies can be made of the digital file without loss of quality (every time an analogue recording is copied it loses quality, this is often referred to as a generation loss).

- Analogue tape has a limited shelf life whereby the master or copy becomes unusable. Digital files stored correctly can last indefinitely.

- Digital files can be converted easily to many different formats in computers without quality loss. Converting an analogue recording will result in a ‘generation loss’ of quality.

- All modern audio devices are based on digital formats.
12.2 Recording the master for duplication

The production of a high quality master is of the utmost importance. This is because:

- it is difficult to upgrade the technical quality of the master once it has been recorded; and

Factors affecting the quality of the master include:

- the nature of the recording and monitoring environment;
- the quality of the equipment used and the extent to which it has been properly maintained (including monitoring equipment);
- the way in which microphones are used;
- what signal processing equipment is available and how it is used;
- the speed at which the master is recorded;
- the recording format used; and
- the recording medium; - this initially refers to analogue, but could be adapted to refer to a recording platform (mac versus pc etc.)

12.3 Recording in the studio

12.3.1 Studio recording environment

Establishing a suitable recording environment is the first step in the production process and is vital to the production of high quality recordings. Careful monitoring of recordings will ensure that this has been achieved.

The ideal method of producing audio materials is under monitored studio conditions. A studio environment facilitates the production of recordings of high technical quality, because the variables involved (see below) can be controlled to a greater extent than in a non-studio recording. However, for economic and geographic reasons it can also be appropriate to record materials in a non-studio environment.

Studio design is a specialised and complex field, so it is recommended that producing agencies consult an expert in acoustic design when constructing new studios and updating old ones. This will ensure that the available funds are used to maximum effectiveness.

Ideally a recording studio should:
- have an efficient noise-free air-conditioning system;
have a maximum noise rating (NR) of 15 for digital recording;
be free of noise and any colouration from flutter echo and standing waves. A reverberation time between 0.1 and 0.3 seconds is recommended;
have clear sight lines between the narrator and operator/producer/monitor;
have good lighting for both the narrator and operator/producer/monitor (normal fluorescent lighting and incandescent dimmers should be avoided as they may generate noise);
have adjustable, ergonomically appropriate furniture, which may include chairs, footrests, book rests etc.; and
be interchangeable with other studios in the same complex (i.e. have matching acoustics and equipment) to ensure maximum flexibility in rostering.

12.3.2 Studio recording equipment

The essential pieces of equipment for studio recording are microphones, signal processing facilities, talkback and monitoring facilities.

12.3.2.1 Microphones

A good quality microphone is essential, and producing agencies should buy the highest quality they can afford. A microphone with a cardioid pattern is generally most suitable for spoken word recordings.

Selection of a microphone should be approached with the following in mind:

- the use for which it is intended; and
- its compatibility with the equipment with which it will be used.

Microphones should be tested in the studio in which they will be used before purchase.

12.3.2.2 Signal processing facilities

Signal processing facilities allow the sound of the recording to be adjusted in various ways. They are largely used to tailor the recording so that the final master is of the best possible quality, e.g. to remove sibilance, booming bass frequencies, high levels etc. (see also A.29).

An equaliser can be used to improve the sound of the narrator's voice and enhance the quality of the final master by boosting or reducing certain frequencies. It may also be used to remove the frequencies above 12.5 kHz and below 50hz from the microphone signal in order to reduce noise, or to correct deficiencies in the recording environment (e.g. poor acoustics).
The signal from the microphone should also be passed through a **limiter/compression** to reduce sudden increases in volume and keep the signal at a more constant level. (Increases in volume are likely to occur when the narrator raises his/her voice in response to the dramatic requirements of the text.)

This will allow the average level on final recording to be increased, which will improve the signal to noise ratio.

A specialised limiter called a de-esser can also be used to remove sibilance in the recording.

When using signal processing equipment, care should be taken to maintain a consistent sound for each narrator. Producing agencies should therefore keep a record of all individual settings used, including any variations for different studios.

Signal processing facilities can also be used in post-production to mask some of the technical problems that can occur in a recording.

### 12.3.2.3 Talkback and monitoring facilities

The necessary facilities for talkback and monitoring include:

- **Monitoring** - this enables the producer/monitor to listen to the actual recording while it is being made, using either headphones or speakers. It is essential to monitor the output rather than the input (i.e. what has been recorded rather than what is about to be recorded), in order to ensure that the recording is an accurate rendition of the original signal. Headphones or speakers should reproduce the audio signal faithfully and headphones should be comfortable to the wearer over long periods;

- **Talkback** - two-way communication between the narrator and producer or monitor;

- **Playback** - this enables the narrator and producer/monitor to listen to what has already been recorded.

### 12.3.2.4 Other studio equipment

- **Structuring software programmes**;

- **A mixer**, which introduces additional fine controls over the recording process and facilitates the use of extra inputs, e.g. music etc.;

- **A patchfield**, which enables equipment to be connected in various ways; and

- **A foldback facility**, which enables the narrator to hear him/herself in headphones while narrating.
12.4 Recording in a non-studio environment

12.4.1 Non-studio recording environment

The main aims in establishing a suitable non-studio recording environment should be to reduce reverberation and extraneous noise. To this end, the following guidelines should be observed:

- the room chosen for recording should be as free as possible from noises such as air conditioning or refrigerator hum, plumbing noises, clocks, traffic noise, birds, animals etc.;

- the room should have as many sound absorbing materials as possible, e.g. curtains, rugs, upholstered furniture, books, etc.; and

- generally the narrator should face sound absorbing materials or face into the centre of the room. He/she should not face a hard surface such as a wall or window, as the sound of his/her voice will be reflected and may produce echoes or a hollow sounding recording;

However, if a particular external noise is causing a problem it may be necessary to consider alternative positions - for example, it may be better to point the microphone in the opposite direction to the source of the noise, even if this means facing a window.

Recording tests should be conducted to determine the optimum position of the microphone in relation to the narrator and of the narrator and the microphone in relation to the room.

12.4.2 Non-studio recording equipment

The essential pieces of equipment for non-studio recording are a microphone and computer recording software. For more information about microphones, see 12.5.

12.4.2.1 Equipment

In a non-studio environment there should be the following features:

- a microphone input
- record level metering
- an equaliser
- a personal computer including recording software which includes metering equaliser;
- a monitoring facility, either speaker or headphones
• other equipment which may improve the quality of the recording e.g. a limiter

Agencies may also require an area for structuring for non-studio recordings.

12.4.2.2 Care of Equipment

Non-studio recording equipment must be kept in optimum condition in order to maximise the quality of the recording.

The following should be observed:

• recording equipment, computers, laptops, tablets etc. should remain set up in one position and be covered when not in use to protect it from accidental damage and dust;

• the recording equipment should be placed on a foam or felt mat on a table. It should not be placed on a hard reflective surface as this will increase the likelihood that motor noise will be recorded; and

• the recording equipment should not be placed on a carpet, blanket or other lint-producing material as this may be drawn into the machine by the cooling fan.

12.5 Microphone technique

The position of the microphone is critical in producing a high quality recording. To maintain a consistent recording level over extended periods, it must be fixed in a constant position in relation to the narrator.

However, the narrator may occasionally need to vary his/her distance from the microphone to maintain consistent recording levels if the volume of the narration changes according to the dramatic requirements of the text. This is particularly important if a limiter is not being used.

The ideal distance between the microphone and the narrator's mouth is generally 200 to 250 mm, depending on the type of microphone being used, the studio environment (e.g. acoustics, air conditioning noise, etc.), and the narrator's voice. For a non-studio environment it would be ideal to have the distance between the microphone and the narrator's mouth to be about 155mm.

They should also take care not to touch the microphone cord or stand, or unnecessarily touch any other item which is mechanically connected to the microphone, as this may result in unwanted noise being transmitted to the recording (absently kicking the table legs is a common habit). Mounting the microphone may be necessary if using a laptop as vibration from the laptop can manifest as noise in the recording.
Pops (a noise caused by the exhalation of breath on percussive letters such as P) can be avoided by raising the microphone in small steps; use of an appropriate wind shield or placing the bottom of the microphone slightly above the tip of the nose. In the absence of appropriate signal processing facilities, sibilance can be reduced by angling the microphone in relation to the narrator's mouth. A use of a POP filter may also assist.

Recording tests should be conducted to determine the optimum position of the microphone in relation to the narrator and of the narrator and the microphone in relation to the studio or non-studio recording environment.

In the case of non-studio recording, the microphone should not be placed too close to the recording equipment, as this may result in machine noise being recorded. The microphone should be held in an appropriate holder and should never be hand held.

12.6 Recording levels

It is extremely important that the correct recording level is set on the master recording machine. This should take into account the manufacturer's instructions for operating the machine.

If the levels are set too high, distortion may occur. If the levels are too low, this will result in increased hiss.

In both studio and non-studio recording, recording levels must be checked to ensure that they match those of the previous session. In the era of digital recording, this is more important than ever. Digital clipping is 'game over', but equally important is maintaining a suitably high level without clipping. The consequence of a low signal entering an analogue to digital converter is loss of resolution of the signal as bit depth is lost. This manifests itself a both noise, but also removes the 'clarity' from the signal (for further information on digital recording see A.29).

12.7 Storage of masters

All masters, whether reel, tape, cassette, CD, DVD, Blu-ray or digital, should be stored in conditions that will ensure maximum life. This is particularly important for recorded masters, as the work involved in creating them has considerable value, and the quality of future copies depends on adequate preservation.

