Bożena Kostek

Technologia studyjna

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Plany dźwiękowe

- bliski (pierwszy) $0 < \Gamma < 1$
- średni (drugi, normalny) $\Gamma = 1$
- daleki (trzeci) $1 < \Gamma < \infty$

Γ

Plan dźwiękowy jest zbiorem przestrzennym punktów usytuowania źródła dźwięku, w których stosunek pomiędzy dźwiękiem odbitym a dźwiękiem bezpośrednio padającym jest stały przy stałym natężeniu dźwięku

Plany dźwiękowe

$$\Gamma = \frac{E_r}{E_i}$$

Γ - współczynnik perspektywy akustycznej, kryterium obecności

E_r - gęstość energii akustycznej odbitej,

E_i - gęstość energii akustycznej bezpośredniej.

Odwrotność współ. Γ $\Pi = \frac{1}{\Gamma}$ – współ. powiększenia,

wielkość pozorna źródła dźwięku, stosunek akustyczny.

Gęstość energii pola akustycznego składa się z dwóch składowych: gęstości energii dźwięku bezpośredniego i gęstości energii dźwięku odbitego od ścian pomieszczenia

$$E = E_r + E_i$$

Promień krytyczny

$$r_0 = 0{,}057\sqrt{\frac{V}{T}}$$

r_0 - promień krytyczny, odległość krytyczna, promień dobrej zrozumiałości

V - objętość pomieszczenia,

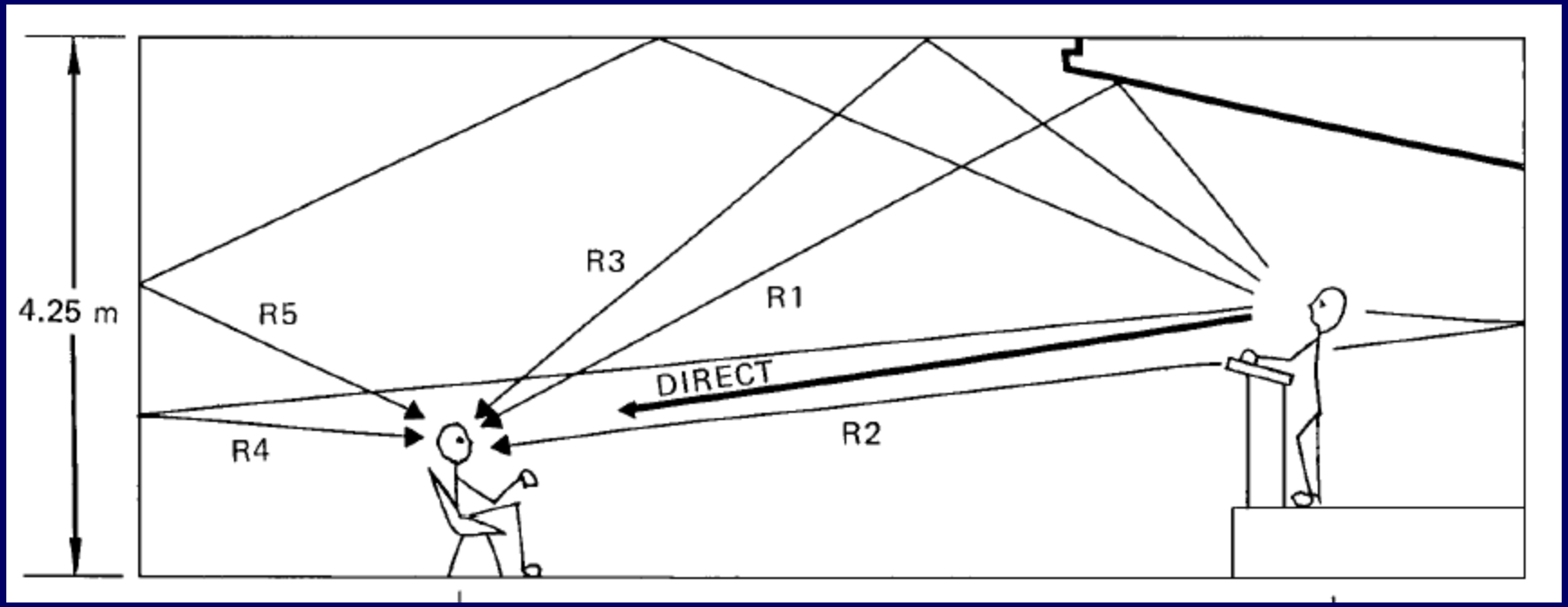
T_p - czas pogłosu

Γ

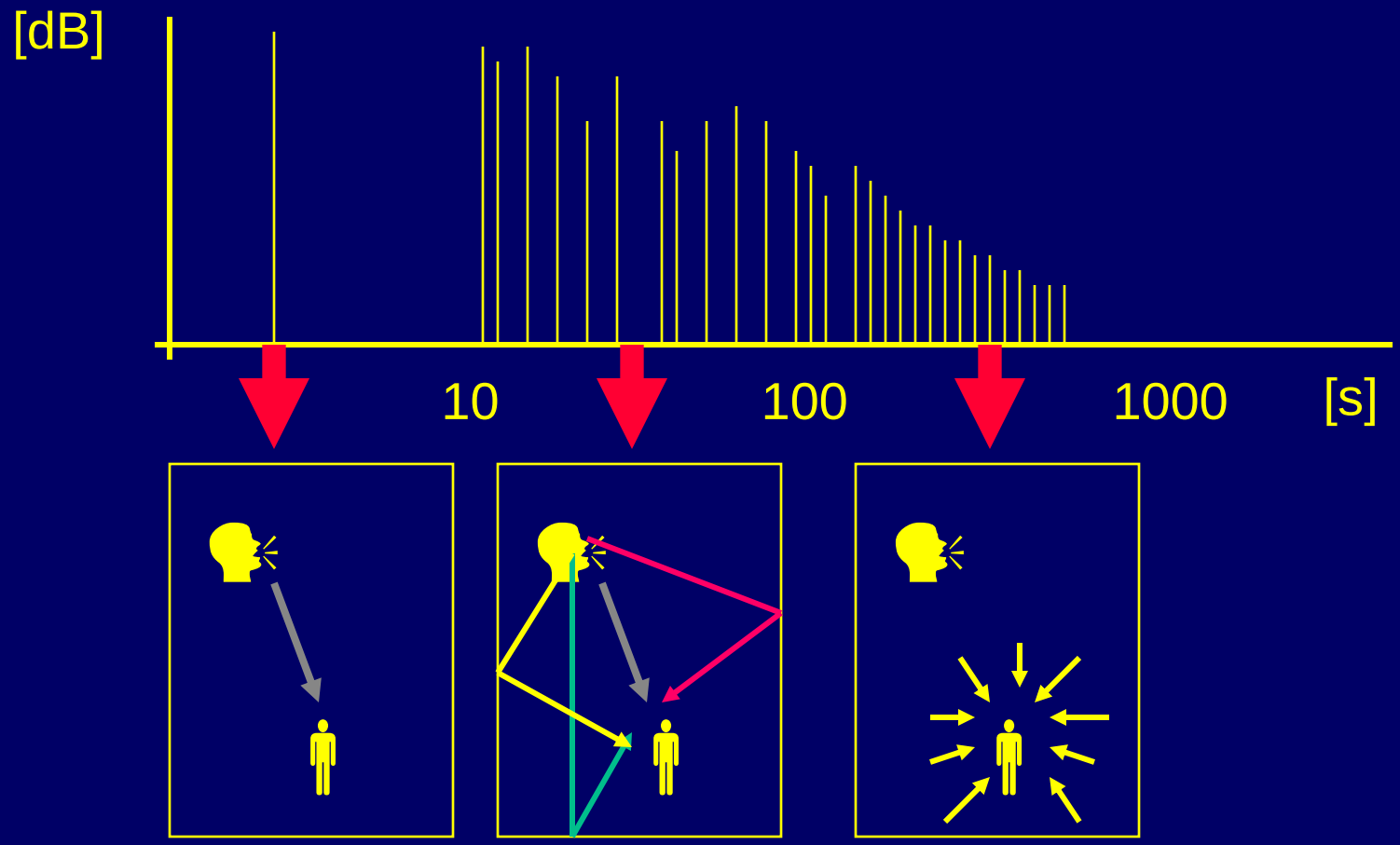
Dla założonej wartości Γ można określić odległość między źródłem dźwięku a mikrofonem.

$$r = 0{,}057\sqrt{\frac{V \cdot \Gamma}{T}}$$

Pole bezpośrednie i pogłosowe



Pole bezpośrednie i pogłosowe



Plany dźwiękowe

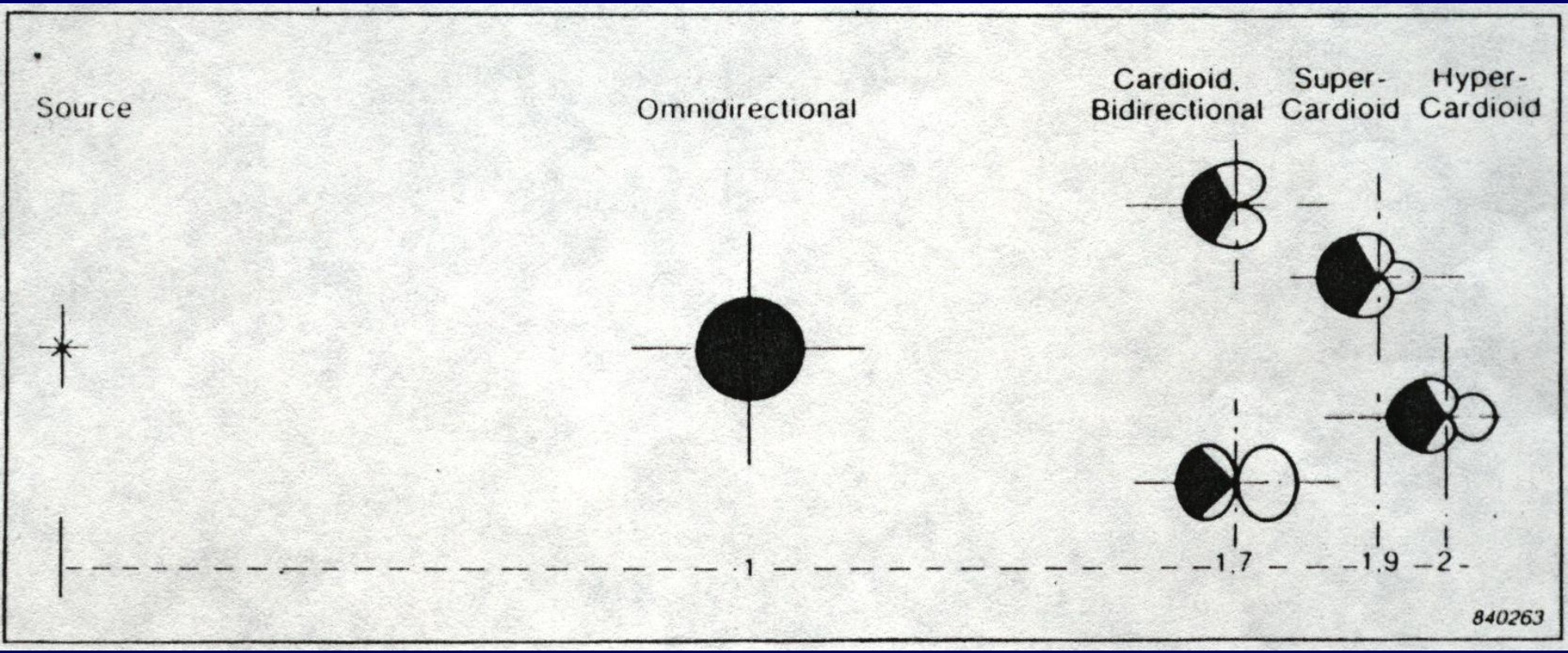
$$\Gamma = 310 \frac{r^2 \cdot T_p}{V \cdot \Omega_m \cdot \Omega_0}$$

