Professional perspective

Lorenz Vauck, MD & Chief Mastering Engineer of XARC Mastering (www.xarcmastering.com) in Germany, runs an online mastering facility. Clients can simply FTP or mail over mixes, which are then processed and returned. Lorenz explains some of his most common issues:

CLIPPING
If clients have clipped individual tracks or a final mixdown, this is usually non-recoverable. Peaks of -2dB are recommended to ensure sufficient headroom.

PROJECT RESOLUTION
Recording at 96kHz, 24-bit is recommended, because aliasing artefacts are then moved out of the audible range. There's a huge difference with tracks using virtual instruments that don't anti-alias internally. Also, XARC uses very high-resolution down-sampling, which easily surpasses most desktop alternatives.

COMPOUNDING ERRORS
There's a limit to how much mastering can rescue a poor mix, which is why XARC sometimes suggests additional mix previews as part of the service. Also, to avoid undoing things, it's best if mixes are not originally supplied in pre-optimized form.

Mixing tips for painless mastering

Make the mastering process run nice and smoothly by optimizing your mix with these techniques

1 MASTER OUTPUT
For correct gain structure, the master output slider should live at 0dB. Otherwise, it indicates the channels are too hot

2 SUB GROUPS
Sub grouping helps to manage the mix as well as provide more common insert points. Relevant channels need routing to the Group

3 LIMITING
It's common practice to strap a compressor/limiter across the outputs, both to catch peaks and to introduce warmth and character

4 EXTRA METERING
Level metering is your best friend. Extra spectral, pan and phase metering can really help to resolve monitoring issues

5 MASTERING EQ
Mastering EQ should be a phase linear type for maximum transparency. They commonly have multiple, infinitely tuneable bands

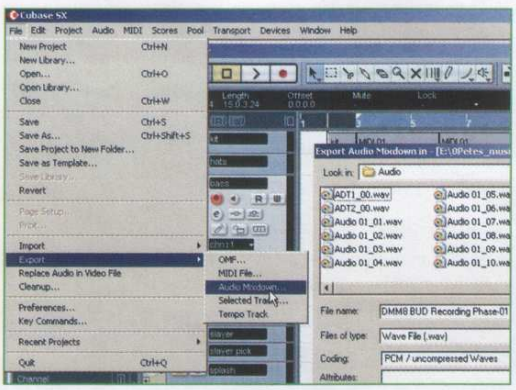
6 COMPRESSION
The final mix is often globally compressed with a vintage valve-style compressor to even out tone, add character and improve dynamics

7 MULTI-BAND
Industry standard mastering tools include Waves L1/L3 and TC Finaliser. Multi-band compression maximises frequency zones separately

8 OPTIMIZATION
A more magical alternative to multi-band compression is the brick wall optimizer, like Waves L1 & L2 and SonicTimeworks MC

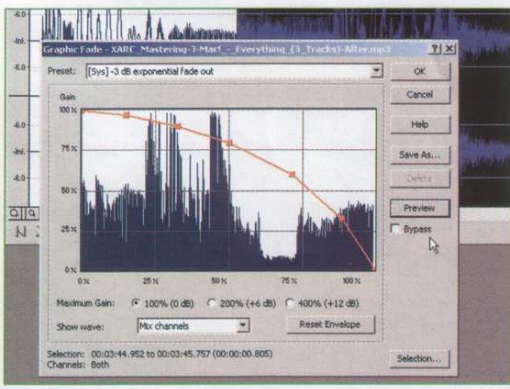
4 KEEPING IMPERFECTIONS

Rendering virtual instruments not only frees up CPU time or mix processing, but also makes them sound more solid. With nodelled analog synths, it makes the random imperfections onsistent, so you know what your mix is going to do.



5 RENDERING V FREEZING

In Cubase, the Freeze function can be convenient, although it's more temporarily buffered than rendered. All packages support some form of mixdown. When rendering, leave some space for the virtual instrument and/or effect to decay at a part's end.



6 FADE TO GREY

Slightly controversial perhaps, but rather than fading at mixdown, leave the fade till mastering. This will offer advantages for album segues and general track fade matching. Only once the track is in situ will you really know how it should move into the other tracks.