All non digital masters should be stored in conditions of constant temperature (18-20°C) and humidity (35-45%). They should not be stored on shelves made of
chipboard, and should only be stored on ferrous metal shelves if it has been
established that they are not magnetised. The masters should be protected from dust
and other airborne particles.

Completed master reels should be wound for storage at normal playback speed,
rather than in rewind or fast forward mode (it may therefore be convenient for tapes
to be stored tail out). This means that the wind will be smooth, which reduces
problems associated with uneven tension (e.g. edge damage, dropouts, etc.).

Completed master tapes should never be placed near an appliance which generates
a strong magnetic field, e.g. television, speakers, transformers or fluorescent lights.

Inappropriate storage of analogue masters may result in oxide shedding on the tape
path when the tape is played, but this situation may be retrievable.

CD/DVD/Blu-ray masters are not an appropriate storage format as they will degrade
over time and can become completely unreadable. Digital masters are the future. The
only viable alternative is that the digital masters should be stored on relevant hard
drives with offsite backup.

For further information about this or any aspect of storage contact the Round Table:

Round Table on Information Access for People with Print Disabilities
P O Box 229
Lindisfarne, Tasmania 7015
Australia

Email: admin@printdisability.org
13. Labelling and Packaging

All audio materials for people with print disabilities should be labelled as clearly and fully as space allows. These labels should be designed to suit the needs of readers and library staff.

Note that various producing agencies may have slightly different approaches, procedures and protocols dealing with this particular chapter.

13.1 Labelling

13.1.1 Labels

As long as the audio book is clearly identified, some of the information listed below may only be given on the mailing container or folder.

13.1.1.1 Books

All books should have a label. This should be in clear bold print and must include:

- title (abridged if essential)
- author
- producing agency's name or symbol
- a statement that is only to be used by people with print disabilities (if applicable)

The print label may also contain:

- narrator
- catalogue and/or bar code number (if appropriate)
- publisher of the print book
- a statement that the recording is copyright
- the print pages covered (this is particularly relevant in the case of student or vocational material).

13.1.1.2 Magazines

Audio versions of magazines should also have a print label and must include:

- title (abridged if essential)
- producing agency's name or symbol
• publication date of print copy or copies (if possible)
• date magazines produced (if possible)
• a statement that the magazine is for the sole use of people with print disabilities (if applicable)

The magazine label may also include the narrator's name.

13.1.2 Braille labels

Agencies may label audio books in braille if this is appropriate. Braille labels should contain:
• title (abridged if essential)

Note: Braille labels are problematic on CD’s. Label the CD sleeve if appropriate.

13.1.3 Embossed numbering

An embossed Arabic number may also be placed on the label of the audio book if necessary.

Note: Embossed numbering is problematic on CD’s. Label the CD sleeve if appropriate.

13.2 Packaging

The packaging requirements for audio books depend on the manner in which they will be distributed.

13.2.1 Packaging for circulation by post

If audio books are being circulated by post (e.g. by a specialist library), they should be packaged in containers that are robust, protect the audio book and comply with Australia Post and New Zealand Post regulations.

These containers should include a facility which enables either the reader's or the library's address to be displayed, depending on whether the container is being sent out or returned.

For example, there may be a slot for a reversible card with the reader's address on one side and the library's on the other. In this case, the card should be easy to manipulate and may also have a means for identifying which side is which (e.g. a hole in a specified corner).
Some agencies produce or purchase specially designed containers which can be used for both storage and circulation.

13.2.1.1 Print Identification of Containers

The container should include print identification of (if applicable):

- title
- author
- narrator
- producing agency name or logo
- the fact that the recording is only for the use of people with print disabilities

It may also include:

- container number
- copy number
- catalogue, bar code number and/or ISBN for the audio book
- publisher of the print book
- publication details of the print book
- a synopsis of the book
- date of production of the audio book
- a statement that the recording is copyright
- genre

Where possible, this information should be given in large print.

13.2.1.2 Embossed Labelling

Agencies may also use braille and/or tactual labels for containers when appropriate. Where possible, these should include:

- title
- author

13.2.2 Packaging for open access shelving

Audio books for open access shelves (e.g. in bookshops or public libraries) are usually packaged in folders/containers which must be durable and easy to manipulate (if applicable).
They should be of consistent size and as few as possible should be used for each title. The audio books must be secure in their housing but easy to remove (bearing in mind that some readers may have manipulative disabilities).

The outside cover of the folder should convey the necessary information about the book and be attractive to people with print disabilities. Producing agencies may consider placing more emphasis on attractive packaging if they plan to market their recordings.

13.2.2.1 Print identification of folders/containers

The folder should include print identification of:

- title
- author
- narrator
- producing agency name or logo
- the fact that the recording is only for the use of people with print disabilities (if applicable)

It may also include:

- container number
- copy number
- catalogue, bar code number and/or ISBN for the audio book
- publisher of the print book
- publication details of the print book
- a synopsis of the book
- date of production of the audio book
- a statement that the recording is copyright
- genre

Where possible, this information should be given in large print.

13.2.2.2 Embossed Labelling

Agencies may also use braille and/or tactual labels for folders when appropriate. These should contain the same information as labels for containers.
Appendix A: Specific Production Issues

This appendix contains information on how to deal with specific issues that may arise when converting a print text to audio format. It should be used in conjunction with Chapters 4, 5, 6, 7, 8, 9, 10, 11 and 12 as appropriate.

Note that various producing agencies may have slightly different approaches, procedures and protocols dealing with this particular chapter.

The treatment of specific issues may vary according to the purpose of the recording (e.g. recreational or student reading). If this is the case, all variations except those applying to law texts are given under the appropriate heading in this appendix. See Appendix B for additional information applying to law texts.

The options listed below may not always provide a solution to a given problem. In this case, a solution should be devised according to the principles outlined in I.3.

A.1 Abbreviations

Abbreviations should be narrated according to the spoken convention that applies. If this cannot be established, abbreviations should be treated as follows:

Read the words in full for:
- titles which precede personal names, such as Mr/Mrs/Dr
- common abbreviations, such as: Pty. Ltd.
- shortened words, such as: adj., abbrev., St.
- abbreviations of weight and length, such as: ml., cm., oz.

Read initials only for:
- academic/military awards and protocol titles, such as: F.R.A.C.S., D.S.O.
- official associations, such as: G.M.H., C.A.E.
- common abbreviations of time, such as: B.C., a.m.

If the meaning of an abbreviation cannot be identified, it should be spelt. In some cases, particularly for student and vocational material, it may be appropriate to give the punctuation as well.

A glossary of abbreviations is sometimes included in a student or vocational text. In this case, the full wording should be given after the abbreviation on the first two or
three occasions that it appears in the main text. From then on, only the initials should be narrated.

Some of the books listed in References will assist with abbreviations.

**A.2 Acronyms**

For recreational and general interest material, acronyms should be narrated according to the spoken convention that applies. If the correct convention cannot be determined, the acronym should be spelt.

For student and vocational material, acronyms should be pronounced and then spelt (e.g. "UNICEF, U-N-I-C-E-F").

If it cannot be established whether a group of letters forms an acronym or an abbreviation, it should be spelt.

**A.3 Apostrophes**

Apostrophes do not usually present problems in audio format, except when they indicate possession for a singular noun ending in "s". There are two print conventions for this: "s'" (e.g. "Francis' music") and " s's" (e.g. "Francis's music"). To avoid confusion in audio, both cases should be narrated as if they were " s's" (e.g. "Francis's music").

The only exceptions to this are some ancient and biblical words (e.g. "Achilles' heel", "Jesus' teachings"), certain specific phrases (e.g. "for goodness' sake"), and some plural surnames (e.g. Masters' book).

When " s" indicates possession on a plural noun (e.g. "the Smiths' house", "the riders' mounts") a second "s" should not be narrated.

**A.4 Brackets**

**A.4.1 Round brackets/parentheses ( )**

Where round brackets denote a parenthesis, they should be narrated as conversational asides, indicated by a slight undertone. Round brackets denoting references e.g. (Smith, 1980), can also be indicated by tone of voice.
In cases where it is necessary to convey precise information to the reader (e.g. when brackets appear as part of a reference title, quote or equation) the bracketed section should be indicated by "open brackets/close brackets" or a narrator's note. This may also be appropriate in other situations (e.g. where the author has referred to the brackets).

If they cannot be indicated by tone of voice, brackets within brackets should be signalled by "open inner bracket/close inner bracket".

**A.4.2 Square brackets [ ]**

When square brackets are used to convey a parenthesis or denote references, they should be treated in the same manner as round brackets. In other cases they should be indicated by "open brackets/close brackets" or "open square brackets/close square brackets" as appropriate.

**A.4.3 Square and round brackets**

In technical texts, square and round brackets may be used together. These should usually be cited, particularly for student and vocational material. Brackets within brackets should be narrated as they occur.

For example, [( )] should be narrated as "open square bracket, open round bracket/close round bracket, close square bracket" (see also A.8).

**A.5 Colour coding**

Colour coding is often used to highlight or group specific material in student texts. The way this is represented in audio format will depend on the function it has in the print copy. If its function is mainly aesthetic, colour coding can generally be ignored.