Γ

Ω_m - współczynnik kierunkowości mikrofonu,

Ω_0 - współczynnik kierunkowości źródła dźwięku

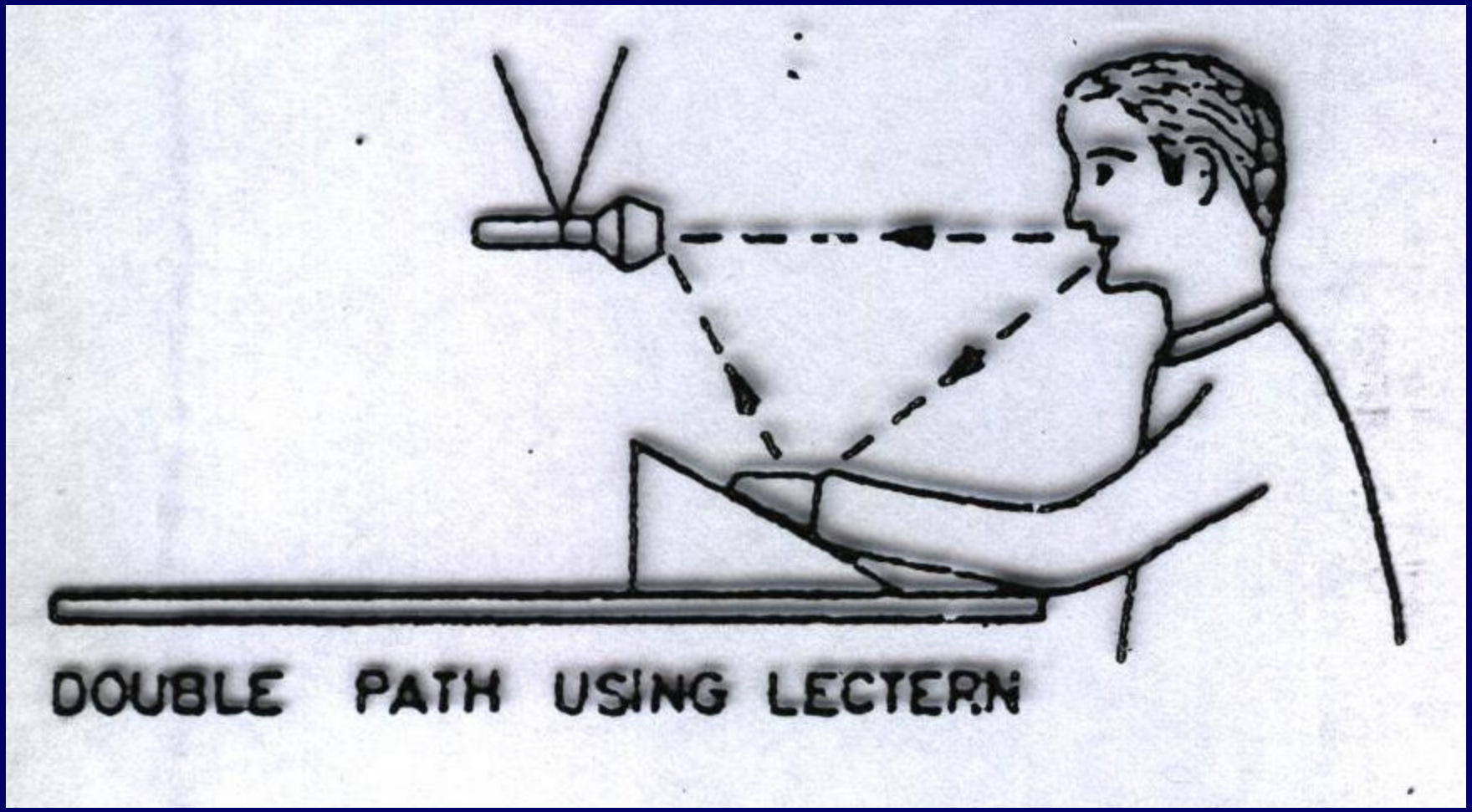
Ustawienie mikrofonu kierunkowego w zależności od współczynnika równoważnej odległości

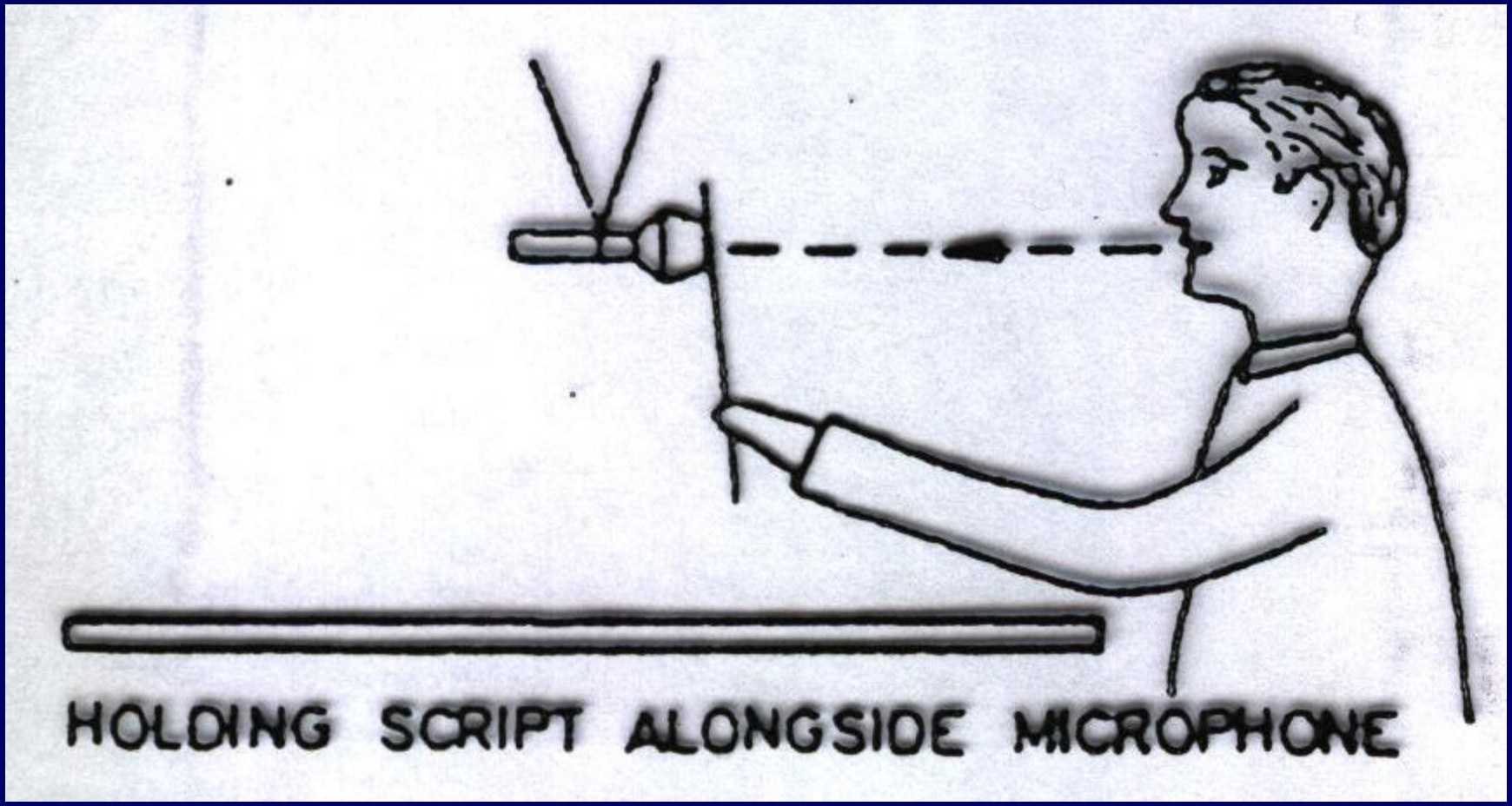


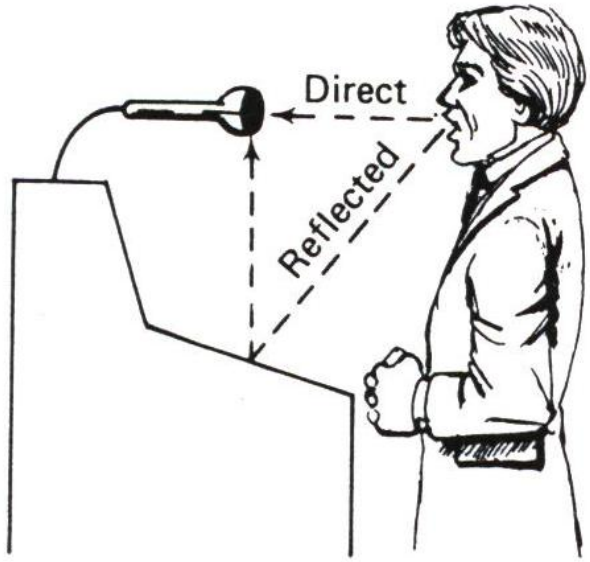
$$k = \sqrt{\Omega_m}$$

Współczynniki kierunkowości mikrofonów

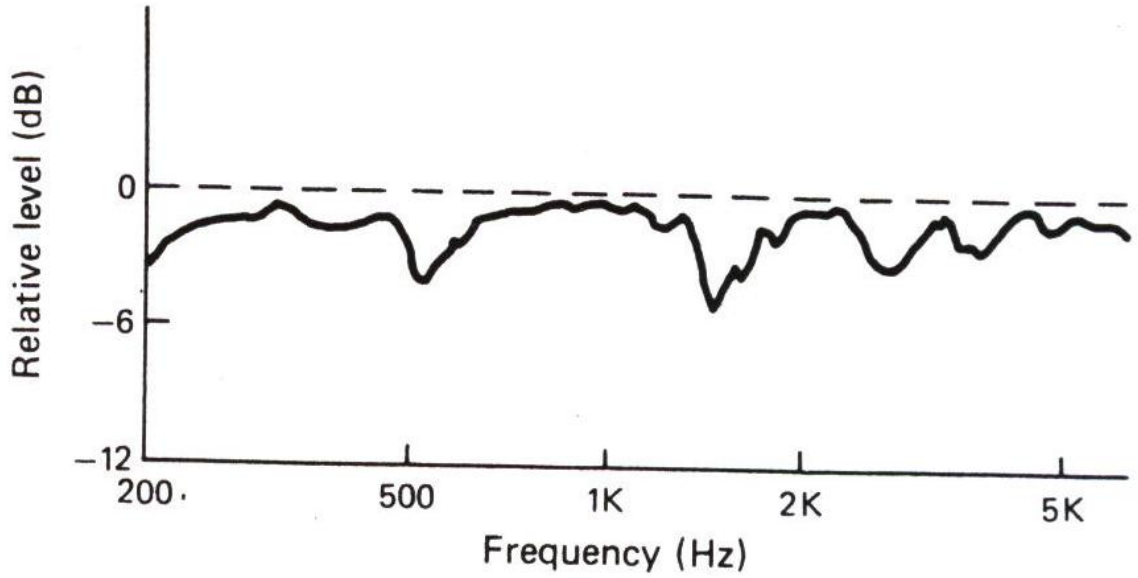
Directivity Pattern	Directivity factor Q_M	Directivity factor 10 log Q_M	Distance factor	Equation for directivity $F(\varphi)$
		dB		
 Omnidirectional	1	0	1	1
 Bidirectional	3	4,8	1,73	$\cos \varphi$
 Cardioid	3	4,8	1,73	$\frac{1}{2}(1+3\cos\varphi)$
 Hypercardioid	4	6,0	2,00	$\frac{1}{4}(1+3\cos\varphi)$
 Supercardioid	3,75	5,7	1,93	$37+36\cos\varphi$
 2d-order bidirectional	5	7,0	2,24	$\cos^2\varphi$
 2d-order cardioid	7,5	8,8	2,74	$(1+\cos\varphi)\cos\varphi$
 2d-order hypercardioid	8	9,0	2,83	$(6+\cos\varphi)\cos\varphi$


DOUBLE PATH USING LECTERN


HOLDING SCRIPT ALONGSIDE MICROPHONE


Direct
Reflected

(A)


Relative level (dB)
0
−6
−12
200
500
1K
2K
5K
Frequency (Hz)

