APPENDIX C — THE R.I.A.A. FREQUENCY RESPONSE CHARACTERISTIC FOR DISC RECORDING

DEFINITION

The recording characteristic is defined as the radial velocity of the modulated groove as a function of the modulation signal frequency, with constant signal voltage applied to the recording channel bus. The velocity is the time rate of change of the radial displacement of the groove from its mean spiral position at the indicated rotational speed of the disc. The recording characteristic does not include any equalization preceding the recording channel input bus.

SPECIFICATION

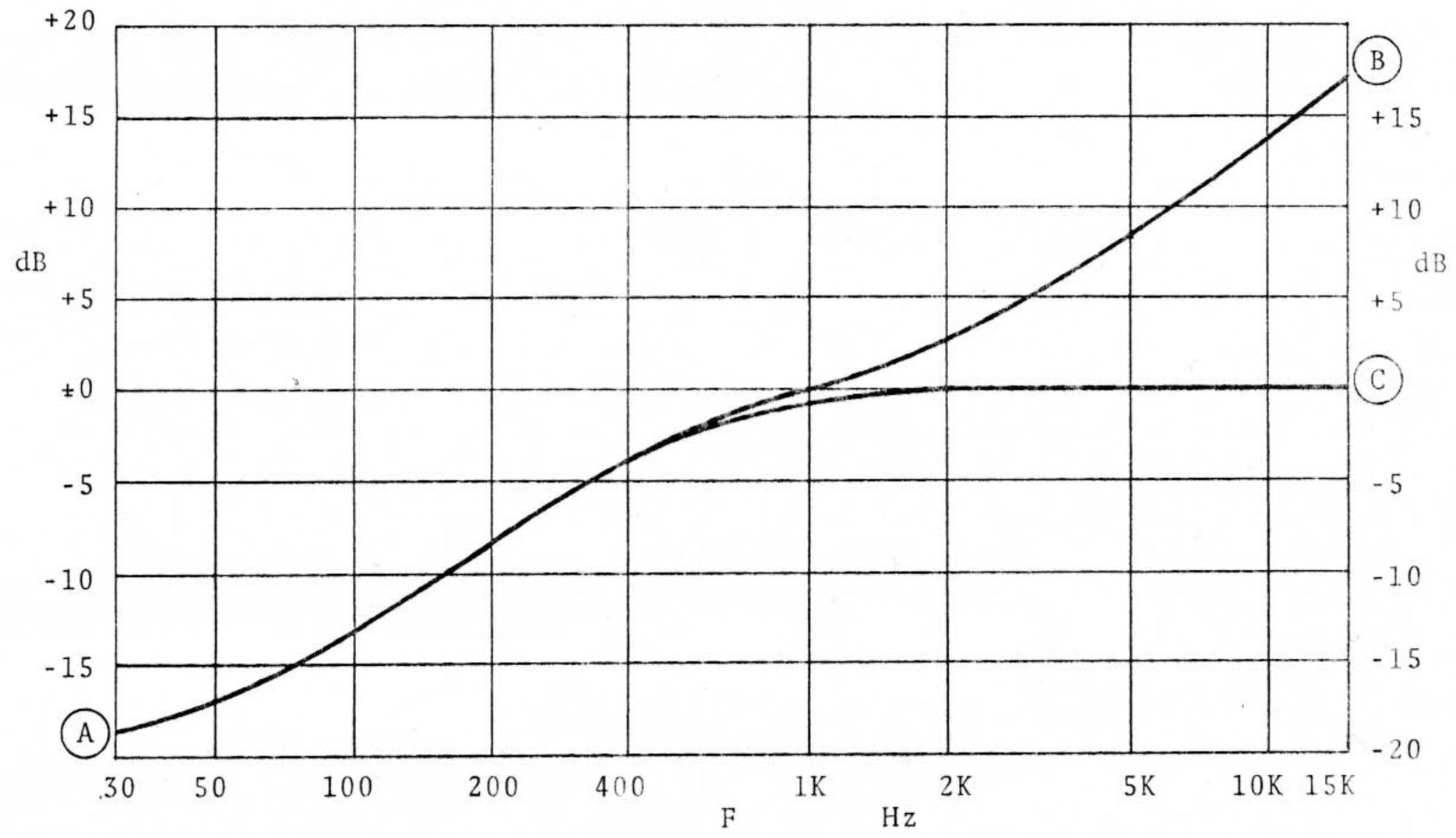
The R.I.A.A.[1] Standard Disc Phonograph Recording Characteristic curve is specified as the algebraic sum of the ordinates of three individual curves which conform to the admittance of the following three networks expressed in dB: (1) A parallel L/R network having a time constant of 3180 microseconds. (2) A series RC network having a time constant of 318 microseconds. (3) A parallel RC network having a time constant of 75 microseconds.

The following chart states the R.I.A.A. recording characteristic:

F Hz	dB
30	-18.61
50	-16.96
70	-15.31
100	-13.11
200	-8.22
300	-5.53
400	-3.81
700	-1.23

F kHz	dB
1	±0
2	+2.61
3	+4.76
4	+6.64
5	+8.23
6	+9.62
7	+10.85
8	+11.91
9	+12.88

F kHz	dB
10	+13.75
11	+14.55
12	+15.28
13	+15.95
14	+16.64
15	+17.17
20	*No Figure Given*



Appendix C Continued overpage →

The graph on the other side of this sheet shows frequency response for two cases:

1) Line AB is the full RIAA characteristic *with the switches on the RA1703 amplifiers in their RIAA positions.*

2) Line AC is the response with the 75 μS high-frequency emphasis portion of the RIAA curve omitted, and is the response recorded *with the switches on the RA1703 amplifiers in their FLAT positions.*

When the panel switch of an input amplifier is in the FLAT position, the low-frequency rolloff portion of the RIAA curve is still in effect; only the high-frequency portion is flat. Response is down approximately 0.9 dB at 1.0 kHz and 0.15 dB at 2.0 kHz.

When making discrete-band test cuts to be evaluated by the light-pattern method, one of two procedures may be followed:

1) 1.0 kHz may be recorded with the switches on RIAA, and higher frequencies recorded after the switches have been moved to the FLAT positions. The error at 2.0 kHz will be only 0.15 dB. Of course, no frequencies between 1.0 kHz and 2.0 kHz should be recorded.

2) All frequencies from 1.0 kHz upward may be recorded with the switches on FLAT, with the level of the input signal from the test generator raised 0.9 dB at 1.0 kHz and 0.15 dB at 2.0 kHz.

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