

# The Wind Turbine “Noise” Problem - Is it Infrasound, Low Frequency Noise, or Amplitude Modulation?

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# It's hard to admit to serious errors...(6)

- Asbestos
- Radium Girls
- Tobacco
- Thalidomide
- Primodos
- Wind turbines

Infrasound and Low Frequency Noise from wind turbines inflict serious adverse health effects on a significant minority of wind farm neighbours.

Dr Leventhall:

*"I can state quite categorically that there is no significant infrasound from current designs of wind turbines. To say that there is an infrasound problem is one of the hares which objectors to wind farms like to run."*

Dr Yelland:

*"I firmly believe that the primary cause of the more severe symptoms of Wind Turbine Syndrome is the very high levels of infrasound and low frequency noise energy emitted by wind turbines."*

# The Industry's "Enhanced Annoyance" Theory: Dr Leventhall says it's all your own fault

**1. Introduction** Some people become ill in the vicinity of wind turbines and an assumption is that this is due to energy radiating from the turbines to a person. The

Input: audible – electrical - visual

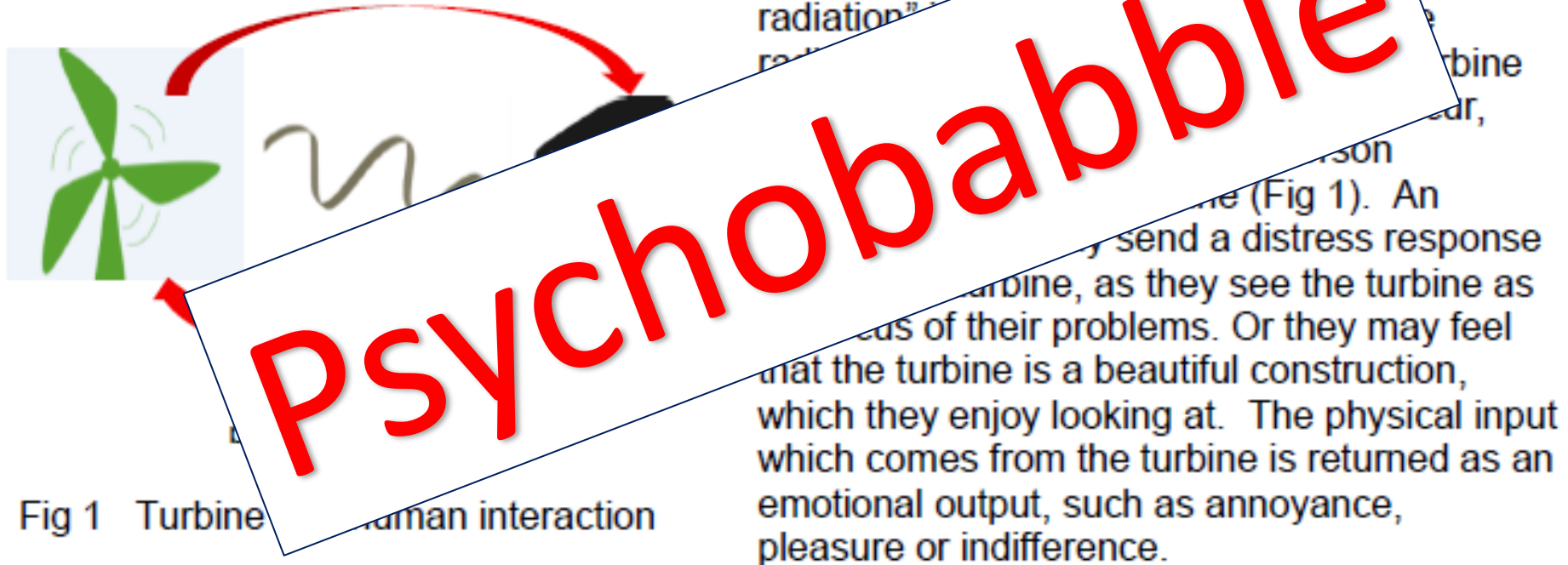


Fig 1 Turbine-human interaction

most common radiation is noise, with electrical fields and visual radiation. The turbine sends a distress response to a person (Fig 1). An annoyance response is sent as they see the turbine as a beautiful construction, which they enjoy looking at. The physical input which comes from the turbine is returned as an emotional output, such as annoyance, pleasure or indifference.

