

## STANDARD FLUX CURVES

If equalization is partly done during recording, **it is essential to establish a standardization in order to be able to play back a recording on any machine.** In fact, the organizations failed to produce ONE standard.

Unfortunately, two different standards have been in use for many years:

- CCIR (Comité Consultatif International des Radiocommunications), also IEC and DIN Standard.
- NAB (National Associations of Radio and Television Broadcasters, USA)

As different tape speeds have different equalization requirements, the flux curves are different for different tape speed. Different curves are also defined for professional (studio) equipment and for home use.

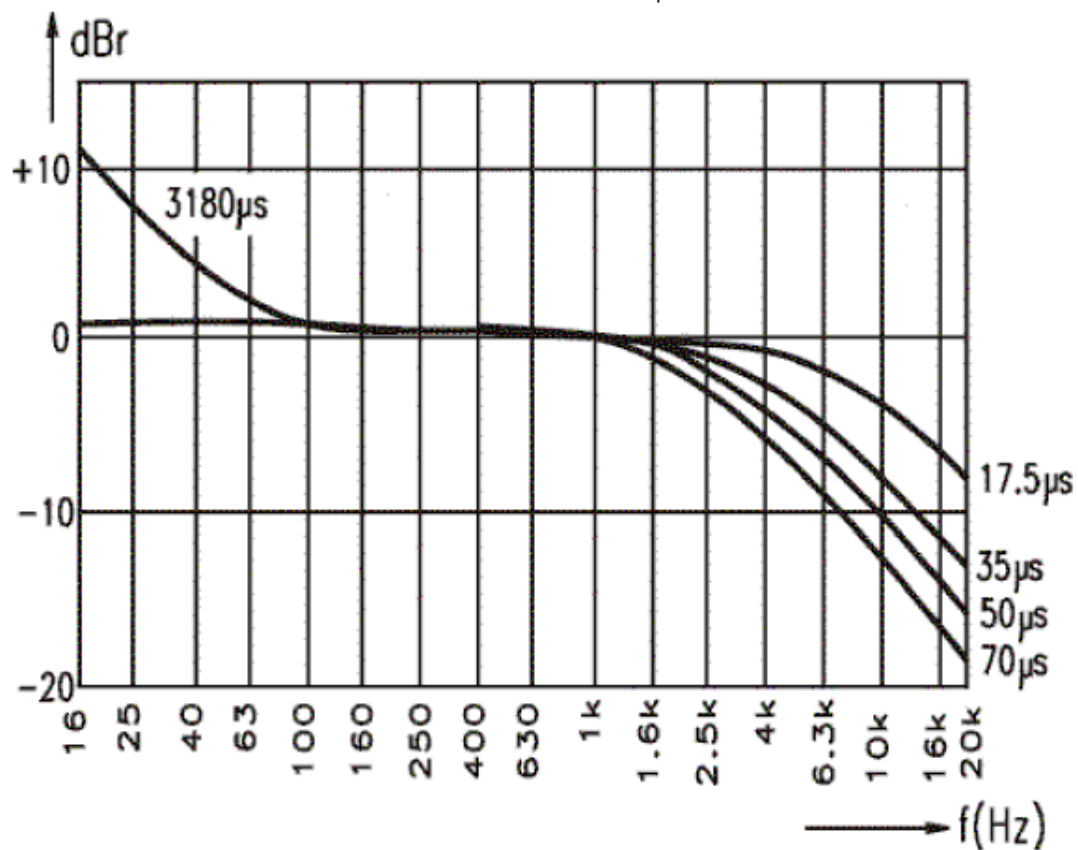
The standards give clearly defined and relatively easy producible curves for the frequency response of the flux on a recorded tape, the so-called standard flux curve. Such flux curves can only be produced or measured under laboratory conditions.

The flux curves are defined by the characteristics of some first order low and high passes. The critical frequencies of the filters are normally described by their time constant (RC).

Table of characteristics of the standard flux curves for CCIR and NAB for different tape speeds.

Tape speed	CCIR/IEC		NAB	
	bass boost	high roll off	bass boost	high roll off
38 cm/s (studio)	none	35 $\mu$ s	3180 $\mu$ s	50 $\mu$ s
19 cm/s (studio)	none	70 $\mu$ s	3180 $\mu$ s	50 $\mu$ s
19 cm/s (home)	3180 $\mu$ s	50 $\mu$ s		
9.5 cm/s (studio+home)	3180 $\mu$ s	90 $\mu$ s		
4.75 cm/s (studio+home)	3180 $\mu$ s	120 $\mu$ s		
4.75 cm/s (Fe-cassette)	3180 $\mu$ s	120 $\mu$ s		
4.75 cm/s (Cr-cassette)	3180 $\mu$ s	70 $\mu$ s		

The basic difference between the CCIR and the NAB standard is the bass boost at low frequencies for NAB. This bass boost was meant to improve the hum rejection during playback. The CCIR standard prefers simpler equalization and relies on improved screening of the play-back head.



*Standard flux curves for the standards used for professional studio equipment.*