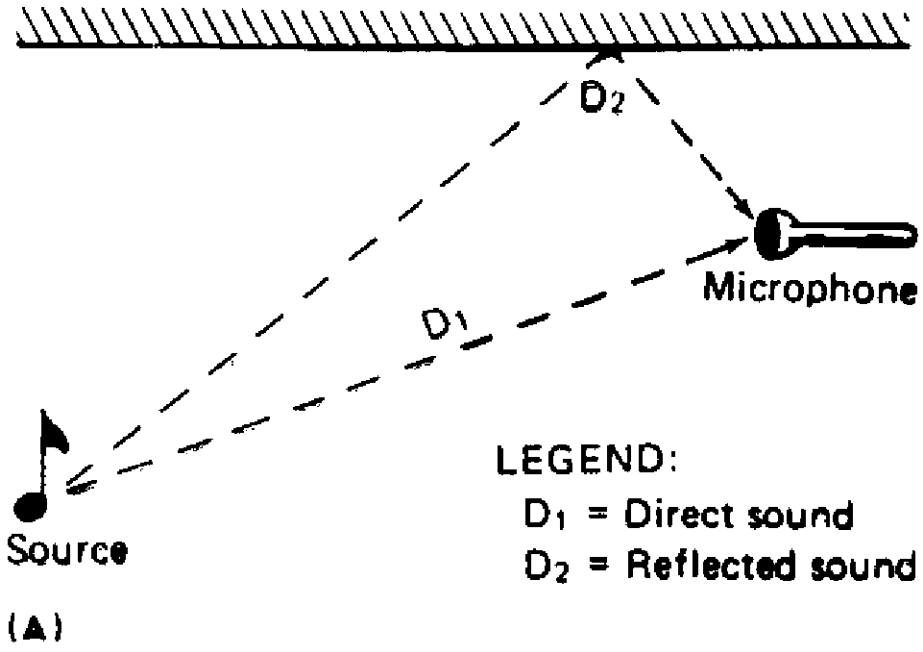
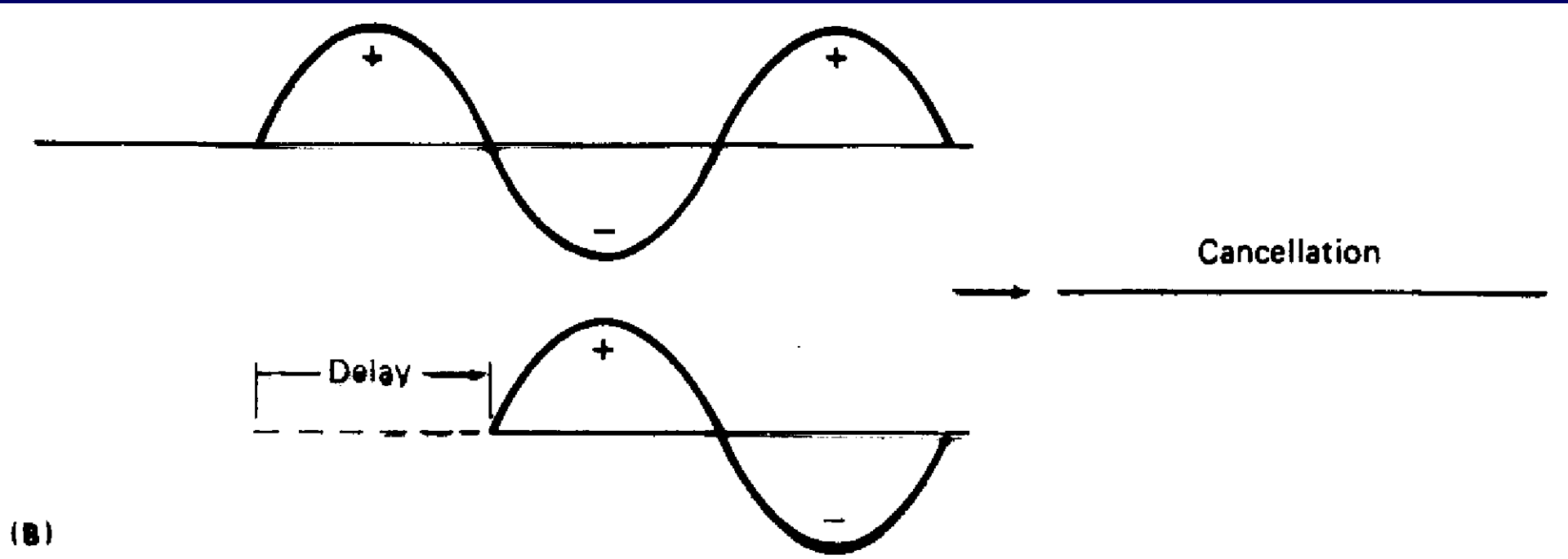
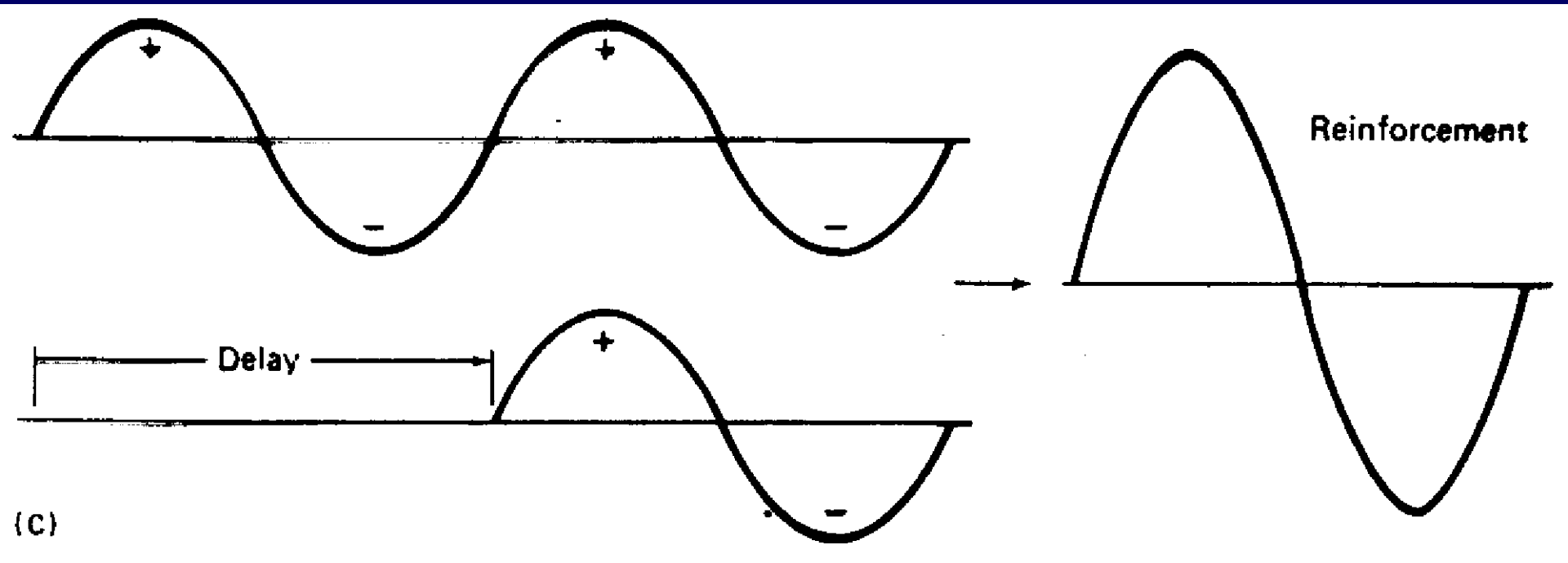
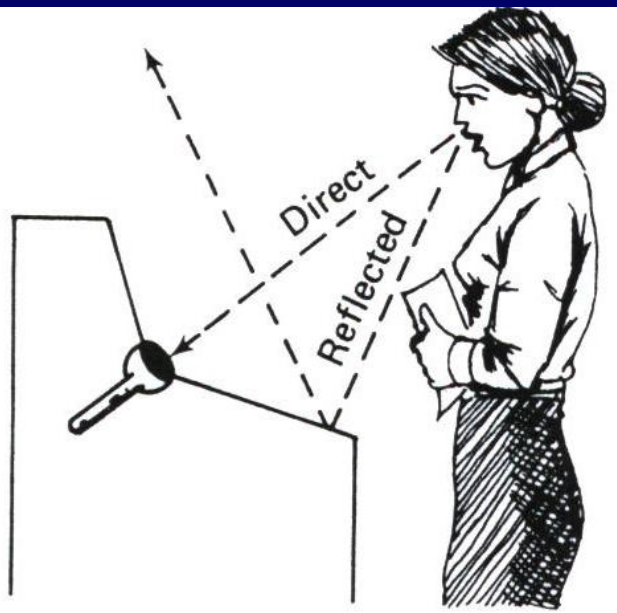


Figure 8-1. Direct and reflected waves reaching a microphone **(A)**, and examples of destructive **(B)** and constructive **(C)** interference.

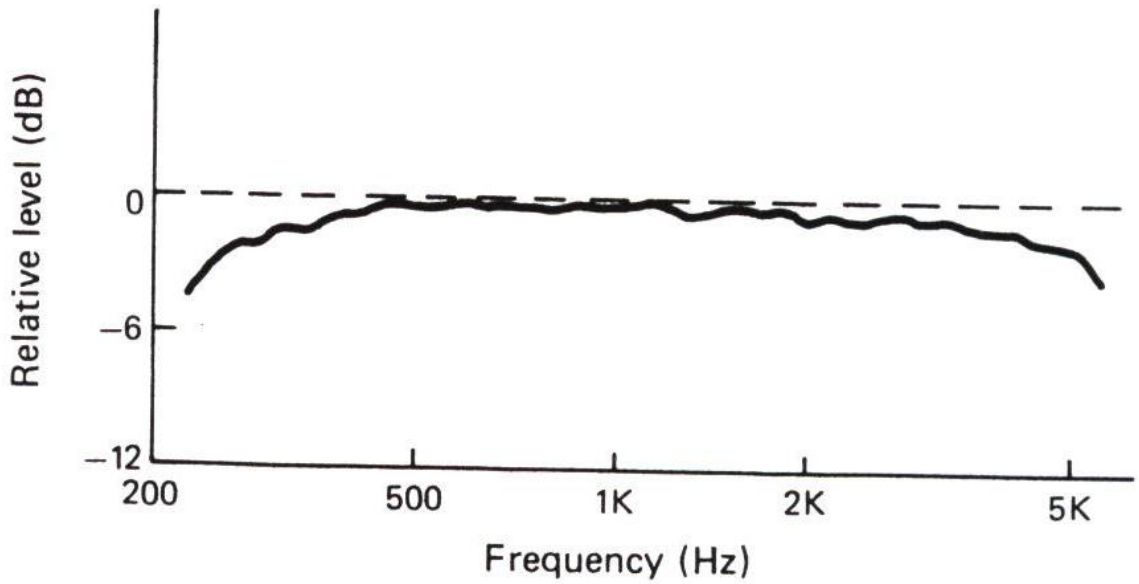


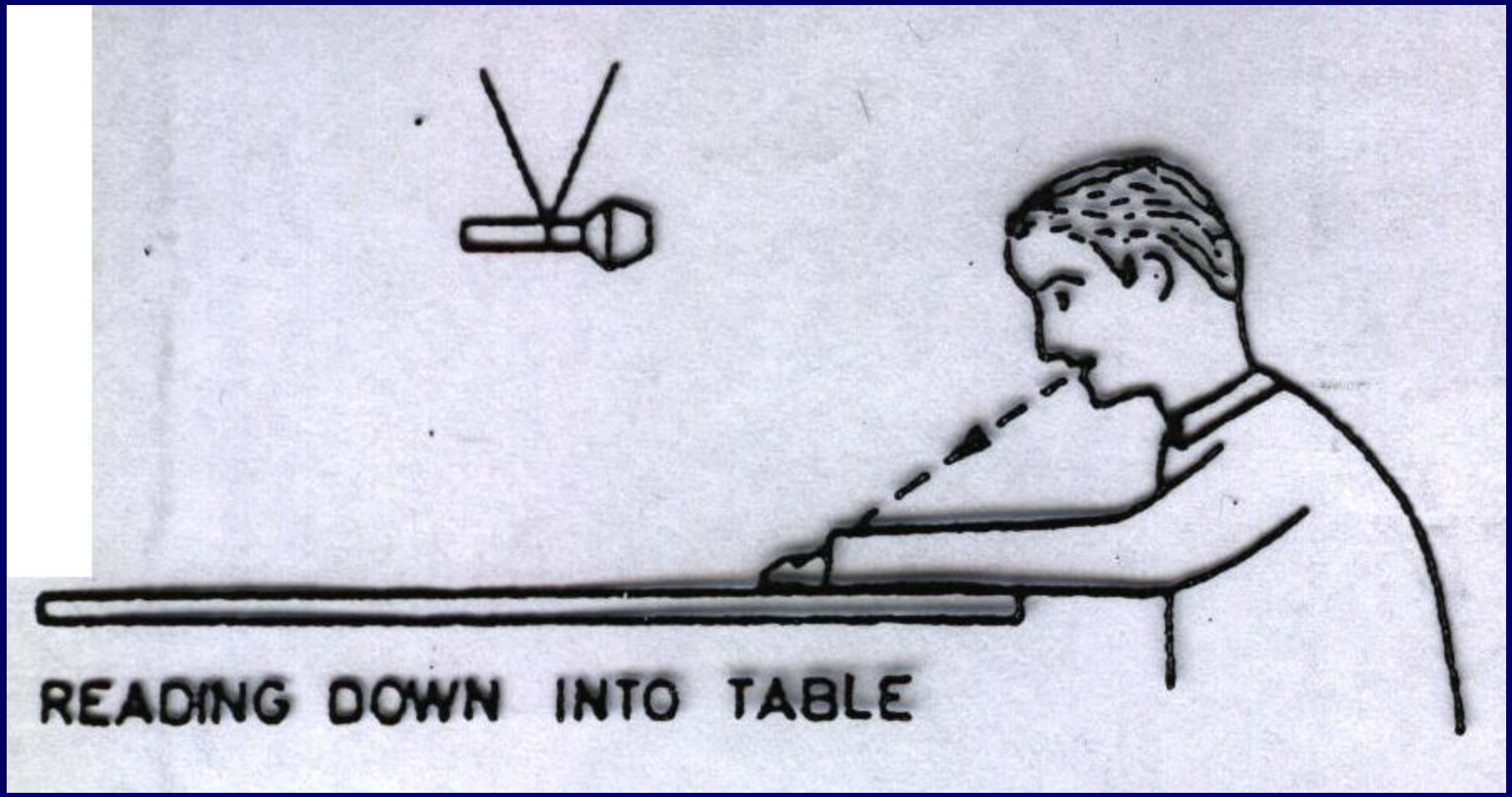
(B)


+
+
−
−
Delay
+
−
Reinforcement
(C)


Direct
Reflected

(B)


Relative level (dB)
0
−6
−12
200
500
1K
2K
5K
Frequency (Hz)