If colour coding is used to convey additional information, the significance of each type of colouring is usually explained in the introduction. This should be given before the coloured areas are narrated in the main text. For example, if the introduction says that a particular colour signifies an important term, "important term" should be stated before the word is narrated.

If colour coding is used to denote related information sub-sets within chapters or sections (e.g. case histories, summaries), this should be treated in the same way as inset boxes (see A.9).
A.6 Exercises throughout the text

Exercises are often given throughout student texts. They should be narrated at the end of the relevant section, or blocked at the end of the chapter. They must be readily accessible and should be structured accordingly.

If answers are supplied, these should also be readily accessible. For example, the answers to a particular list of questions may be narrated immediately after the questions, or at the end of the chapter. They must be readily accessible and should be structured accordingly (see Chapter 11).

A.7 Forms and questionnaires

Forms and questionnaires that appear in print texts should usually be included in the audio version, as they often contain information which is not in the main text (e.g. application forms may list criteria not given elsewhere). Also, people with print disabilities may want to get someone to help them fill out the form/questionnaire if they have a print copy (e.g. the census form) or put their answers on a separate piece of paper if appropriate (e.g. a magazine competition).

A form or questionnaire should be described as follows:

• Give the title of the form/questionnaire and a brief description of its contents and layout.

• Narrate the text of the form/questionnaire, describing the spaces left for answers and/or listing any options given for answers as appropriate. For very simple forms (e.g. reply coupons) it may be better to list the information required rather than describe the form.

A.8 Formulas/Equations

Formulas and equations must be narrated precisely, and terms should be used consistently. Every effort must be made to ascertain the correct names of all symbols, but if this is not possible they should be described. If capital and lower case letters are used they must be differentiated.

Parentheses or round brackets ( ), square brackets [ ] and braces { } should be indicated where they occur by "open parenthesis/close parenthesis" etc.

For example, the philosophical formula <transcribers note> Equation omitted. </transcribers note> could be narrated as: "Square bracket; open round bracket,
backwards capital E, phi, close round bracket; open round bracket, lower case x, close round bracket; open round bracket, lower case y, close round bracket; open round bracket, capital E, lower case x, lower case y, arrow pointing right, capital B, lower case x, phi, lower case y, close round bracket; close square bracket."

If a more interpretive approach is appropriate, the above formula could also be narrated as "There exists phi, such that for all x and all y, Exy implies Bx phi y".

For more information on formulas and equations refer to Lawrence A. Chang's "Handbook for Spoken Mathematics" (see References, also A.14.)

A.9 Inset boxes

Inset boxes may disrupt the text if they are narrated at the point where they occur in the print copy. If they contain information which is duplicated in the main text, they may be omitted for recreational material, but should still be included for student and vocational material. If a box contains information which is useful only in print format, it may be omitted. A common sense approach regarding the needs of the client is required.

Inset boxes can be narrated at an appropriate break in the text (e.g. the beginning or end of the relevant section), or blocked at the beginning or end of the chapter or part. They must be readily accessible and should be structured accordingly (see Chapter 11).

In some cases (e.g. when a number of boxes have a particular theme) it may be better to group inset boxes together in a separate section.

A common sense approach regarding the needs of the client is to be considered by the producing agencies.

A.10 Italics

If italics are used in the print text, their meaning should be conveyed in the audio version. The method used to do this will vary according to the function the italics serve. The most common situations are listed below:

- Titles/headings - these can usually be signified by phrasing and/or tone of voice.
- Emphasis - this can usually be conveyed by phrasing and/or tone of voice.
- Quotes - these should be dealt with using the methods outlined in A.19.
• Languages other than English - if words in another language appear in italics, the native pronunciation should be used rather than an anglicised one.

• Author's emphasis within a quote ("my italics") - when the author has used italics to emphasise part of a quote, this can usually be conveyed by saying "begin italics/end italics" and narrating "my italics" as it appears. In some cases, (e.g. where every second word is italicised) a narrator's note may be necessary to signify the italicised words and make it clear that the emphasis was not in the original quote.

• Signifying a different perspective (e.g. a dream, the protagonist's thoughts, a different time, a different protagonist) - this can be conveyed using tone of voice and/or pauses before and after the relevant section; or by using different character voices or different narrators as appropriate. In some cases it may be preferable to signify the italics using "begin italics" and "end italics". If necessary, the approach to such sections can be explained in the production information.

A.11 Lists

When narrating a list, the distinction between the items must be maintained. In print this is usually done by a numbering system, symbols or placement on the page.

If the print copy uses a numbering system, this can be followed in the audio version. It may be necessary to add words such as "chapter", "section", "question" or "part" to avoid confusion.

Symbols may be omitted if the items are easily separated by the use of pausing, i.e. if the list is brief and/or the items are short. If the list is longer and/or more complex, symbols should be replaced by numbers, letters or the word "point".

These principles also apply if the list is denoted by placement on the page. When narrating lists, it may be useful to insert the words "and" or "and finally" between the second last and last items.

A.12 Marginal notes

Marginal notes should be narrated at the beginning or end of the sub-section to which they apply, depending on their purpose. In some cases it may be appropriate to group them at the end of the chapter, section or book (see A.5, A.9 and A.26).
A.13 Music

When musical notation appears in the print copy, the appropriate approach will depend on the individual text. There are three possible approaches:

- it can be narrated note by note (A sharp, C, B flat etc.);
- it can be played on an instrument, if instrument and player are available;
- it can be omitted, although the omission should be noted at the point where the music appears in the text.

A.14 Numbers

A.14.1 Page numbers

Individual page numbers are not normally given in recreational recording, but are usually given for student and vocational recordings. Pagination can also be given according to the principles in structuring (see Chapter 11, 4.4.1 and 8.5.1).

A.14.2 Chapter/part numbers

These should always be preceded by the word "chapter", "section" or "part" (e.g. "Chapter 1") as appropriate, even if this does not appear in the print copy (see Chapter 11).

A.14.3 Telephone numbers

In most cases telephone numbers should be narrated slowly, as the reader may want to write them down. The Telstra convention is to narrate 0 in telephone numbers as the letter "0", rather than "zero".

A.14.4 Fractions

Except for the most common examples (e.g. $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$), fractions can be narrated as one number "over" another. In some cases it may be necessary to preface this with "the fraction" in order to avoid confusion (e.g. $\frac{3x}{2y}$ should be read as "the fraction three x over two y").
A.14.5 Superscripts

A superscript is a power to which a number or letter is raised, and should be narrated as in the following example: $x^5$ should be narrated as "x to the power of 5". The second and third powers should be indicated by "squared" and "cubed" respectively.

A.14.6 Roman numerals

These should be narrated as their values, not as letters. In some cases (e.g. references to page numbers in footnotes) it will be necessary to inform the reader that the number is written in Roman notation (e.g. p.ii should be narrated as "page Roman two").

A.14.7 Zero

The mathematical symbol "0" should be narrated as "zero", and all zeros must be read. For example, 0589 should be narrated as "zero, five, eight, nine".

For more information about numbers refer to Lawrence A. Chang's “Handbook for Spoken Mathematics” (see References, also A.8).

A.15 Pictures

Pictures are best verbalised

Pictures should be verbalised rather than produced in tactile form.

Plan the verbalisation

The verbalisation should be planned and written out before commencing a narration. Make the description as short and to the point as possible.

The verbal or written description

- Describe the overall image first so that the reader has a concept or understanding of the whole. This makes it easier for the reader to progressively add the details as they are presented.

- Give the most important details first.

- The verbalisation should describe the elements of the illustration, include all labels and be sufficiently detailed to allow the reader to construct a mental image of the illustration.
• As far as possible, keep the description simple and succinct. Choose words and language carefully and avoid wordiness and unnecessary details.

• Aim to provide a description that enables the reader to form his/her own judgement and impression, rather than imposing the narrator's/transcriber's interpretation on the reader.

• Avoid terminology that implies a judgement or assessment of the material, as not everyone will necessarily interpret the meaning in the same way.

(This applies to both the narrator/transcriber as the observer and to the end-user of the narration).

• Descriptive words can be used judiciously but should avoid a personal viewpoint. (For example, even the term 'young children' may mean toddlers or preschoolers to one person, but an older person may interpret it to mean children of 10 or 12 years old).

• Do not make guesses or assumptions if at all unsure of the content.

• Narrators should try to be aware of how the narration will bring meaning to the reader.

Placement of the description
The description should be included at a point where the illustration is first referred to in the text, or at the end of the paragraph.

If there are many illustrations grouped together, the descriptions should be placed at the end of the chapter, section or book, as appropriate to the format and mentioned in the production notes. (Taken from the RT Guidelines on Visual Description)

Pictures in print material (e.g. illustrations and photographs) are not usually described in the audio version. However, the following exceptions may apply:

• If the picture or pictures contain a reasonable amount of print (e.g. photographs of letters, film posters, etc.) this may be narrated within an explanatory narrator's note (e.g. "Narrator's note: a film poster appears at this point in the print copy. It reads ` `. End narrator's note.").

• Cartoons can also be described within a narrator's note. The note should give the minimum amount of description necessary to make sense of the dialogue. (For example: "Narrator's note: at this point in the print copy there is a comic strip called Boofhead which was drawn by Bob Clark. It consists of 3 boxes which
show Boofhead talking to a woman. The dialogue reads as follows: Box 1 - Woman: ` `; Box 2 - Woman: ` ` etc. End of narrator's note.

