NAB vs. IEC

NAB

The NAB eq curve, used in North America, employs time constants of **3183 usec (50 Hz)** for the bass, & **50 usec (3183 Hz)** for the treble, at speeds of 7.5 & 15 ips, in playback mode. This spec originated in the early 1950's, when tapes had less HF capability, & bass boost in recording was employed at 50 Hz to avoid LF rumble during playback.

IEC

The IEC curve came a little later and is a curve which better matches and better utilizes the benefits of improved tapes. It uses an **infinite** time constant in the bass end (0 Hz), and a **35 µsec (4547 Hz)** time constant in the treble region at 15 IPS speed.

At 7.5 IPS, bass is the same, but the treble time constant is **70 µsec (2274 Hz)**. Again, IEC EQ provides less treble boost in playback (at 15 IPS speed), realizing a slight improvement in S/N ratio over NAB EQ. The difference is about 1.0 to 1.5 dB. At 7.5 IPS speed, NAB provides less treble boost and a little better S/N, 1.0 to 1.5 dB.

Compatibility

A tape recorded at 15 IPS w/ NAB EQ & played back w/ IEC EQ, will likely sound a little deficient in the treble, as well as in the deep bass. But the amount is not that great, like a dB or so.

A tape recorded in IEC, then played back in NAB will have slightly boosted treble & bass. The freq response is not flat this way, but there will always be some listeners who prefer boosted sound at the bass & treble regions.

If the recording speed was 7.5 IPS, then IEC provides more playback treble boost than NAB. So the treble response will vary in the opposite direction as above, but still a small difference. Bass remains the same as above.

If "flat" is the objective, then it is recommend to play back with the same EQ curve used during recording. Still, the difference is pretty slim, and if the right curve is not available, a parametric or graphic outboard EQ can restore flat response. Use the break frequencies given above and all should be well. Again, if an outboard EQ is not available either, no big deal. The deviation from flat

response is too scant to be concerned about.

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