READING DOWN INTO TABLE

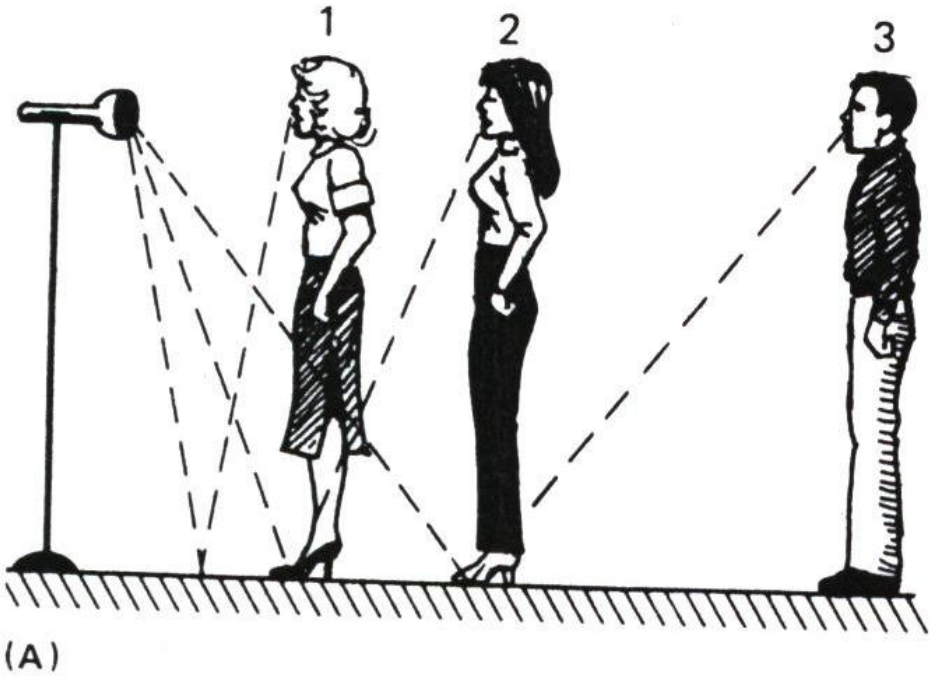
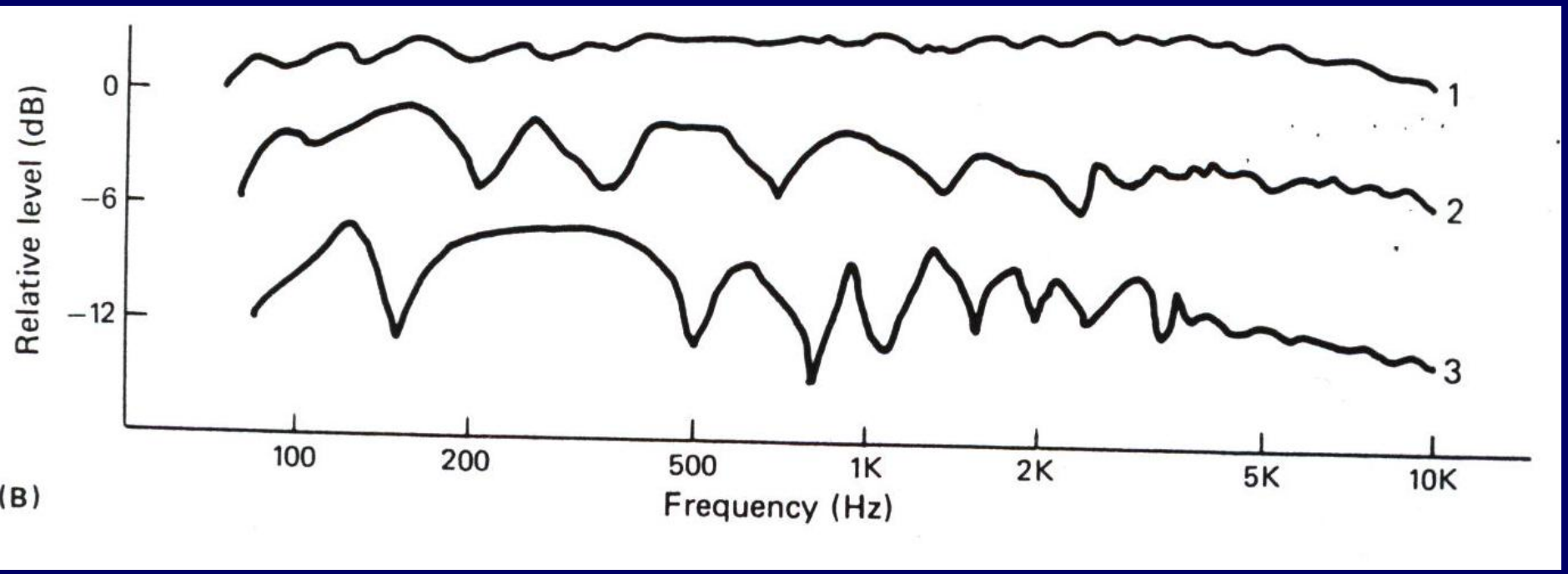
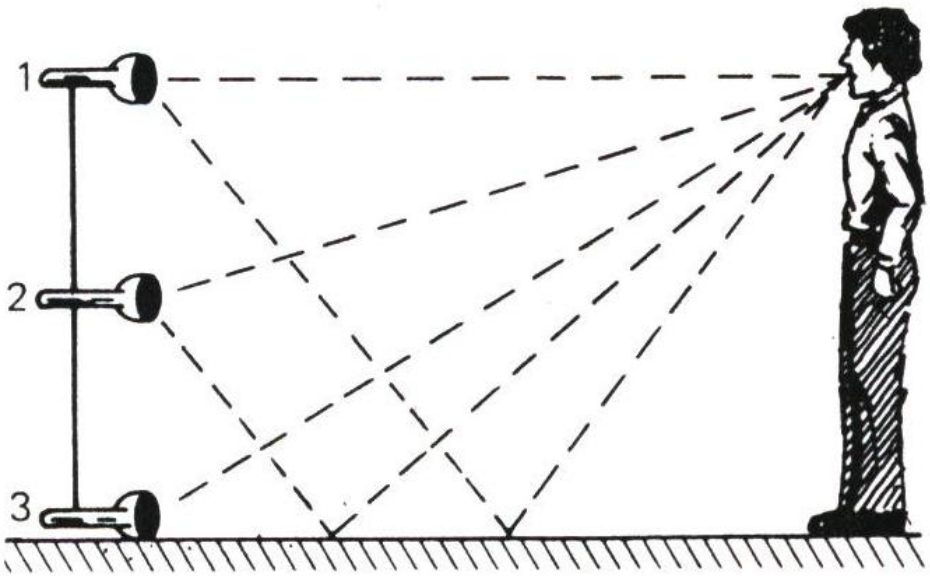
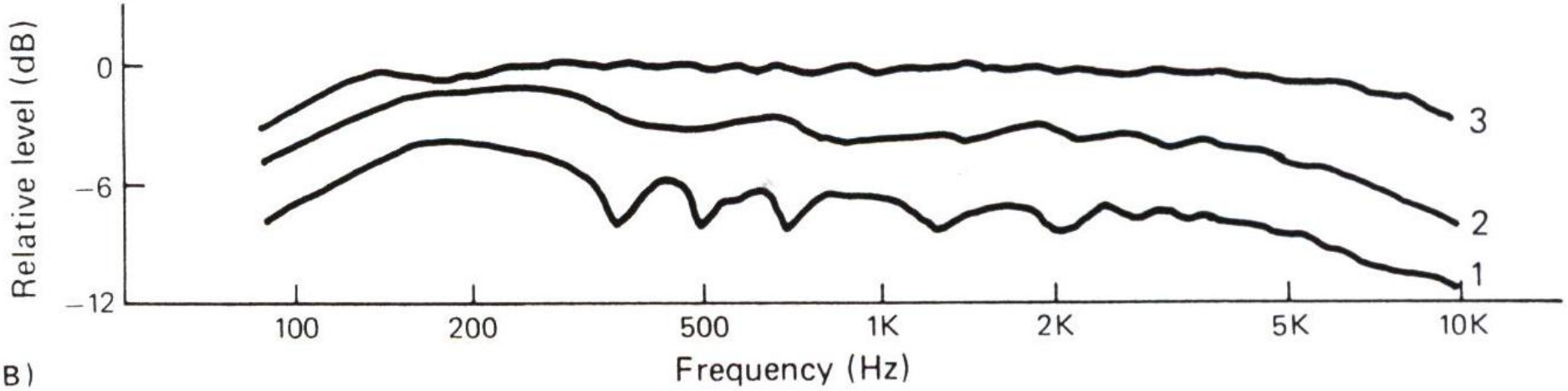


Figure 8-5. Floor stand microphone interference problems. As the working distance increases **(A),** the frequency response deteriorates **(B),** due to comb filter effects.


Relative level (dB)
0
−6
−12
1
2
3
100
200
500
1K
2K
5K
10K
Frequency (Hz)
(B)

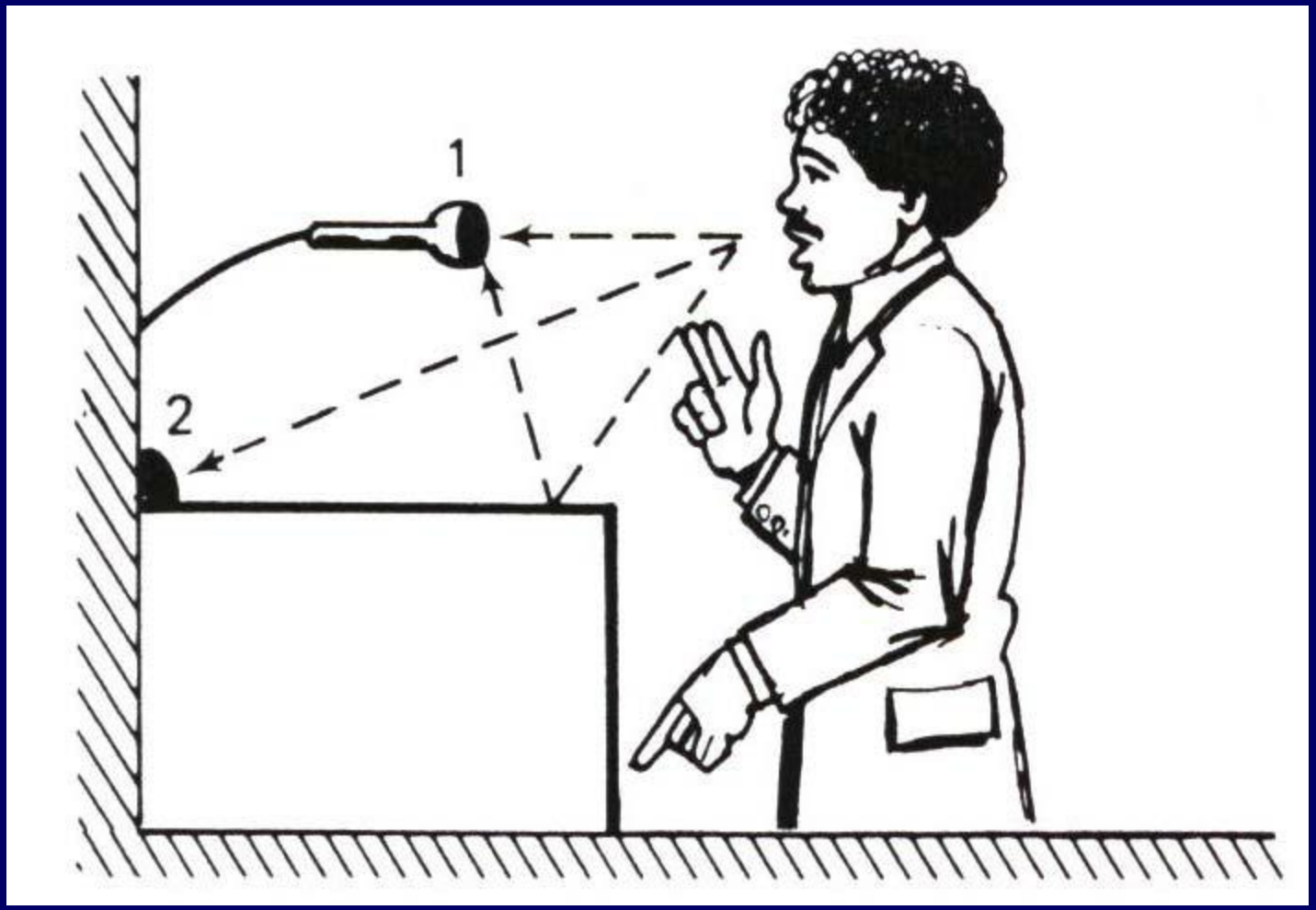


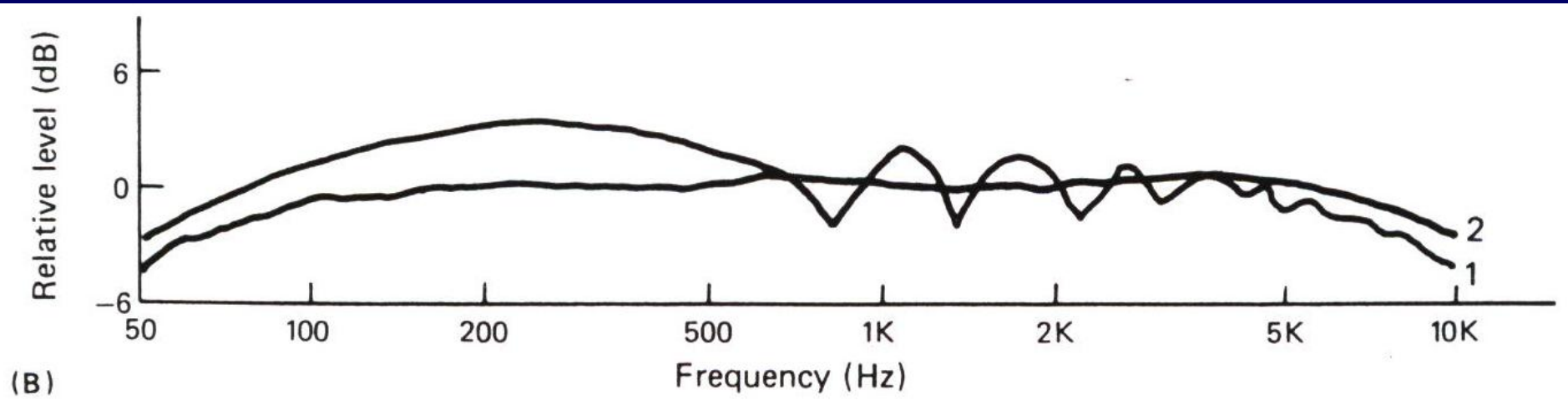
(A)



(B)

Figure 8-6. Floor stand microphone interference problems. As the microphone height decreases, the frequency response improves **(B),** as less-and-less reflected sound reaches the microphone.