- If pictures provide information which supplements the text, they may be briefly described within a narrator's note. This is particularly important when the picture is referred to in the text, contains information which is necessary to understand the text, or contains information that is necessary for the completion of exercises (in this instance the narrator must be careful not to supply the answer).

- If the captions that accompany pictures contain information which supplements the main text, they may be narrated within a narrator's note, even if the picture itself is not described. They should usually be inserted at an appropriate break near the relevant point in the main text. In the case of photo stories the entire article may be described within a narrator's note which incorporates the captions.

- If pictures have been grouped together in the print copy or relate only generally to the main text, it may be appropriate to narrate a list of the pictures and/or their captions at the end of each chapter, or at the end of the main text.

(See also A.27).

### A.16 Plays

When recording the text of a play, all stage directions and the name of the character who is speaking should be given.

If possible, more than one narrator should be used when the text of a play is being recorded in its entirety. One narrator should narrate the stage directions etc. (this can be done in an undertone) and additional narrators should narrate the dialogue, preferably with a different narrator for each character.

Plays appearing within a prose text should be recorded in one of the following ways depending on the context:

- as per entire stage plays, described above;

- the book's main narrator gives the stage directions etc., with another narrator narrating the dialogue (varying character voices as appropriate); or

- the book's narrator narrates all stage directions and dialogue.
A.17 Puns

If a pun occurs in the print text, this should be made apparent to the reader of the audio version. The existence of the pun will sometimes be obvious when the text is narrated, but in most cases one of the following approaches will be necessary:

- a narrator's note may be inserted at the end of the sentence or paragraph in which the pun appears, giving the spelling of the relevant word(s); or

- the relevant word may be spelt in an undertone immediately after it appears (this should be done when a narrator's note would be too disruptive to the dramatic flow of the text).

A.18 Questions and answers

Questions and answers occur in various contexts in print, including interviews, quizzes (particularly in children's books) and as a method for presenting information in pamphlets, etc.

If only one narrator is being used, the questions and answers should be identified by inflection and phrasing, and/or by saying "question/answer". If two narrators are being used, one narrator can give the questions and the other the answers (see also A.6).

A.19 Quotes

Quotation marks signifying dialogue, titles (e.g. of other books, films) or irony/sarcasm should be indicated by tone of voice and/or characterisation. Apart from this, readers should be made aware of any quotes appearing in the print text.

These should be indicated by "quote/end quote" whenever possible. The following exceptions may occur:

- Epigraphs - these should be indicated by "epigraph" to separate them from other material at the beginning of the book.

- Quotes at the beginning of chapters - these are often adequately indicated by phrasing and/or tone of voice, although "quote/end quote" may sometimes be necessary to avoid confusion.
• Quoted words within a sentence (e.g. "David Copperfield is shocked by the appearance of Mr Wickfield: not by his unwholesome ruddiness or full and bloodshot eyes but by the degrading spectacle of his submission to that crawling impersonation of meanness - Uriah Heep.") - it may be too cumbersome to use the method described above in this context. If most of the sentence is quoted, the first and last words quoted may be signified by "quote/end quote" and the author's contributions signified by a change in tone. If only a few words are quoted, these may be signified by phrasing and/or tone of voice.

• Reported speech or writing (e.g. "I got drunk because I was rejected, wrote Henry Lawson, and I got awfully drunk the night I was accepted.") - in some cases it may be better to indicate this using phrasing, tone and/or character voices rather than "quote/end quote", particularly when the beginning and end of the passage are clearly identified in the text. However, it must be clear to the reader which sections are quotes and which are not.

• Quotes within quotes - in most cases these should be indicated by "inner quote/end inner quote", or if this is too clumsy, by tone of voice. If the main quote has not been identified (e.g. if it is reported writing), "quote end quote" could be used.

• Quotes within dialogue or reported speech (e.g. "I would sit at the kitchen table, intoxicated by the foreign smells from the stove and the stream of Louie's words as she cooked. 'Pelligrina Rondinella - little Italian poem about the swallow. Pass me that spoon - no, the wooden one, hasn't your mother got a wooden spoon for cooking? Out of the mid-woods twilight, Into the meadows' dawn, Ivory-limbed and brown-eyed Flashes my fawn. Ah, poor Oscar Wilde! How disgraceful the way he was treated!'") - these should generally be indicated by phrasing and/or tone of voice, as "quote end quote" may sound incongruous.

A.20 Sic

When "[sic]" is used in the print text to signify that something has been copied exactly from an original, it should be narrated in context. If the item to which the "sic" refers is evident in audio format, (e.g. an obviously incorrect date) no further explanation will be necessary.

If the error is not evident in audio, (e.g. a spelling mistake), the "sic" should be narrated when it appears and a narrator's note should be inserted at the end of the quote, giving whatever additional information is necessary to enable the reader to understand why the "sic" has been used. Care should be taken not to over-explain or patronise the reader.
For example, a note to explain a spelling mistake could read: "Narrator's note: in this quote the name Roggen has been spelt R-O-G-G-A-N. It appears as R-O-G-G-E-N in the main text. End narrator's note".

### A.21 Song lyrics

If song lyrics appear in a print text they should usually be spoken rather than sung, even if the tune is well known. This is because the author has quoted the words rather than the music. Occasionally it may be more faithful to the author's intention to sing lyrics, particularly if this suits the dramatic requirements of the text (e.g. in dialogue). A consistent approach to this issue should be maintained within each title recorded.

### A.22 Sounds

Print representations of sounds (e.g. "wheep whew" to represent a man's whistle) should be narrated as the printed words (i.e. "wheep whew") rather than as the implied sounds (i.e. an actual whistle).

### A.23 Spelling

In recreational reading, words should only be spelt if they occur in a context where the reader is likely to be writing them down (e.g. contact names and addresses, authors' names) and the spelling is not obvious. It is preferable to spell words within a narrator's note, but if this is too disruptive it may be done in an undertone immediately after the word first appears.

For guidance on spelling in student and vocational texts see 8.4.6 and also A.17.

### A.24 Symbols

Symbols are generally used to denote concepts, omissions or items in a list. Where possible, symbols for concepts should be narrated according to common usage (e.g. + plus, & and, @ at, # number). Depending on the context, less common symbols (e.g. phonetics) may need to be explained in a narrator's note.

For more information on symbols refer to the National Braille Association of New Jersey's “Tape Recording Manual” (see References, also A.11.).
A.25 Symbols used to indicate omissions

Print texts signify omissions in a number of ways, depending on the context, and the most common cases are described below. If the meaning of the omission cannot be conveyed by any of these techniques, a narrator's note should be used.

A.25.1 Ellipses (...)

When an ellipsis is used for dramatic effect (e.g. pregnant pause, trailing off of speech), this can usually be conveyed by tone of voice and/or a pause.

An ellipsis may also be used to signify a deliberate omission from a quote. In fiction or transcribed interviews it may be preferable to convey this with a pause, but in student texts or other books which may be used for study purposes the presence of the ellipsis should usually be indicated by stating "ellipsis", "omission" or "dot dot dot".

A.25.2 Swear words, names etc.

If swear words or names are denoted by blanks or symbols as opposed to being written in full (e.g. d---, @#&*!, Mr B---), this should be indicated to the reader. Any letters given should be narrated, and the blanks or symbols should be denoted in one of the following ways, depending on the context:

- a tone or "beep" (if this is available) - a pause
- the word "blank"

In cases where none of the above work, it will be necessary to devise an alternative which may involve a narrator's note.

A.25.3 Dates

Whole or partial omissions in dates are usually indicated in print by a question mark, blank or space. These should be narrated in a manner that conveys maximum information to the reader, which will depend on the context. For example:

- "? - 1889" could be narrated as "date unknown to 1889";
- "182? - 1889" could be narrated as "eighteen twenty blank to 1889";
- "1965 - " could be narrated as "born 1965", "1965 to present" or "1965 onwards", depending on the context.
A.25.4 Blanks in bibliographies

When a line has been used in a bibliography to indicate that a title was written/edited by the same person(s) as the previous title, the name(s) should be repeated.

A.26 Textual notes

Textual notes, including footnotes and endnotes, should be narrated at the appropriate point in the main text if they are denoted by a symbol (e.g. *) and/or are few in number. Generally they should be inserted at the end of the sentence in which they appear.

Notes narrated in the main text should be introduced by "author's note" or "editor's note" and concluded by "end author's/editor's note". In this case note numbers need not be given for recreational material, but should be given for student and vocational material.

(See also 4.4.10 and 8.5.10).

A.26.1 Notes

If a book has a large number of notes these may be read at the end of the book in order to avoid disrupting the main text. This should be structured if possible (see Chapter 11), and may also contain descriptions of maps, graphs, diagrams etc., lists of photographs and/or the book's appendixes.

The procedure for recording notes should be as follows:

- Explain to the reader in the production information that the textual notes have been recorded at the end of the book and that this has been structured (if applicable).

- Narrate the number of the note as "Note X" where it occurs in the main text. If there are a large number of chapters, adding the chapter number ("Chapter X, Note X") may assist the reader.

- At the beginning of the notes section of the audio book explain the format in which the notes have been recorded and the structuring method used. - Narrate the notes in the order in which they appear in the print copy, beginning each one with the same label used in the main text ("Note X" etc.).
A.26.2 Ibid/Op cit

When "ibid" occurs in a list of textual notes, the relevant author and title should be repeated followed by the page number given. It is not necessary to narrate "ibid" or to repeat any other details about the reference. "Op cit" may be narrated as given, as the author's name will be included.

