

# Launch of online refreshers

A series of short online refreshers based on extracts from videos created for the IOA Diploma in Acoustics and Noise Control are available now in the videos section of the IOA website.

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**T**hese refreshers could be useful to members wishing to revise their knowledge of fundamental concepts and methods or those wanting to update their knowledge in various areas of acoustics and vibration. These online refreshers do not involve any assessment (self or otherwise).

## Human Response to Noise

This refresher has four videos:

- the ear and the hearing mechanism;
- health surveillance and hearing protection;
- loudness, calculation of loudness, speech intelligibility, noise rating and noise criteria; and
- speech interference level, speech transmission index, vocal effort, and privacy.

## Human Response to Vibration

This refresher comprises three videos:

- effects and assessment of vibration introducing the various vibration indices;
- vibrations from transport, industrial, construction and quarrying sources, and building vibrations; and
- vibration effects continued and aspects of measuring and controlling vibrations.

## Vibration

This refresher has two videos relating to:

- vibration fundamentals; and
- building vibrations.



Above: Explaining radiation from finite sources

**Another Barrier Example**  
Estimate the reduction due to a barrier for a source with the following octave band spectrum:

Frequency Hz	$L_p$	Wavelength m	$H$	10log(1000/H)	Level without barrier dB	Level with barrier dB
63	74	5.44	0.130864	7.632	74	66.4
125	79	2.72	0.270728	9.342	79	69.7
150	83	1.36	0.559456	11.920	83	71.5
500	81	0.68	1.11892	14.045	81	67
1000	75	0.34	2.23784	16.790	75	59.2
2000	85	0.17	4.47567	19.662	85	65.5
4000	79	0.085	8.95134	22.881	79	56.4
8000	79	0.043	17.9029	25.576	79	53.5

This slide shows the results of carrying out the same calculation

Above: Working an example barrier calculation



Above: Explaining CRN



Above: Describing the ear and hearing

## Room acoustics

There are four videos for this refresher:

- sound absorption;
- sound absorbers and sound absorption measurement;
- standing waves and room modes; and
- room acoustics calculations and aspects of design for good room acoustics including auditorium acoustics.

## Sound Insulation

There are seven videos for this refresher:

- principles of sound transmission
- factors that influence sound insulation and ways of improving sound insulation
- airborne and impact sound insulation measurement
- sound insulation rating
- sound insulation in practice covers topics such as robust details, and guidance on relevant considerations in schools and hospitals
- control of building vibrations; and
- noise from building services.

## Sound propagation outdoors

This refresher looks at:

- wavefront spreading;
- radiation from finite planar sources and building façades;
- reflections from vertical surfaces and the ground;
- atmospheric refraction and turbulence;
- transmission around barriers and through vegetation; and
- prediction schemes.

## Transport Noise

This refresher offers:

- two videos on road traffic noise;
- one video on railway noise; and
- one on aircraft noise. 