1
2


Relative level (dB)
6
0
−6
50
100
200
500
1K
2K
5K
10K
Frequency (Hz)
2
1

(B)

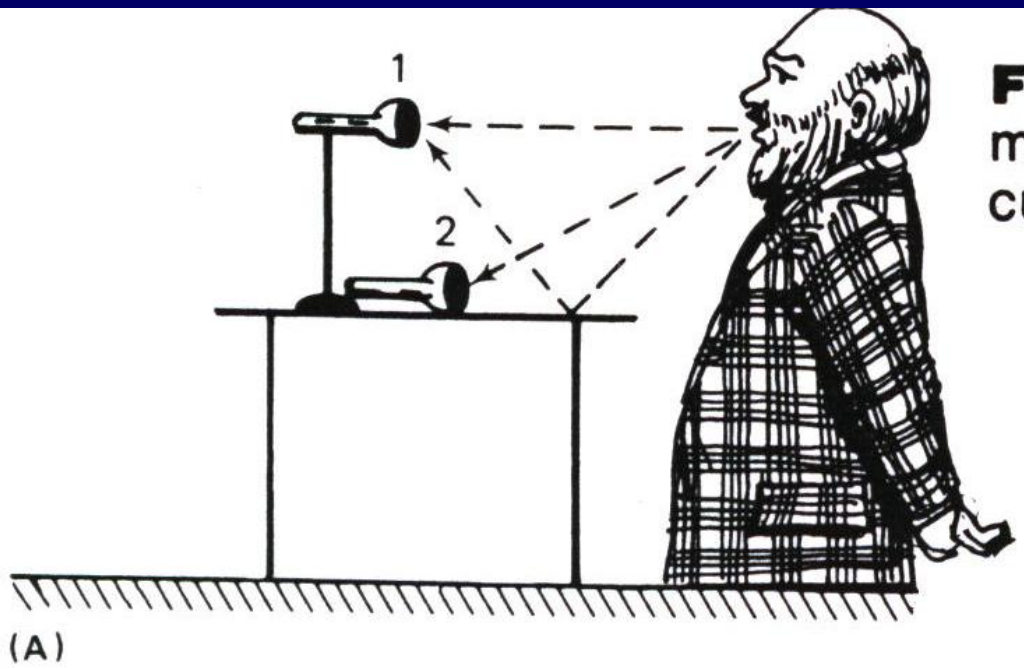
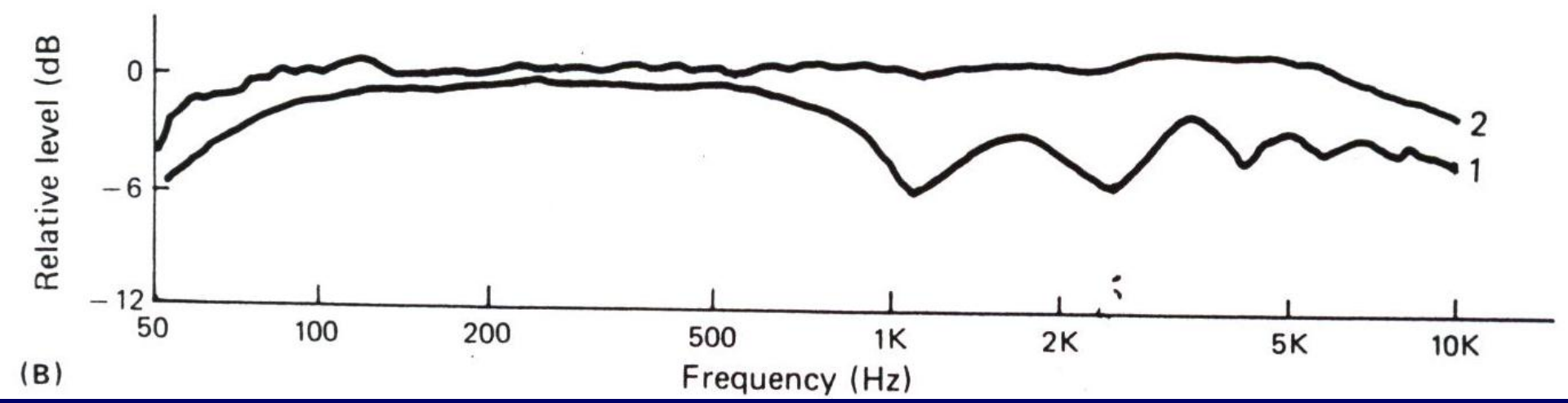
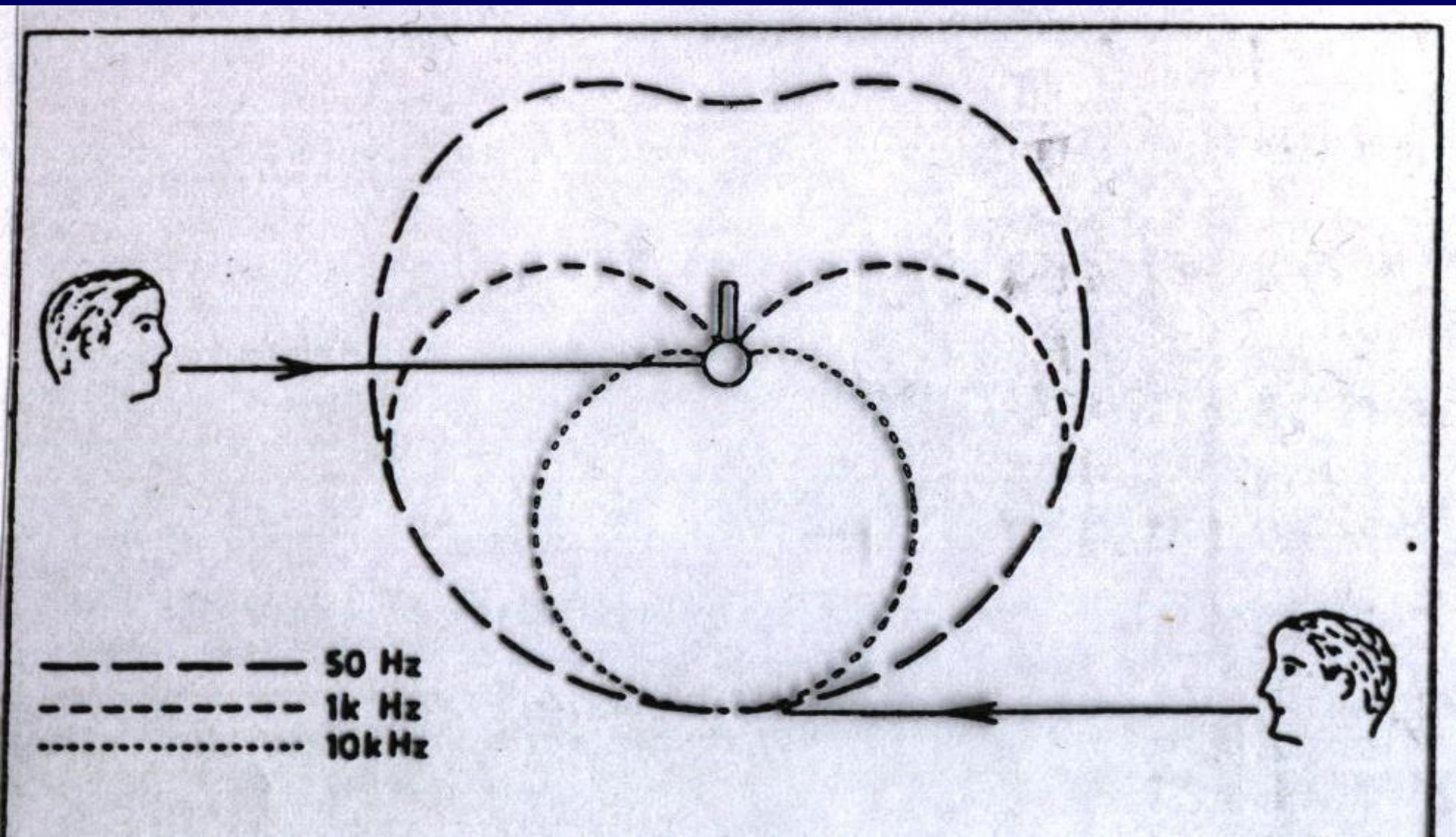
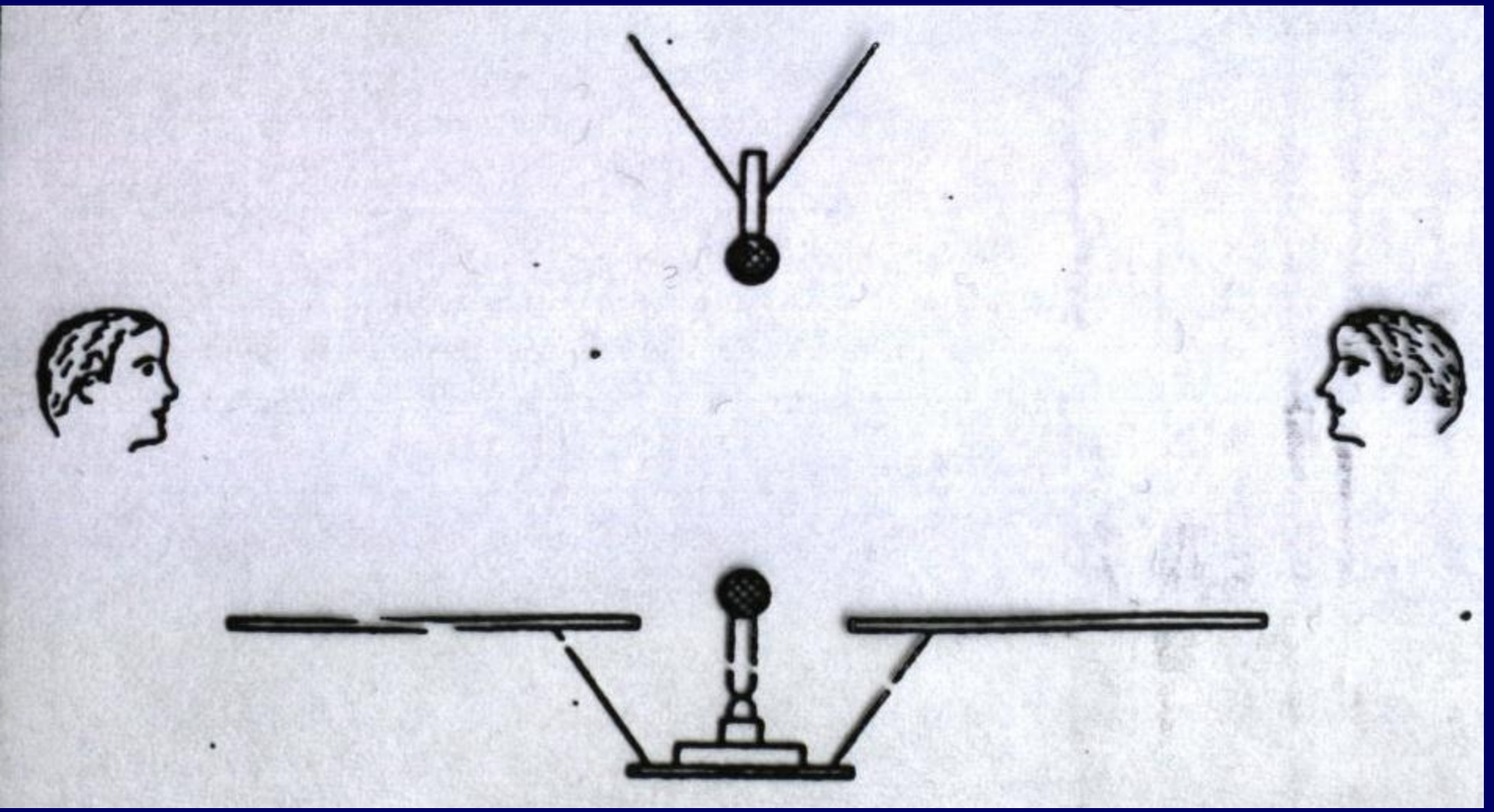