A.27 Unconventional typography and print layout

The conventions of print layout are sometimes broken in order to convey meaning (e.g. in poetry and children's books). This should be indicated to readers with print disabilities if it is possible to do so without drastically disrupting the narration.

Generally the best approach is to provide an explanation in a narrator's note and then narrate the relevant text without interruption. In some cases it may be necessary to establish verbal signals which can be used to indicate particular print features during the narration.

For example: "Narrator's note: in the print copy the third and fourth lines of the following poem are printed diagonally across the page slanting from left to right. The rest of the lines are printed horizontally in a conventional fashion. End narrator's note."

(See also 8.5.7).

A.28 Visual information

Maps, diagrams, graphs, tables, flow charts and genealogical tables should be briefly described if they contain information which significantly adds to the main text and can be conveyed usefully in audio format. Care must be taken not to rush the narration of these descriptions, so the reader has enough time to absorb the information. It may be appropriate to limit the description to the most relevant information.

Descriptions may be given within narrator's notes and inserted at an appropriate break in the main text, as close as possible to the first reference to the item. If the visual material is printed on a different page from the one during which it is being narrated, this must be indicated for student/vocational material. For example: "Figure 9.2, printed on page 32."

Lengthy descriptions may be recorded separately and narrated at the end of the book. In this case, it will not be necessary to situate them within a narrator's note, but
each item and its location in the print copy must still be fully identified. See 4.4.8 and A.26.1 for more information.

It may also be appropriate to provide some visual material (e.g. maps) in another format (e.g. tactual graphics).

The procedure for describing visual information should be as follows:

- Narrate the figure number and the caption if applicable.
- Describe only the essential features, and omit minor details.
- Establish and announce a baseline for the description.
  - If it is linear, read it from left to right, top to bottom, etc. Do not use compass points.
  - For circular figures use clock-face positions, or work from large to small, small to large, etc.

(See also A.15, 4.4.8 and 8.5.8).

**A.28.1 Examples of tactiles and verbalisations:**

Use 'Narrator's notes' or 'Transcriber's notes' for verbalisations, captions and descriptions.

- Captions, descriptions and verbalisations are parenthetical to the main text and should be included in either ‘Narrator's Notes’ or ‘Transcriber's Notes’.
- Captions should precede any description.
- Readers will understand that information, apart from captions, contained in a narrator's or transcriber's note is an explanation and as such a deviation from the text.

Avoid interpretation

- Any interpretation of the visual should, as far as possible, be avoided in any verbalisation.

Visual material should not be described if:

- The information involved is directly duplicated in the text;
- The description would be so long and convoluted that it would disrupt the main text completely and/or it would be very difficult to understand;
• The material adds little meaning to the text, for example, pull-quotes that are often only used as an editing device to break up the density of the text; or

• It is virtually impossible to describe the material in a comprehensible manner.

Omission

If it is necessary to omit something from the printed text, the reader should be informed of the existence of the item and the fact that it has not been included. In this case, make a narrator's or transcriber's note and include the caption where possible. For student texts, suggest that the student see his/her teacher or tutor.

A. 28.2 Photographs

Photographs should always be cited, and their captions should always be included.

The caption alone may be sufficient description of the photograph, in which case no further description is necessary. If the caption is not detailed, and/or there are important elements of the photograph that are not dealt with in the caption (e.g. features of historical dress or settings), these should be described. If the photograph contains any text (e.g. a photograph of a letter or poster) the text contained in the photograph should be reproduced.

Placement of the note

If the photograph is referred to in the text, the note should be included where the photograph is first referred to. If no mention is made of the photograph in the text, the note should be inserted at a break in the text near where the photograph appears.

Groups of photographs

If the photographs are grouped together, the caption/description should be placed at the end of the chapter, section or book as appropriate to the format. (Taken from RT Guidelines on Visual Descriptions)

A.28.3 Maps

For recreational material, maps should be described as long as it is possible to do so without confusing the reader. For student/vocational material, maps should only be described if they are important to the understanding of the text.

Complex maps may be simplified by conveying only the information which is most relevant to the main text. It is acceptable to assume that the reader has a basic knowledge of geography, except in the case of books for young children.

A map should be described as follows:
• Give a general statement about the title and contents of the map.

• Establish one or more major reference points (e.g. a country and its borders).

• List specific details (e.g. geographical features, cities, towns) in a logical sequence (e.g. clockwise, left to right, top to bottom), positioning them in relation to the major reference points.

**A.28.4 Diagrams**

The procedure for describing a diagram is as follows:

• Give a description of the diagram as a whole, including the title, concepts and shapes involved.

• If appropriate, establish reference points.

• Describe the details in a logical sequence (relating these to the reference points if appropriate).

**A.28.5 Graphs**

To describe a graph, first give the type (e.g. line, bar, pie), title and the basic concept involved. Then proceed as follows:

**A.28.5.1 Line graphs**

• Describe the horizontal and vertical axes, including the features depicted, the units of measurement used and their limits.

• Describe the general shape of the curve(s).

• Beginning at the left side of the horizontal axis, give each figure on the horizontal axis and its corresponding figure(s) on the vertical axis. If there is more than one curve this is usually for comparison, and it is not appropriate to describe the figures on each curve separately. The units of measurement need not be given for every coordinate, but should be repeated at regular intervals for complex graphs.

**A.28.5.2 Bar graphs**

• Describe the horizontal and vertical axes (including units of measurement) if the introduction to the description has not included this information.

• Give the figures for each bar. If a bar has more than one component give the total first and then give the figures for each component. It may not be necessary to give the total if the figures are percentages and the total is 100%.
A.28.5.3 Pie graphs

- Give the number of portions in the pie graph and the total figure it represents (unless it is 100%).
- Name each portion and give its figures.

A.28.6 Tables

Tables should be described as follows:

- Give the title and basic concepts involved.
- Give the number of columns and the heading of each column (including any sub columns).
- For each item in the first column give the corresponding figures or items in all of the other columns. When giving each figure it may be necessary to repeat the heading of the column and any units of measurement involved every three to four lines. It may be useful to insert the words "and" or "and finally" before the last column.

If a table is too complex to be read in full, it may be useful to narrate only the top and side headings, and the column totals.

A.28.7 Genealogical tables

These should be described as follows:

- In a fairly simple table, the best approach is to give all the information for each major branch before beginning the next one. Give the heading and the number of generations shown.

- In a more complex table, base each section of the description on one generation and its issue, starting from the top of the table. In the first section, give the members of the first generation, their spouses, the number of children they had, the names of their children, their children's spouses and any other details provided (e.g. date of birth). In subsequent sections, repeat only the children whose issue is given in the table and give their children and their children's spouses.
A.28.8 Flow charts

A.28.8.1 Simple flow charts
Flow charts which follow the same format as a genealogical table can be described in the same fashion, giving the information about each level and its relationship to the preceding or subsequent level as appropriate.

A.28.8.2 Complex flow charts
Flow charts depicting more complex relationships should only be described if it is possible to do so without confusing the reader, and may be simplified if appropriate.

The following techniques may be useful:

- Establish the main flow routes and work out the best way of describing them succinctly. Some repetition will be necessary but this should be kept to a minimum.
- In a circular flow chart, establish a point at which the route descriptions will start and finish.
- Use verbal adaptations of visual conventions, such as "arrow to" and "if yes/if no".
- Number items in the chart for easy reference.

A.29 Digital Recording Primer

‘Digital’ has for many years now been the catch word of our society and as such has taken on many inferences. This is often in the form of retailers selling products and telling us that by being ‘digital’ it is in some way better than anything that has come before.

So what does ‘digital’ mean and how does that impact our recording?

A.29.1 Definition:

- Digital – Resembling a digit or a finger

This definition might be confusing as we normally associate the word ‘digital’ with technology. If we break it down, what we can say is that if we count digitally, we count one finger at a time. i.e. There are no part fingers. So our new definition might look something like;

- Digital – A system for counting with discrete values
In electronics this is taken one step further in that there are only 2 possible values, 1 and 0. To make numbers larger than 1, a group of 1s and 0s are chained together using a simple mathematical formula where each successive 1 becomes the exponent of each successive number 2 and each 0 replaces the 2 and its exponent. All 'bits' are then added together as follows.

(a bit refers to each 1 or 0 in the chain)

\[1111111... = 2^0 + 2^1 + 2^2 + 2^3 + 2^4 + 2^5 + 2^6 + \ldots = \text{Number}\]

We could also describe this as each successive bit is double the previous bit

ie. \[1 + 2 + 4 + 8 + 16 + 32 + 64 \ldots...
\]

So for the following ‘4 bit’ numbers:

\[\begin{align*}
1011 &= 2^0 + 0 + 2^2 + 2^3 \\
&= 1 + 0 + 4 + 8 \\
&= 13
\end{align*}\]

\[\begin{align*}
0110 &= 0 + 2^1 + 2^2 + 0 \\
&= 0 + 2 + 4 + 0 \\
&= 6
\end{align*}\]

In the above examples where there are 4 bits (four 1s or 0s) we can represent any number between 0-15. To represent larger numbers we just add more bits.

Numbers that just contain a 1 or a 0 are also referred to as binary numbers.

