
USING MINI DISCS

The Mini disc provides a useful recording format for broadcasters, but users need to adopt a different approach in using them.



WHAT ARE MINI DISCS

Mini discs were introduced by Sony in 1992 as a new digital audio format. Their aim was to provide an alternative audio format for consumer users.

The Mini Disc is a small optical digital disc, similar in some ways to the CD. Unlike the CD however the Mini Disc system is capable of recording. But note that not all Mini Discs and machines do actually record.

The Mini Disc is smaller than a CD at 64mm diameter (CDs are normally 120mm), and is enclosed in a protective jacket.

To enable the disc to carry the same length of recording as a CD (74 minutes maximum), the Mini Disc has a system of "data compression" which squeezes the audio material into almost one fifth of the original space. Sony calls this compression system "**ATRAC**" (Adaptive Transform Adaptive Coding). This system makes use of an understanding of how humans perceive sound to reduce the information without significantly affecting perceived sound quality.

In order to protect the playback system from the effects of moving the player around (as when jogging or using it in a car) the Mini Disc system uses a technique called "**buffering**". This buffering system has an additional benefit in that parts of a recorded item can be "skipped" over without any break in sound playback. Buffering allows a type of editing to be performed on the Mini Disc.

The Table of Contents

An area of the Mini Disc is also set aside (invisibly to the user) for storing a "Table of contents" (TOC or UserTOC – UTOC).

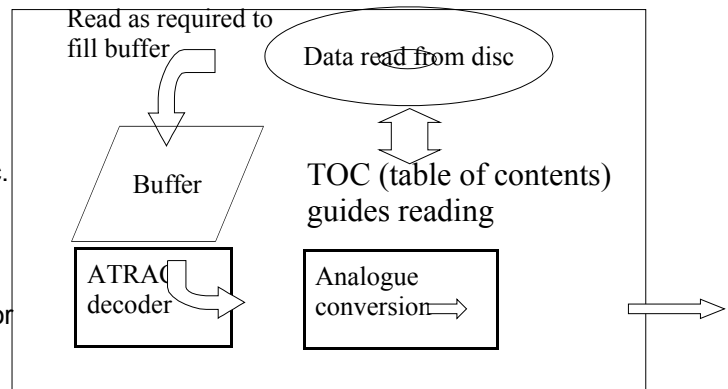
This is non-audio data about the recording, including the track positions and any other information including a possible textual track and disc naming facility. It is this TOC which is altered when material on the disc is edited (not the recording itself).

So for example, when a track has been deleted, the TOC is corrected to instruct the optical reader head to miss out that section when playing. No pause or click is heard, because the buffer holds sufficient material to "cover" the delay whilst the next material to play is located by the optical reader.

When a disk has been altered the TOC is not stored back on the disc immediately, This normally happens as the disc is ejected, or as the machine is powered down. To avoid problems, it is important to read manufacturers instructions regarding this.

Advantages

- **Digital format gives high quality**
- **Low noise**
- **Recordable**
- **Random access (easy access to any track)**
- **Almost instant start**
- **Recordings can be edited**



- Discs and machines are small
- Tracks and discs can be named
- The non-contact mechanism is less subject to wear and ageing

Limitations

- Compression system means quality is not as good as CD
- Machines can be too small
- Editing methods are unconventional
- Care needs to be taken to keep TOC correct
- Editing is not unlimited

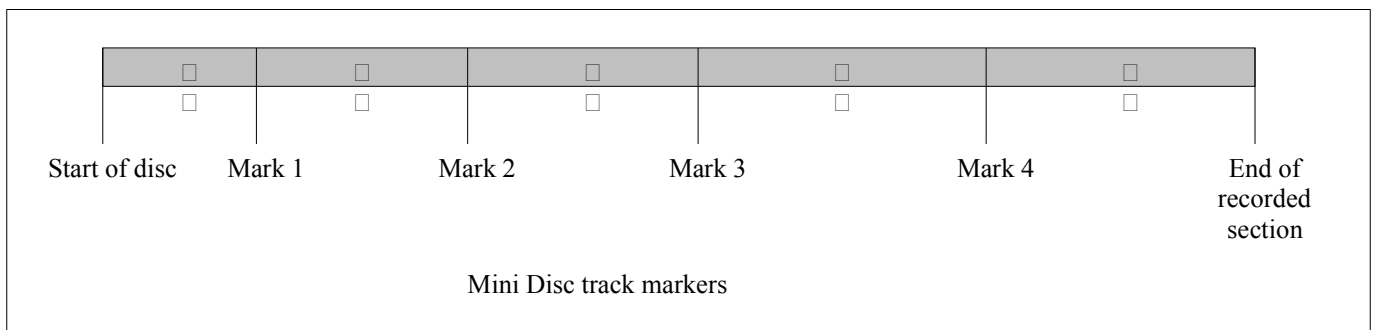
Mini Discs are in increasingly common usage in two general applications relating to Radio broadcasting:

1. As recording and simple editing machines for portable audio gathering (reporting etc.)
2. As playback of material in on-air studios where they provide near instant start of recorded material (cuts/spots/promos/adverts/jingles and so on)

THE TRACK METHOD OF EDITING

Because of the nature of the Mini Disc editing is performed in a slightly unconventional manner. All editing is based on the use of “tracks”. These tracks, like those on a Compact Disc are sections of the total disc recording which are marked as beginning and end points these start and end points can be placed anywhere on a recorded section of disc, irrespective of the recording.

All editing on Mini Disc is performed by manipulating tracks and track markers. Most Mini Disc machines will allow the following operations to be performed:

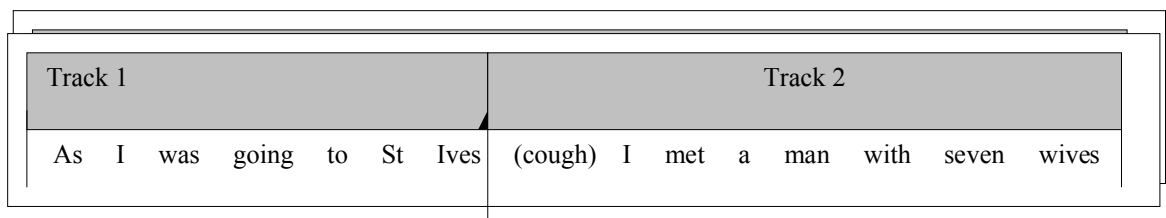


- Erase track marker (sometimes called combine tracks)
- Insert track marker (sometimes called divide tracks)
- Erase track
- Move track

There may be other operations provided on some machines such as “Undo” which allows the most recent editing function to be cancelled in some situations. By means of these 4 functions, editing can be performed in a manner similar to that using a blade to cut reel to reel tape. The operations are of course very different. The following examples are given in a general way, different models and makes of Mini Disc machine will vary

A simple cut edit

If a section of the recording is to be removed, such as a cough or some unwanted speech, then this is the general technique that is applied.



2. "Divide Track" or "Insert Track Mark" at this point (terms will vary with machine make and model). Some machines offer a "rehearse" function to allow this point to be moved slightly at this stage if required.

Track 1	Track 2
As I was going to St Ives (cough)	I met a man with seven wives

3. Locate end point of unwanted material.

Track 1	Trk 2	Track 3
As I was going to St Ives (cough)		I met a man with seven wives

4. Divide track or insert track marker

Track 1	Trk 2	Track 3
As I was going to St Ives	(cough)	I met a man with seven wives

5. Move back (skip) to beginning of new (unwanted) track

Track 1	Track 2
As I was going to St Ives	I met a man with seven wives

6. Erase the unwanted track
7. Playback your edit to check it. You may wish to remove the track division or combine tracks 1 and 2 if this is possible. (This will not affect playback.)

Advanced Editing

Editing can also involve the need to relocate material (as with re-takes recorded at the end of a recording session.) The process of doing this is similar to the cut edit shown above:

1. divide track/insert mark at new location of new piece (note the track number of this new track for later)
2. mark beginning and end of new piece to make it one track (as with the unwanted cough above)
3. move to the beginning of the piece to be relocated
4. move/relocate track such that it relocates before the new track made at point 1.

OTHER POINTS TO NOTE

As the information on a Mini Disc has been digitally processed to compress it, there is some (though to most people inaudible) loss of quality associated with recording and playing back from a Mini Disc. For this reason, it is not generally acceptable to make many generations (copies of) of copies using Mini Disc.

Different machines may have differing capacities and functions, and with most machines there are only a finite number of edits that can be performed. The capacity for editing will not be easily predictable as it depends on the types of edit and how demanding this is upon the pickup positioning and buffer system of the individual model of machine.