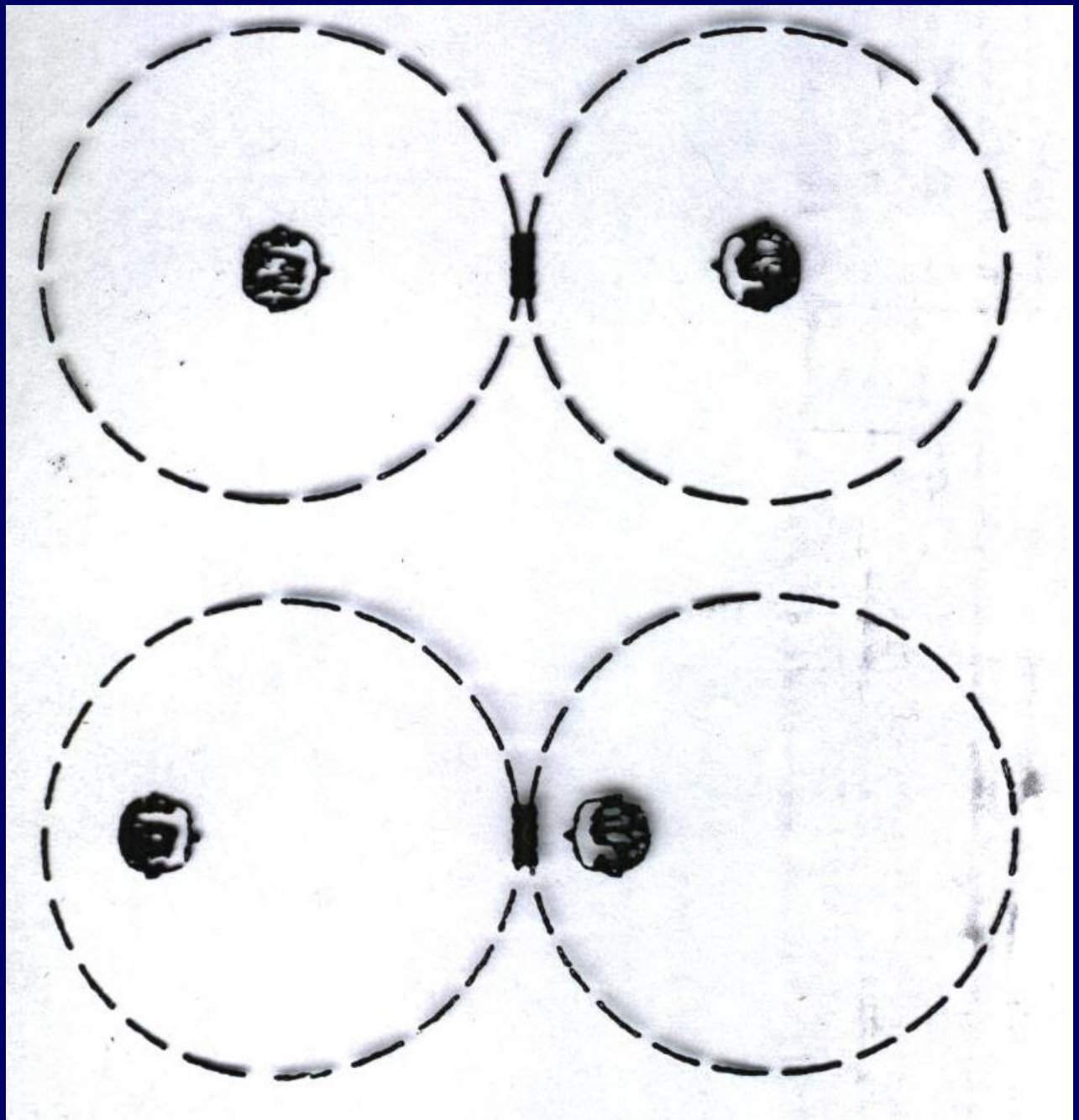
Figure 8-8. Desk microphone placements **(A)**, with resultant response curves **(B)**.


Relative level (dB
0
−6
−12
50
100
200
500
1K
2K
5K
10K
Frequency (Hz)
2
1
(B)

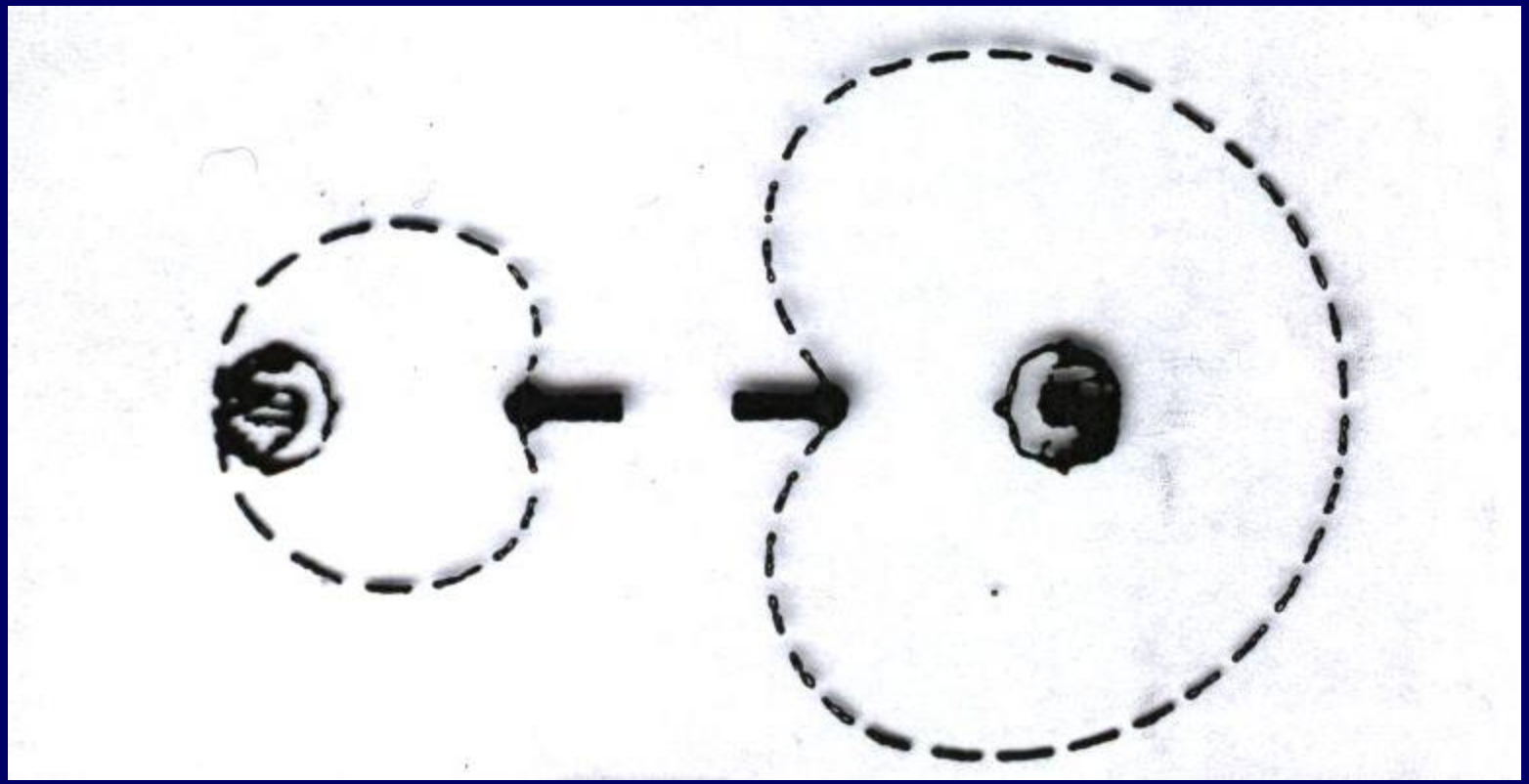

50 Hz
1k Hz
10k Hz

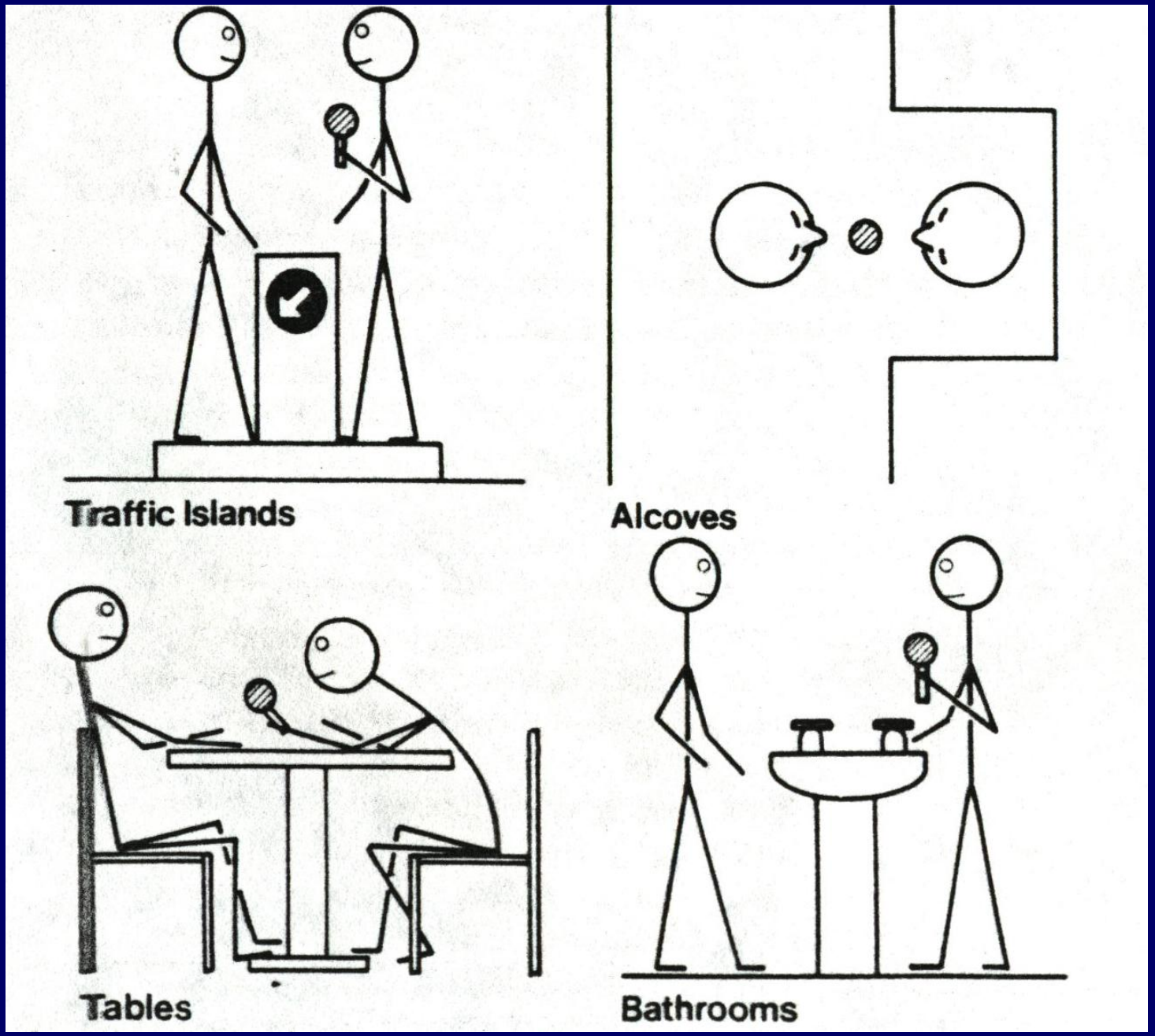
Since the frequency response of a cardioid microphone varies with the angle of incidence (top) it is better to place the microphone well above or below eye level

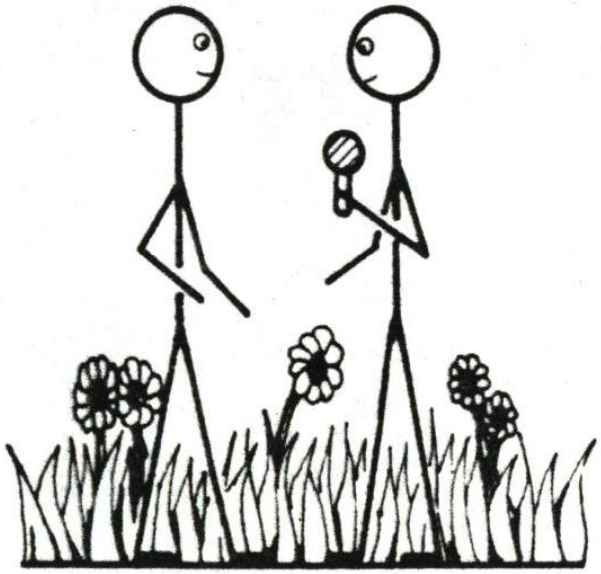




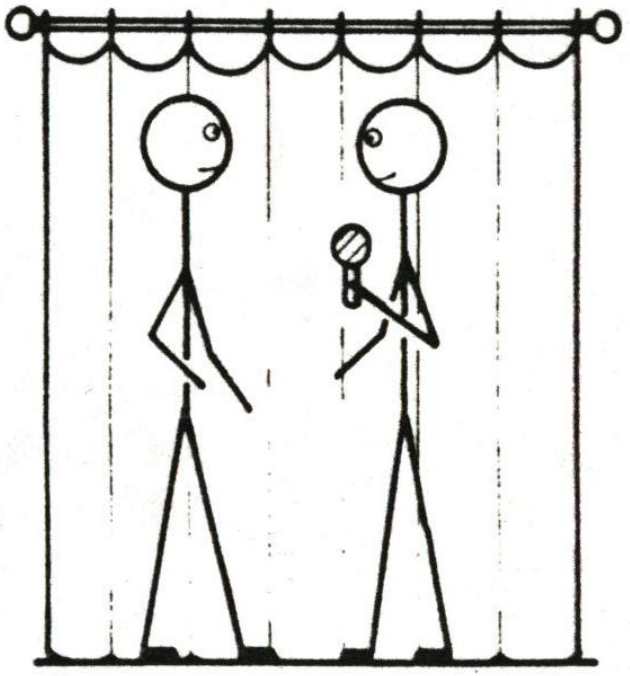
Two evenly balanced voices can use a single bi-directional microphone (top). If one voice is louder, the distances can be adjusted (centre) or separate cardioid microphones used bottom)