**A.29.2 Digital Audio**

If all that is confusing don’t worry, the main point is that all digital numbers or systems have discrete values or steps.

In audio, a traditional ‘Analogue’ signal had an infinite number of values in both frequency (pitch) and level (loudness). With digital audio this is no longer the case and the same waveform is now represented by a series of steps.

In the following example we see a traditional waveform representing an analogue signal. We can see that it looks smooth and even.
Figure 1 Waveform representing an analogue signal

If we now look at the same signal in a digital form what we now see is a shape that looks similar to the analogue version but has a series of discrete steps. Welcome to digital!

Figure 2 Waveform of a digital signal showing discrete steps

This looks terrible, how can this be better than analogue?

In an ideal world this statement is true and analogue is far superior to digital. In fact analogue can be considered the perfect digital signal in that at its best, digital is trying to imitate analogue.

It’s not all bad for digital and for reasons why digital can be better, we will look at later.

We can improve the ‘quality’ of the digital signal above by adding more steps to the signal. This gives the digital signal a greater ‘resolution’.
Figure 3 Digital waveform with additional steps to improve quality of digital signal

As we can see by the above example adding more steps to the waveform makes a big difference in how closely we can make it resemble the analogue signal.

**A.29.3 How do we represent Audio as ‘digital’?**

An audio signal in its purest form comprises two values frequency (pitch) and level (loudness).

**29.3.1 Frequency**

Sound is created by an object vibrating in the air. If the vibrations are slow the sound produced has a low frequency (like the rumble distant thunder). If the vibrations are fast the sound produced has a high frequency (like sound of a shrill train whistle).

In fact all sounds that occur naturally have many frequencies combined together which creates the character (timbre) of the sound.

We define how high or low a frequency is by the number of times per second the oscillations occur. We measure this with a unit called a Hertz where:

1 cycle per second = 1 Hertz (Hz)

Our hearing is said to range from about 20Hz to 20000Hz (lowest to highest frequency) although typically most people cannot hear much above 15000Hz.

Because this range is so great we tend to refer to any frequency of 1000Hz and above as kilohertz (kHz). So 1000Hz = 1kHz

**29.3.2 Level**

Every sound or oscillation produced can either be very soft or extremely loud or anywhere in between. This is said to be the sound level.
We measure sound level with a unit called the **Decibel (db)**.

Sound Level can either be an absolute level or a relative level. We tend to represent acoustic sound as an absolute level with 0dB being silence and 150dB being a sound of extreme level (loudness).

In audio recording we tend to represent sound as a relative level. In this case we make 0dB the loudest recorded sound possible and –infinity dB as silence. The reason this is more useful for recorded sound is that we are usually interested in the maximum level we can record before the recording medium (digital or analogue) will distort the sound (clip).

Below is a picture of a Recording Peak Meter.

![Recording Peak Meter](image)

**Figure 4 Recording Peak Meter**

**A.29.4 Resolution of the Digital Sound**

**So how do we represent frequency and level digitally?**

To turn an analogue (real world) sound into digital, it needs to be converted through electronic circuitry to discrete steps, or 1s and 0s as mentioned previously. To do this the sound is sampled a number of times each second. Each sample is stored as a number. This number represents the level of the sound at that particular time. i.e. each sample measures how loud the sound is at that point in time.

For CD quality audio this means sampling the sound (waveform) 44100 times every second. Thus the sampling rate is said to be **44.1kHz**

While 44100 samples each second seems a lot, the reason for this is that for each potential frequency there needs to be at least two samples. So for our hearing range of 20Hz to 20kHz we need more than 40000 samples. i.e. Double the highest frequency.
Additionally for CD quality audio the sample has 65536 individual steps.

Why 65536? Each sample is represented by a string of 16 1s and 0s. When we look at the above formula in the ‘definition of digital’ we see that if we add all the bits together we get 65536

\[1111111111111111\]

\[= 2^0+2^1+2^2+2^3+2^4+2^5+2^6+2^7+2^8+2^9+2^{10}+2^{11}+2^{12}+2^{13}+2^{14}+2^{15}\]

\[= 1+2+4+8+16+32+64+128+256+512+1024+2048+4096+8192+16384+32768\]

\[= 65536\]

This string of 16 1s and 0s is referred to as a 16 bit value.

CD audio is thus referred to as **44.1kHz, 16Bit digital**.

How much difference does a bit actually make?

Looking at the above formula we can see that for each bit of information we add to the sample we actually double the resolution.

Modern recording software and computers typically record in 24 bit which is a whopping 16,777,216 steps. This equates to 256 times to resolution of CD quality.

Can you hear the difference?

The answer to this question depends on the source material. For a high quality music recording the difference between 16bit and 24bit is noticeable (but does not sound 256 times better) although most people will not hear the difference. With spoken word it will generally be very difficult to hear the difference even for a trained ear.

How to get the best out of digital recording?

Do we need to change how we record in the digital age?

In most cases good recording techniques will work well just as well for Digital recording as for Analogue, but there are a few things that need to be done correctly to avoid disaster!

**A.29.5 Getting the right recorded level**

In digital recording getting the level right is the most important factor.

29.5.1 Level too high

The worst possible outcome is to have the recorded level too high. Unlike analogue tape, where if the level occasionally got too loud, the tape would ‘saturate’ causing
the audio to go a bit fuzzy, digital audio as we have seen is a string of numbers with the loudest signal being represented by 1111111111111111 in a 16bit recording. On our record meter this is the red clipping indicator at the top. Since this is a finite value we cannot exceed it. If our audio does go above this value (clip) then each successive sample will be 1111111111111111 for the duration that the audio is clipping. What this means is that during this time all information about the audio is lost. In practice we will hear this as a loud and very unpleasant ‘crack’.

Figure 5 Waveform showing the signal clipping at 0dB

29.5.2 Level too low

Make sure the level is kept low so there isn’t a risk of clipping.

Unfortunately there is another danger waiting if the level is too low. We have looked at bit depth and the fact that for every extra bit we double the quality. It also works in reverse. By that, as we reduce the recorded level we reduce the bit depth and thus the quality. This is like going back to our waveform with the big steps.

Figure 6 Waveform with big steps if levels too low
In fact for every 6dB we drop from the maximum 0dB we lose 1 bit of quality. (All the bits are still there, we just aren’t using the end ones).

For example if we record at -24db on the meter and we are using 16bit recording we are actually only using 4096 of the available 65536 available sample steps. This means we have lost 94% of the available information in the audio signal. In practice we will still hear the voice but it will be lifeless and not sound very good.

29.5.3 The right level

All this sounds a bit hard!!

All is not lost. By understanding both of the above principles you can achieve a healthy balance that will sound perfectly acceptable. Just make sure that the loudest recorded sound sits just a few dB below 0dB on the meter.

29.5.4 Getting the sampling rate and bit depth right

The other logical answer would be to record everything at the highest possible sample rate and bit depth to make sure the quality is as good as possible.

While this sounds good in theory, the trade off is that all of those extra samples and steps in each sample mean that your recording will take a lot more space on your computer. Fortunately modern computers can take many times more information than computers of only a few years ago. Add to this the fact that a typical audio book may last for 6-10 hours and you still have a large amount of data to store.

For recording a master of a book using human narration, 44.1kHz / 16Bit should be sufficient to maintain quality at a manageable storage size.

A29.6 Background Noise

The one thing you will notice when recording digitally is that unlike tape recording there is very little noise. When recording to tape we had a constant hiss that was audible under all recordings.

The first response to recording digitally is that now the hiss is gone everything sounds so much cleaner. This is in some way true but what it also means is that any noises in the background of the recording will be heard clearly whereas previously those same noises would be masked by the tape hiss. (for example, birds, dogs barking, neighbour’s lawn mower).

Again this is not necessarily a problem but something to be aware of. Managing the background noises will make for a very nice recording in the digital age.
A29.7 Why use Digital

Despite the concept that digital is only an imperfect representation of the Analogue signal there are some clear benefits.

The resolution (step size) of modern digital formats is sufficiently small to give a high quality audio signal.

Digital files can be copied endlessly without quality loss, whereas analogue signals reduce in quality with every copy generation.

Most significantly, we rely on computers to create, transfer, store and distribute the audio. Computers only use and store information digitally.
Appendix B Law Texts

In general, law texts should be narrated according to the principles outlined in Chapter 8.

Note that various producing agencies may have slightly different approaches, procedures and protocols dealing with this particular chapter.

As with all student work, attention to detail is vital and the information must be absolutely accurate so students with print disabilities are not disadvantaged in assessments. The recording must also be structured, so specific sections can be located quickly (see Chapter 11).

However, because of the particular nature of legal notation, the specific requirements for recording law texts sometimes differ from those for other texts. The following additional guidelines should be used in conjunction with Chapter 8 and also Appendix A.

B.1 Textbooks

B.1.1 Structuring

In some law texts, paragraphs within each chapter are numbered as well as pages. In this case it may be preferable to include the paragraph numbers rather than the page numbers in the structuring process. It will still be necessary to give page numbers as they occur (see Chapter 11).

B.1.2 Edition number

The edition number and date of publication are of particular importance in law texts. These should always be made clear in the introductory announcement.

B.1.3 Table of contents

The table of contents must be narrated in full, including all page numbers and paragraph numbers if applicable. Parts, chapters, sections and sub-sections must be clearly identified with consistent use of terminology and structuring. It may sometimes be helpful to number these divisions in order to make the structure of the text clearer to the student.
B.1.4 Table of cases, table of statutes & index

The table of cases, table of statutes and index should be narrated, depending on the text and the needs of the individual student. If they are omitted, their existence must be indicated, both in the table of contents and at the point where they occur in the print copy. If tables of cases and statutes are included, the text proper should be indicated and be structured accordingly in a new section of the audio recording (see Chapter 11).

B.1.5 Italic

All sections in italics (except for case names) should be indicated by "begin italics/end italics".

B.1.6 Textual notes

All footnotes and endnotes in law texts must be narrated in full, either at the end of the sentence in which they occur or at the end of book. If narrated at the end of the sentence they should be indicated by "footnote/ end footnote", and all numbers should be given. If the note occurs mid-sentence, the number must be given exactly where it occurs.

For example, the sentence "whether the land is under the general law 9 or under the Transfer of Land Act.10" should be narrated "whether the land is under the general law nine or under the Transfer of Land Act ten. Footnote nine: Hunt v. Luch (1902) 1 Chapter 428. Footnote ten: Cullen v. Thompson (1879) 5 V.I.R. E 147. End Footnote". (For the treatment of brackets and abbreviations, see below.)

B.1.7 Abbreviations

Abbreviations are used frequently in law texts, particularly in footnotes. They should be narrated as they appear in the print copy (generally letters only), and should not be given in full, as this might lead to errors. However, the letters "All" in the abbreviation "All E.R." should be read as the word "all".

Abbreviated words appearing in footnotes (such as "App. Cas.", "Tas. L.R.", etc.) should be narrated as they appear. Abbreviated words in the text itself should generally be narrated as abbreviated although they may be read in full if the meaning of the abbreviation is absolutely clear.

If a list of abbreviations is included in the print copy, this should be narrated in full. If it appears after the main text in the print copy it may be useful to move it to the front of the audio version.
B.1.8 Quotes

All quotes, whether they are denoted by quotation marks, indentation or a smaller typeface, should be indicated by "quote/end quote".

Books with the words "Cases and Materials" (or similar) in their titles will contain a considerable number of direct quotes from judges. Care should be taken to ensure that all of these are identified.

B.1.9 Brackets

Square brackets and round brackets (parentheses) appearing in the print text need not be indicated in the audio version unless it is necessary to do so in order to make the meaning of the text clear to the reader. For example, "(1962) 2 All E.R. 428" should be narrated as "nineteen sixty two, two all E.R. four two eight".

When square brackets and parentheses occur within quotation marks, they must be indicated. This is because quotes appearing in law texts are usually part of a statement made by a judge in giving a decision on a case, and the square brackets or parentheses form an integral part of the decision.

As parentheses are more common, they can be indicated by "open bracket/close bracket". Square brackets should be indicated by "open square bracket/close square bracket".

B.1.10 References to statutes

References to sections of Acts of Parliament appear throughout law texts, and must be narrated with the utmost accuracy.

Commonwealth legislation routinely now uses nested numbering rather than brackets for sub-sections (eg. S35.2.1) Further names of Acts often include brackets to show that they are amending legislation. When reading the name of a case that uses brackets, they should make it clear by stating the full name of the Act.

The following guidelines should apply:

- When a capital letter appears immediately after the section number (i.e. it is not contained within any brackets), it is not necessary to indicate that it is capitalised.
- When a capital letter occurs within a bracket, the fact that it is capitalised should be indicated.
- Lower case letters need not be indicated as such when they are contained within brackets. When they are not contained within brackets, the lower case letter
should be identified (For example s.23a could be read as "Section 23 lower case a").

- Roman numerals should be indicated as such (see A.14).
  
  - s.23 - "section 23"
  - ss.23,24 - "sections 23 and 24"
  - s.23A - "section 23A"
  - s.23AA - "section 23 double A"
  - s.23AAA - "section 23 triple A"
  - s.23(1) - "section 23 one"
  - s.23A(1) - "section 23A one"
  - s.23(1A) - "section 23 one Capital A"
  - s.23(1)(a) - "section 23 one bracket a"
  - s.23(1)(a)(i) - "section 23 one bracket a, Roman one"
  - s.23(a) - "section 23 bracket a"
  - 0.23R.6 - "Order 23, Rule 6"
  - S.23.2.1 - "section 23 point 2 point 1"

### B.2 Acts of Parliament

The guidelines for law texts can usually be applied to the narration of Acts of Parliament, Regulations and Rules of Court. However, the following additional considerations should be borne in mind:

#### B.2.1 Audio Structuring

Acts of Parliament and Regulations are usually divided into parts and sections (there is usually a breakdown of these in one of the earlier sections). Both parts and sections should be structured (see Chapter 11). Page numbers must still be given in both cases.
B.2.2 Act numbers

In recordings of statutory material, the full name of the Act, the Act number and the number of the last amending Act must be included in the introductory announcement. This can be done as follows:

- Victorian Acts - "Bail Act 1958 No. 9008 incorporating amendments up to Act No. 9158".

In some instances, the amending Acts are contained on separate sheets or booklets within the main Act. These amendments should be incorporated into the main Act for narration. In this case, all numbers of amending Acts and the date of the print or reprint should be read and be included in the introductory announcement.

B.2.3 Marginal notes

Acts of Parliament contain marginal notes on the side of each page. These give a brief description of the material contained in each section or sub-section and details of any recent amendments. It is important that the date of the print or reprint should be read.

Marginal notes should be narrated in full after the number of the section or sub-section to which they refer, so that all content relevant to that section comes after the identifying section, part or division number. They should be indicated by "marginal note/end marginal note".

B.2.4 Complex sections of acts

Some Acts (particularly on taxation) contain very lengthy and complicated sections. These sections may begin with a number of pre-conditions to their provisions, with the provisions at the very end. In this case it may be helpful to briefly explain the general structure of the section before narrating it.

For example: "This section begins with the word 'where' and then has approximately one page of text containing four cumulative conditions in paragraphs (A), (B), (C) and (D). It concludes with the words 'the fringe benefit is an amortised fringe benefit'".
Glossary

**Bias**: a high frequency signal which is added to the master at the time of recording. This acts as a "carrier" for the recording and minimises distortion and noise.

**Cardiod**: the most common microphone response pattern, which is heart shaped - i.e. most sensitive to sound at the front and sides, and least sensitive at the rear.

**CDA**: Compact disc audio. CD Audio tracks are audio files that can be stored on CD media. The .cda files are representations of CD audio tracks and do not contain the actual pulse code modulation (PCM) information.

**Compression**: the modification of an audio signal to make it more constant and thus easier to record. Signals with low levels are made louder, and signals with high levels are reduced.

**Compression, digital**: converting a full wave file to MP3 as an example

**DAISY**: Digital Audio Information System – a DAISY book is a set of digital files that include: one or more digital audio files containing human narration of part or all of the source text; a marked-up file containing some or all of the text; a synchronization file to relate markings in the text file with time points in the audio file; and a navigation control file which enables the user to move smoothly between files while synchronization between text and audio is maintained.

**Decibel (dB)**: a unit of measurement of sound intensity or volume. One dB is about the smallest change in sound that the human ear can detect.

**De-esser**: a specialised limiter designed to remove the distortion which often occurs when a word containing the letter "s" (and to a lesser extent "f") is recorded.

**Distortion**: any alteration of the original signal which occurs during a recording. Uncontrolled distortion (which may, for example, be caused by levels that are too high or poorly aligned equipment) is highly undesirable.

**Download**: to download means to receive data to a local system from a remote system, or to initiate such a data transfer.

**Dropout**: a temporary loss of recording signal resulting from imperfections in the recording.

**Equalisation**: the selective amplification or diminution of certain frequencies in a recording, which can be used to improve the sound of a narrator's voice or compensate for poor acoustics.
**File Transfer Protocol**: Is a standard network protocol used to transfer files from one host or to another host over a TCP-based network, such as the Internet.

**Flutter**: cyclic high speed variations in the level of the recorded signal.

**Flutter echo**: quick repeated echoes in a recording, which occur when the microphone picks up both the original signal and multiple reflections of the signal from adjacent surfaces (e.g. walls).

**Frequency**: the number of oscillations of a sound wave in one second, measured in hertz (Hz). Low or bass frequencies extend from about 20-200 Hz, and high or treble frequencies from 3,000-20,000 Hz.

**Frequency response**: the ability of a recording system to reproduce signals at various frequencies.

**Hertz (Hz)**: the unit of frequency for sound and electrical waves. One Hz equals one cycle per second. One Kilohertz (KHz) equals 1,000 Hz.

**Limiter**: a device which modifies an audio signal by reducing signals with high levels.

**Magnetic field**: the volume of space affected by a magnet.

**MP3**: MPEG-1 or MPEG-2 Audio Layer III (or more commonly known as MP3) is a common audio format for audio storage designed by the Moving Picture Experts Group Motion Picture version 3.

**Noise rating**: the amount of noise in a particular area (e.g. a studio), expressed by figures such as NR5, NR10, NR15 etc., where the figures represent the number of decibels measured at 1000Hz. Each rating has a specified curve as defined by Australian Standards AS1469 (1983) for control rooms and AS2107 (1987) for studios.

**Oscillator**: a device that can generate a selected frequency at a known level, which is used to test the performance of equipment and generate tones for other purposes (e.g. tone indexing).