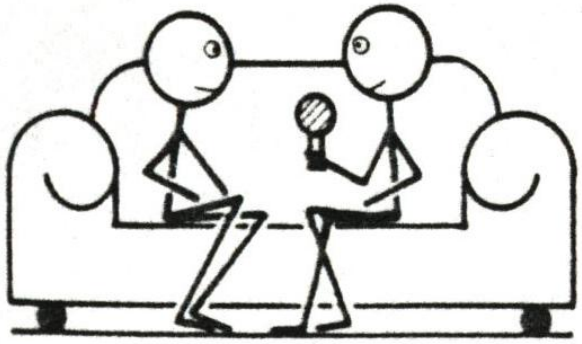

Traffic Islands
Alcoves
Tables
Bathrooms



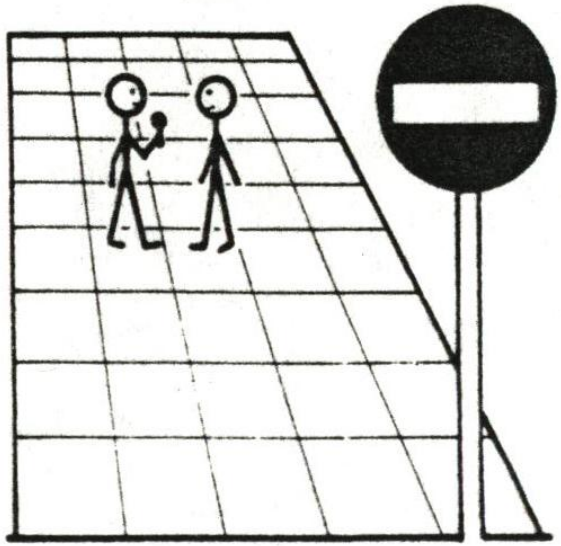
Gardens



Curtains



Settees



Pedestrian Precincts

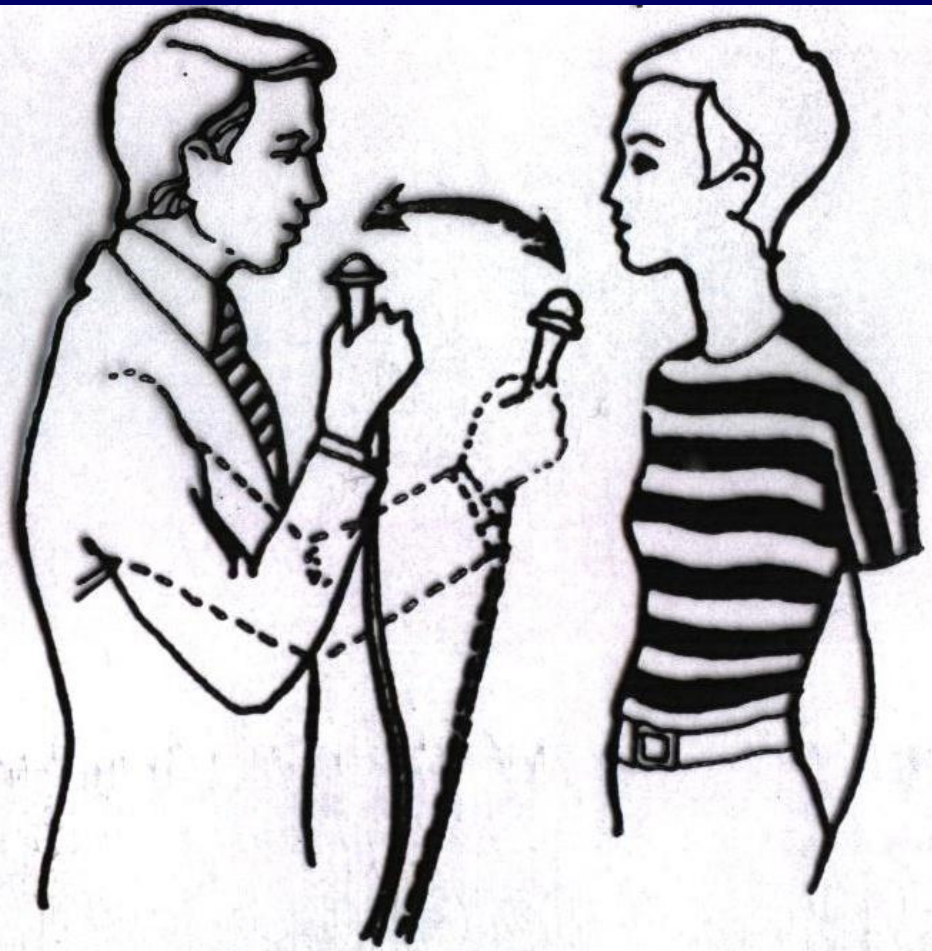
INTERVIEWING TECHNIQUES USING DIRECTIONAL MICROPHONE (e.g. cardioid).

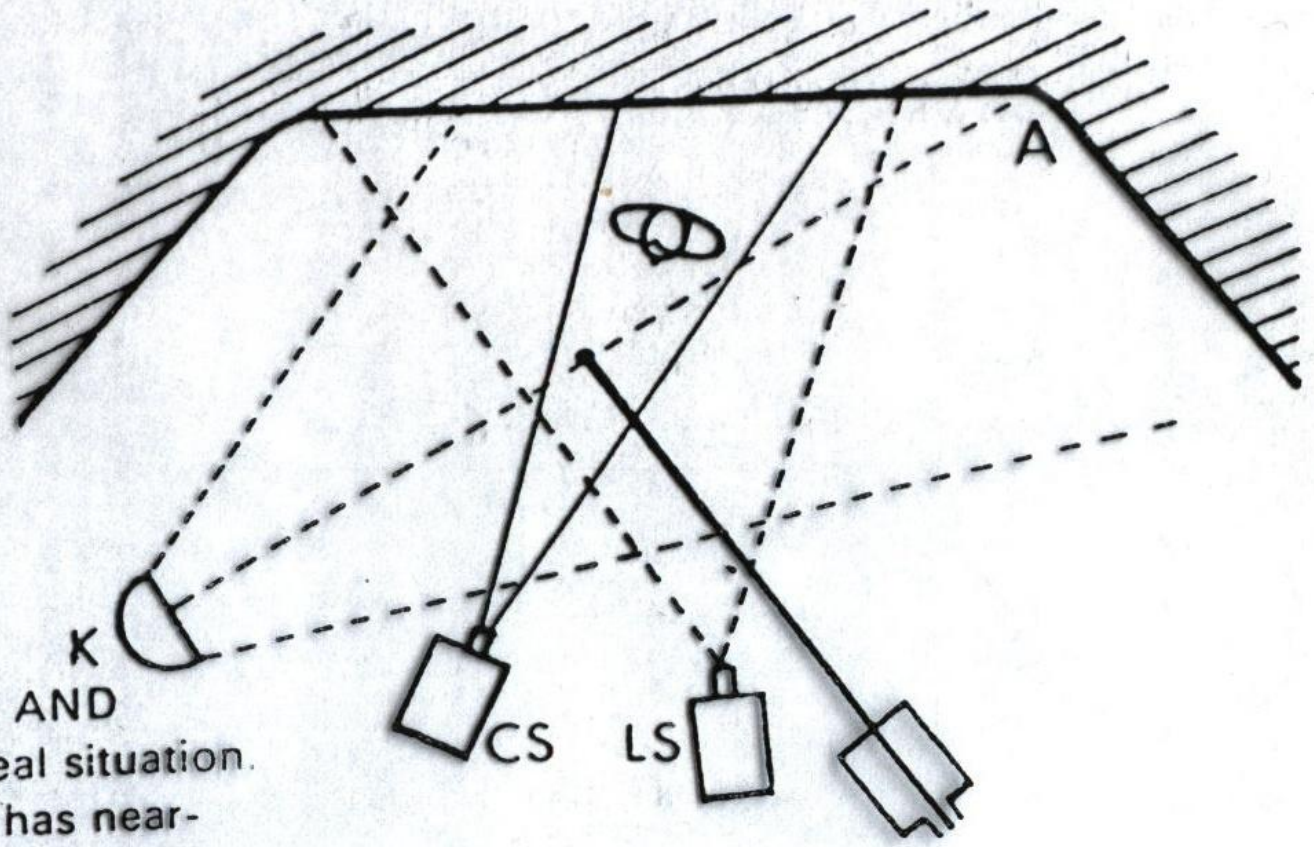
Position 1: **Microphone at waist level: sound quality poor to fair In television, this position may sometimes be used in order to clear the picture, but only if background noises are** low, and the acoustic dead.

Position 2: Microphone at shoulder level, static. Sound quality fair to good, provided that both speakers are close together—e.g. standing close and at 90° to each other, or sitting side by side.

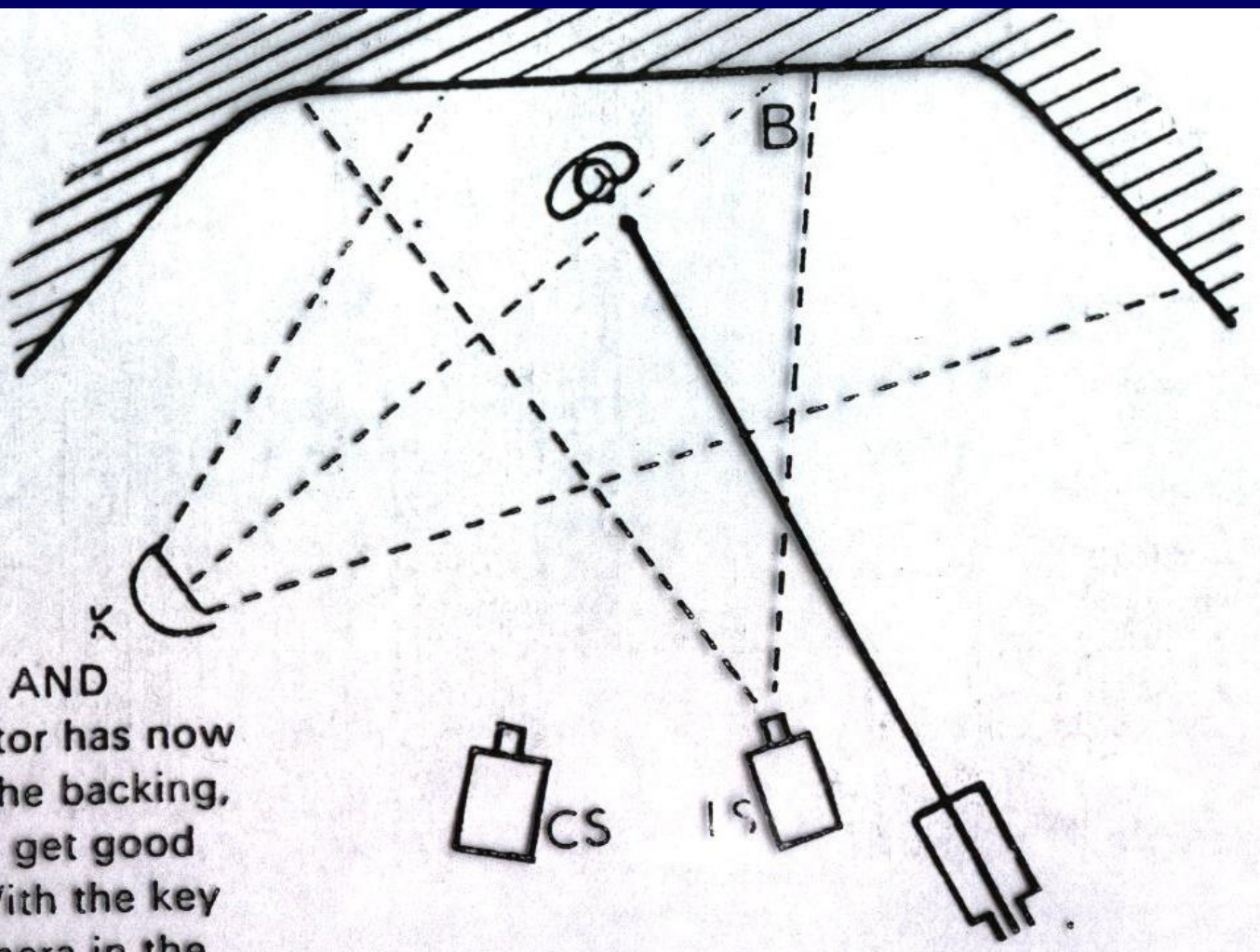
Position 3: Moving the microphone from one person to the other. Sound quality good; but the aggressive use of the microphone may either distract the interviewee or allow him to move closer in to it than is desirable.

An omnidirectional microphone would need to be close; it would give very poor sound in the waist position. Also consider using a gun or neck microphone when out of doors, or a neck or boom microphone when in the studio or an indoor location.

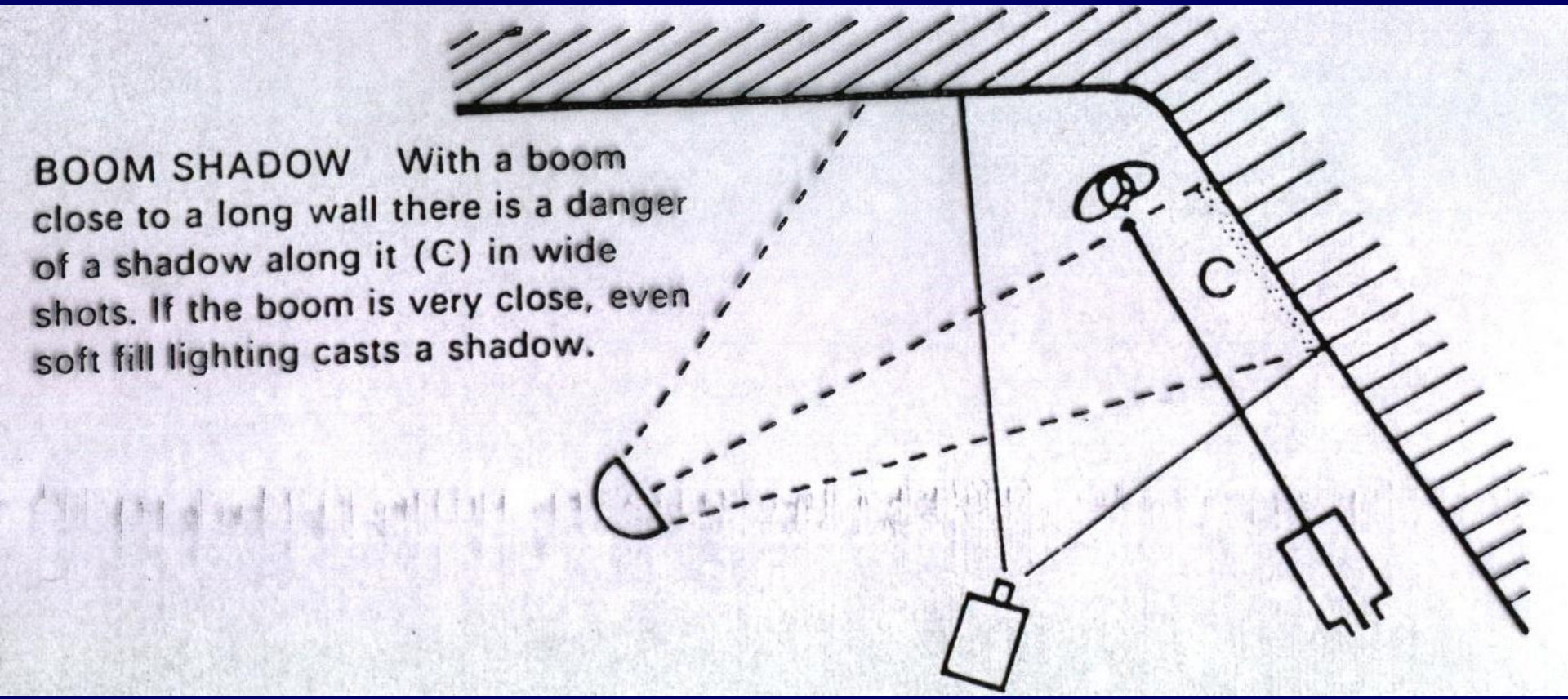




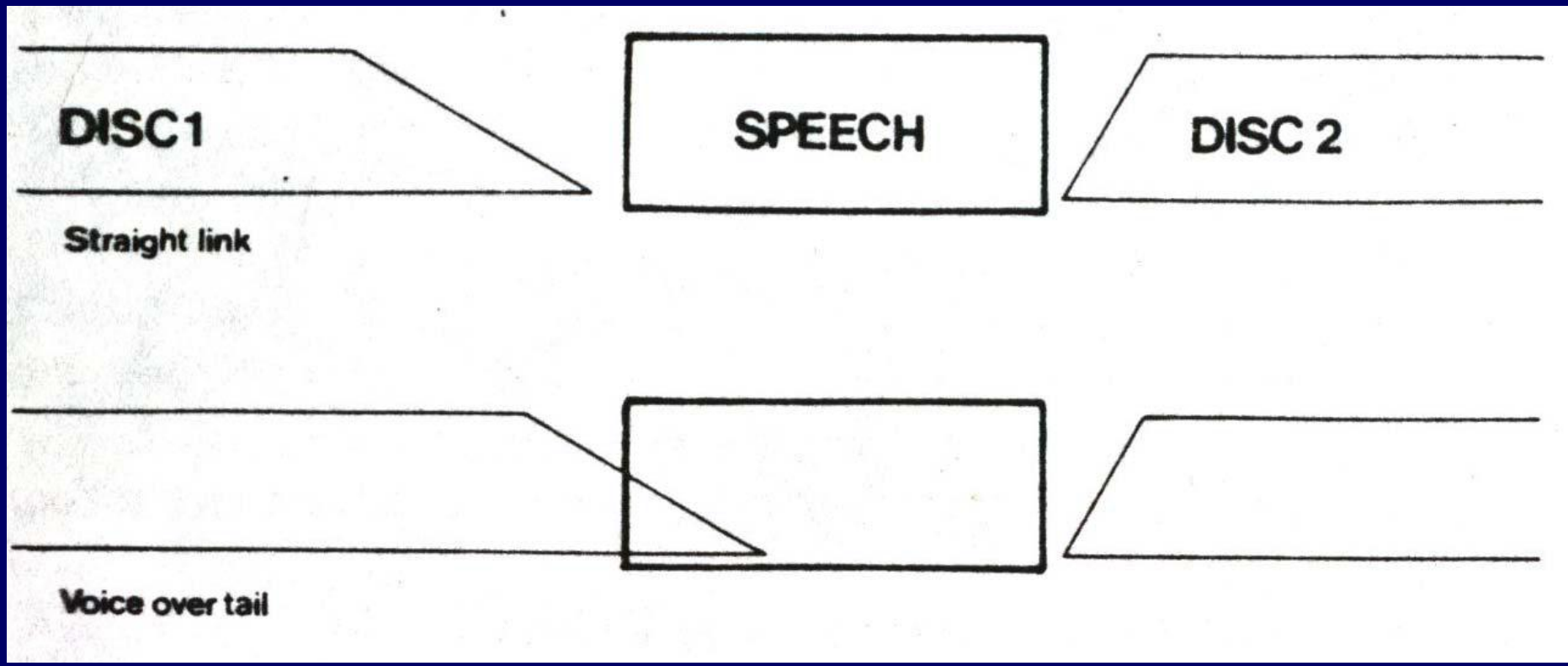
LIGHTING, CAMERAS AND MICROPHONE: the ideal situation. The close-shot camera has near-frontal key lighting (from K). The microphone shadow is thrown on to the backing at point A where it appears in neither picture.

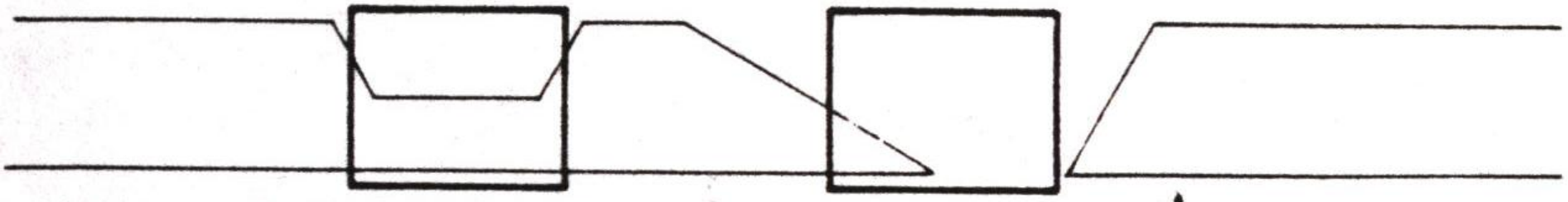


LIGHTING, CAMERAS AND MICROPHONE: the actor has now moved 18 in closer to the backing, and the microphone, to get good sound, has followed. With the key light and long-shot camera in the same positions there is now a shadow visible at B in the long shot.

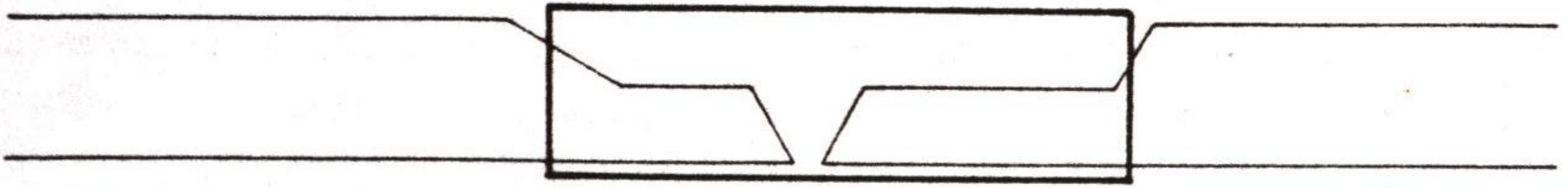


BOOM SHADOW With a boom close to a long wall there is a danger of a shadow along it (C) in wide shots. If the boom is very close, even soft fill lighting casts a shadow.

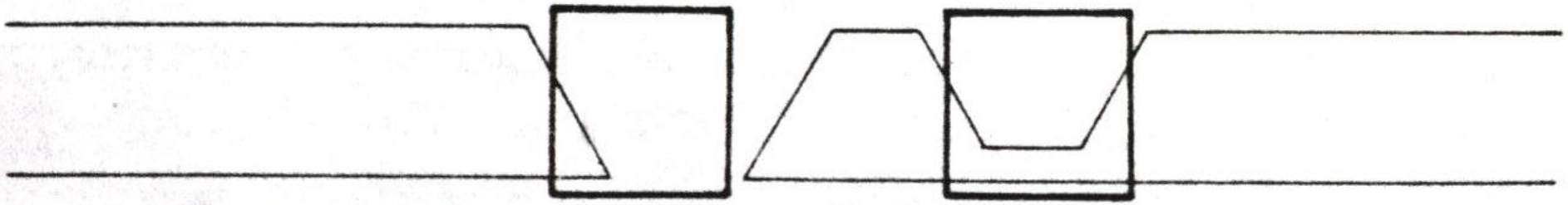

DISC1
SPEECH
DISC 2
Straight link
Voice over tail



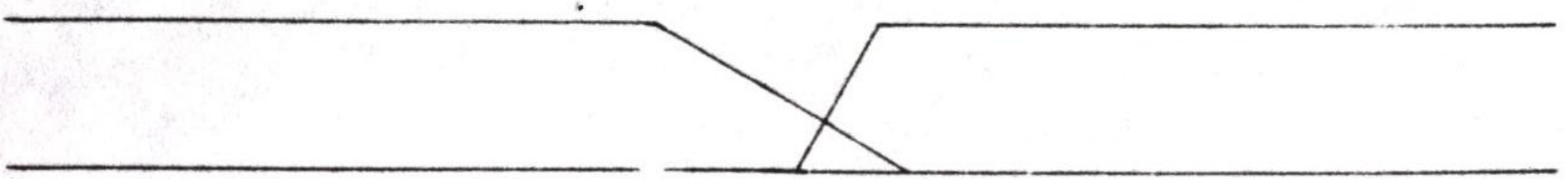
Voice over tail with reprise (ideal for early fade out)



Segue under speech



Voice over tail - establish intro - voice over to vocal entry



Straight segue

Podkład muzyczny:

- narastanie/wyciszanie (fade-in/fade-out) muzyki łagodne (stopniowe); we frazie
- nie stosować muzyki z wokalem
- nie stosować bardzo znanych motywów muzycznych
- nie używać motywów – symboli (np. hymnów państwowych)

Słowo – efekt wejścia przy otwartym tłumiku

Formy realizatorskie

- sonda uliczna (np. odpowiedź na jedno pytanie, dynamika wypowiedzi, odpowiadający,…)
- wywiad (trójkąt zaufania!, rodzaje: informacyjny, interpretacyjny, emocjonalny; technika zadawania pytań, podsumowanie wywiadu, powtórny wywiad)

Formy realizatorskie

- reportaż (realizacja wokół problemu, faktu, widoczny autor reportażu, możliwy komentarz, identyfikacja stron problemu, podkład dźwiękowy – tło akustyczne,...)

- Definicja reportażu

  http://www.sciaga.pl/tekst/116276-117-reportaz-radiowy