**Patchfield**: a means by which the inputs and outputs of a number of pieces of equipment can be brought together at a set of sockets in one convenient place. Different permutations of equipment can then be arranged using patchcords rather than plugging and unplugging leads at the back of the machines.

**Pops**: popping sounds which appear in a recording, caused by the violent movement of air onto the microphone. This is most often associated with the vocalisation of percussive letters such as "p".
Reverberation (reverb) time: The time that the sound of a signal takes to fade away, which can vary according to frequency. A reverberation time of 0.1-0.3 seconds is typical for a speech studio.

Sibilance: the distortion that sometimes appears in a recording, associated with the vocalisation of the letter "s".

Standing waves: the accentuation of a particular frequency or series of frequencies caused by a relationship between two flat surfaces (e.g. in organ pipes).

Streaming: Data streaming, commonly seen in the forms of audio and video streaming, is when a multimedia file can be played back without being completed downloaded first.

Synthetic Voice: Artificial human speech produced by a computer.

Upload: The inverse operation to downloading. Uploading can refer to the sending of data from a local system to a remote system with the intent that the remote system should store a copy of the data being transferred, or the initiation of such a process.

Wow: cyclic slow-speed variations in the level of the recorded signal.
References

The following reference list covers pronunciation, general information that is useful in recording audio books, information that will assist in recording specific subject areas, technical aspects of sound recording and sound archiving. Titles considered most essential are marked with an asterisk.

R.1 Pronunciation - English

A Guide to the Pronunciation of Australian Place Names
ABC Standing Committee on Spoken English
Angus and Robertson, Sydney, 1957

Australian Plant Genera
By James A. Baines
Surrey Beatty & Sons Pty Ltd, NSW, 1981
(includes guide to pronunciation of Australian plant names)

New Century Cyclopedia of Names (three volumes)
Edited by Clarence L. Barnhart
Prentice-Hall, New Jersey, 1954

The Penguin Macquarie Dictionary of People and Places
Edited by J.R.L. Bernard
Penguin, NSW, 1987

A Dictionary of Foreign Words and Phrases
by A.J. Bliss

Boyd's Bible Dictionary
By James P. Boyd
Holman Bible Publishers, Nashville, 2004
(includes pronunciations)

Chambers Concise 20th Century Dictionary
Edited by G.W. Davidson, M.A. Seaton and J. Simpson

Abbreviation Dictionary
By Ralph De Sola
Constable, London, 1969
English Pronounced
Melbourne, Sun Books, 1976
(English pronunciations of 1700 commonly mispronounced words)

An Explaining and Pronouncing Dictionary of Scientific and Technical Words
by W.E. Flood and M. West
Longmans Green and Co, London, 1952

The New Hamlyn Encyclopedic World Dictionary
Edited by Alan Isaacs
Octopus Publishing Group, England, 1988

Everyman's English Pronouncing Dictionary
Compiled & Edited by Daniel Jones & A. C. Gimson

The Australian Dictionary of Acronyms and Abbreviations
By David J. Jones
Australian Library & Information Association, Canberra, 2005 (6th edition)

The New Shorter Oxford English Dictionary (two volumes)
Edited by C.T. Onions

McGraw-Hill Dictionary of Scientific and Technical Terms
Editor in Chief Sybil P. Parker

BBC Pronouncing Dictionary of British Names
Edited & transcribed by G.E. Pointon

Dorland's Illustrated Medical Dictionary

The Concise Oxford Dictionary

The Macquarie Dictionary
The Macquarie Library Pty Ltd, NSW, 2009 (5th edition)

Webster's Biographical Dictionary
Merriam - Webster, Massachusetts, 1995

Webster's New Geographical Dictionary
G. & C. Merriam Company, Massachusetts, 2007
Longman Pronunciation Dictionary
By J.C. Wells
Longman House, UK, 2008 (3rd edition)

Oxford Dictionaries online
www.oxforddictionaries.com

Dictionary and Thesaurus – Merriam-Webster Online
www.merriam-webster.com

Dictionary of English Pronunciation – How to pronounce
www.howjsaw.com

Macmillan Online Dictionary with free audio pronunciation – British and American pronunciations
www.macmillandictionary.com

The Free dictionary – pronunciation
www.thefreedictionary.com

IDEA – International Dialects of English Archive
www.ku.edu/~idea/

R.2 Pronunciation - other languages

Berlitz Language Dictionaries
(French, German, Italian, Polish, Spanish, Turkish, Portuguese, Mandarin-Chinese, Korean, Danish, Dutch, Norwegian, Russian, Japanese, Vietnamese, Indonesian, Swedish etc.).
Berlitz Guides, Switzerland,
www.berlitzbooks.com

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www.collinslanguage.com/foreign-language-dictionaries

Greek-English Lexicon
Liddel and Scott, Oxford University Press

Guide to the Pronunciation of Papua New Guinea Place Names
Australian Broadcasting Commission, Sydney, 1975
Dictionary of Foreign Phrases and Abbreviations
by Kevin Guinagh
H.N. Wilson Co., 1965

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By Professor Charles Hamblin
Angus & Robertson, Sydney, 1984

Hugo’s Language Books
(Dutch, French, German, Russian, Italian, Portuguese)
www.dorlingkindersley-uk.co.uk

Easy Vietnamese
By Nguyen-Dinh-Hoa
Charles E. Tuttle, Japan, 1966

Polish-English Dictionary
By Iwo C. Pogonowski

Hippocrene Italian-English Dictionary
By Peter F. Ross
Hippocrene, New York, 1995

The Pocket Hawaiian Dictionary
University Press of Hawaii, Hawaii, 1975

The Oxford Dictionary of foreign words and phrases

Forvo: the pronunciation guide. All the words in the world
www.forvo.com

IDEA – International Dialects of English Archive
www.ku.edu/~idea/

English-Greek Dictionary online
www.ectaco.co.uk
R.3 General information

The Macquarie Thesaurus
Edited by J.R.L. Bernard
The Macquarie Library Pty Ltd, 2007
www.macquarieonline.com.au

A Guide to Developing Braille and Talking Book Services
Edited by Leslie L. Clark
International Federation of Library Association and Institutions, Germany,

Sydney 3000
By Joseph De Varda
Fact Finders, NSW, 1979 (2nd edition)
(useful for locating experts in particular subject areas - similar books may be available in other states)

The Macquarie Book of Events
Edited by Bryce Fraser
The Macquarie Library, Sydney, 1984, (2nd edition)
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Directory of Australian Authors
Edited by Mary Lord
National Book Council, Melbourne, 1989
(useful for locating authors to check pronunciations etc.)

Talking Books: Pioneering and Beyond
By Marilyn Lundell Majeska

Style Manual for Authors, Editors & Printers
Commonwealth of Australia, Canberra, 2002 (6th edition)
(useful for understanding print conventions)

Tape Recording Manual
National Braille Association Inc, New Jersey, 2000
(contains a great deal of useful information about abbreviations and the pronunciation of various languages, much of which is relevant to Australia)

The Macquarie Illustrated World Atlas
The Macquarie Library, Sydney, 1984
(useful for working out which country places are in, therefore for working out which language is relevant for pronunciation)
R.4 Specific subject areas

Handbook for Spoken Mathematics
Lawrence A. Chang
University of California, USA, 1983

Dorland's Illustrated Medical Dictionary
Saunders, Philadelphia, 2011 (32nd edition)

A Dictionary of Philosophy
Antony Flew

Gray's Anatomy
by Henry Gray
Running Press, Philadelphia, (40th edition)
www.graysanatomyonline.com

MASA: Medical Acronyms Symbols & Abbreviations
By Betty Hamilton & Barbara Guidos
Neal-Schuman Publishers, New York, 1988

Collin's Dictionary of Sociology
Edited by David Jary and Julia Jary
Harper Collins, Glasgow, 2005

Taber's Medical Word Book with Pronunciations
Edited by M. Katherine Rice
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R.5 Sound recording

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by Glyn Alkin

The Technique of the Sound Studio
by Alex Nisbett
Focal Press, Oxford, 1992
Handbook for Sound Engineers - The New Audio Cyclopedia
edited by G. Ballou
Howard W Sams & Co Inc, Indianapolis, 2005
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Audio Engineering Handbook
by I. Benson and K. Blair
McGraw-Hill, USA, 1988
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(looks at the more conceptual aspects of sound recording)

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WIPO (World Intellectual Property Organization) www.wipo.int
IDPF (International Digital Publishing Forum) www.idpf.org
DAISY Consortium www.daisy.org

R.6 Sound archiving

The Preservation and Restoration of Sound Recordings
By Jerry McWilliams
American Association for State and Local History, Nashville, 1979

Keeping Archives
Edited by Jackie Bettington
Australian Society of Archivists Incorporated, Canberra, 2008 (3rd edition)
The Management of Oral History Sound Archives
By Frederick J. Stielow
Greenwood Press, USA, 1986

A Manual of Sound Archive Administration
By Alan Ward
Gower, UK, 1990

Producing agencies may consider joining the Australasian Sound Recordings Association (ASRA), which is affiliated to the International Association of Sound Archives (IASA). ASRA holds an annual conference and produces a journal called the Australasian Sound Archive.

For further information contact:
Round Table on Information Access for People with Print Disabilities
P O Box 229
Lindisfarne, Tasmania 7015
Australia

Email: admin@printdisability.org
Web address: http://www.printdisability.org