# Aborted Mink Pups in a Freezer

Mink

Sheep

Pigs

Geese

Goats



Whales ?

Bats

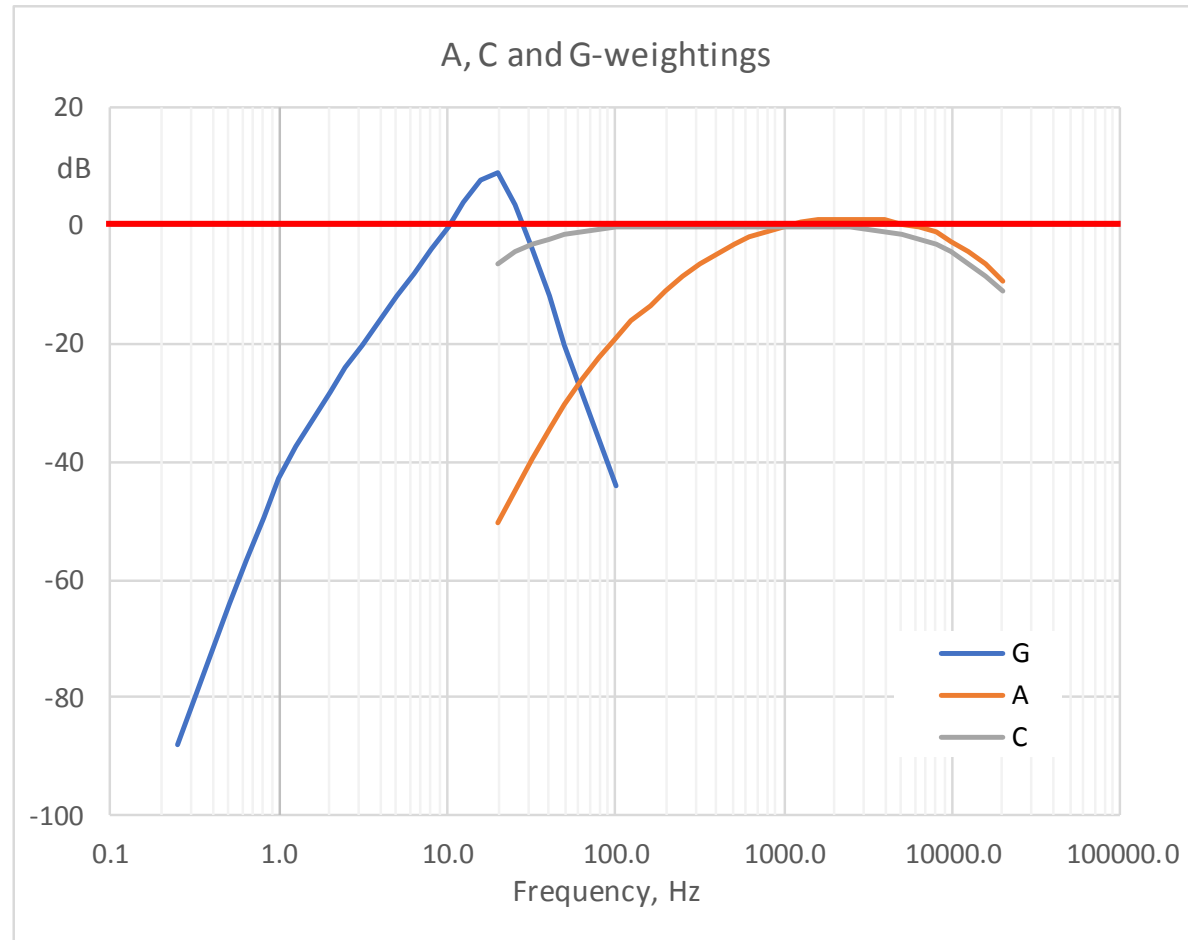
Dogs

Cows

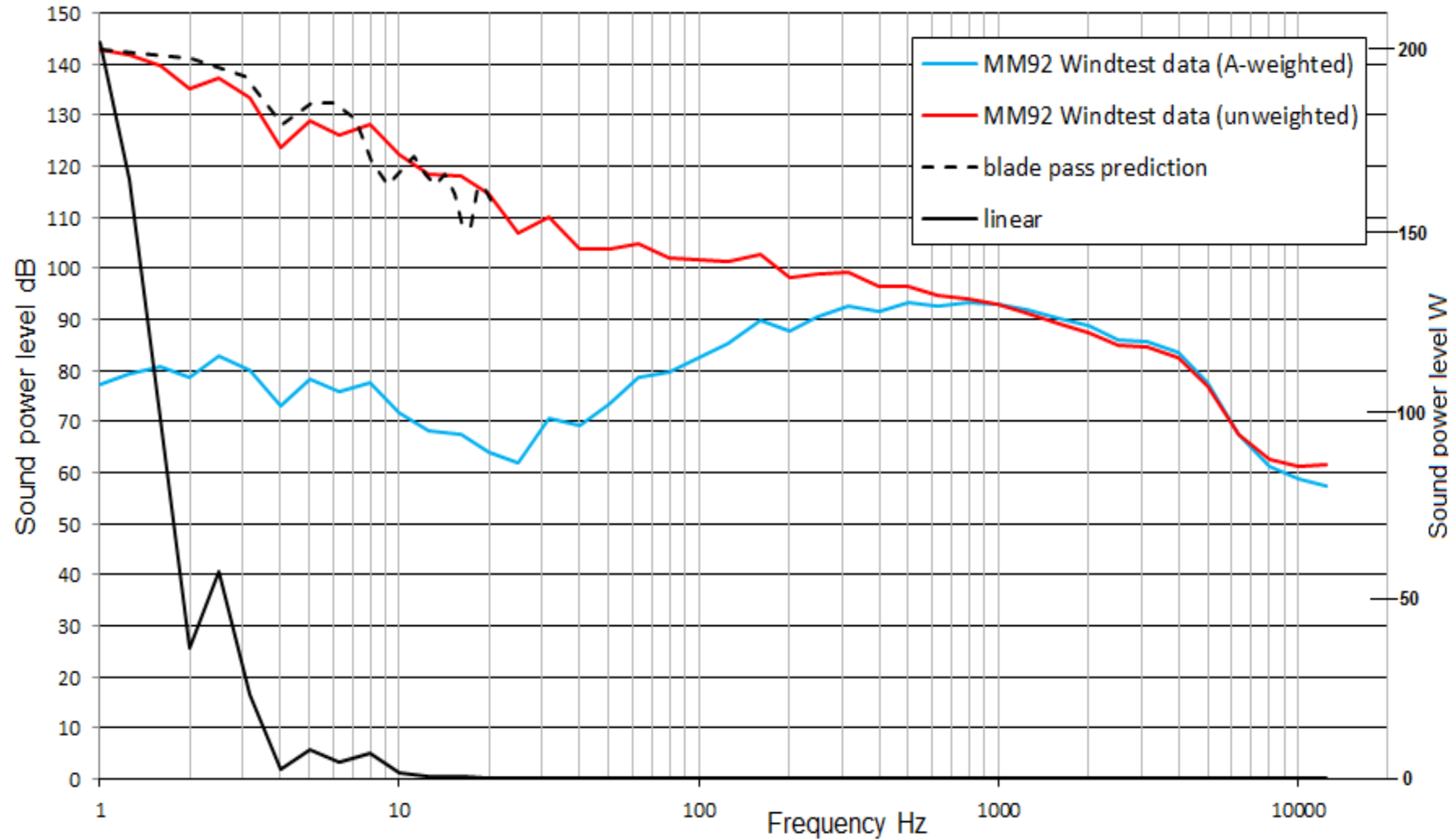
Horses



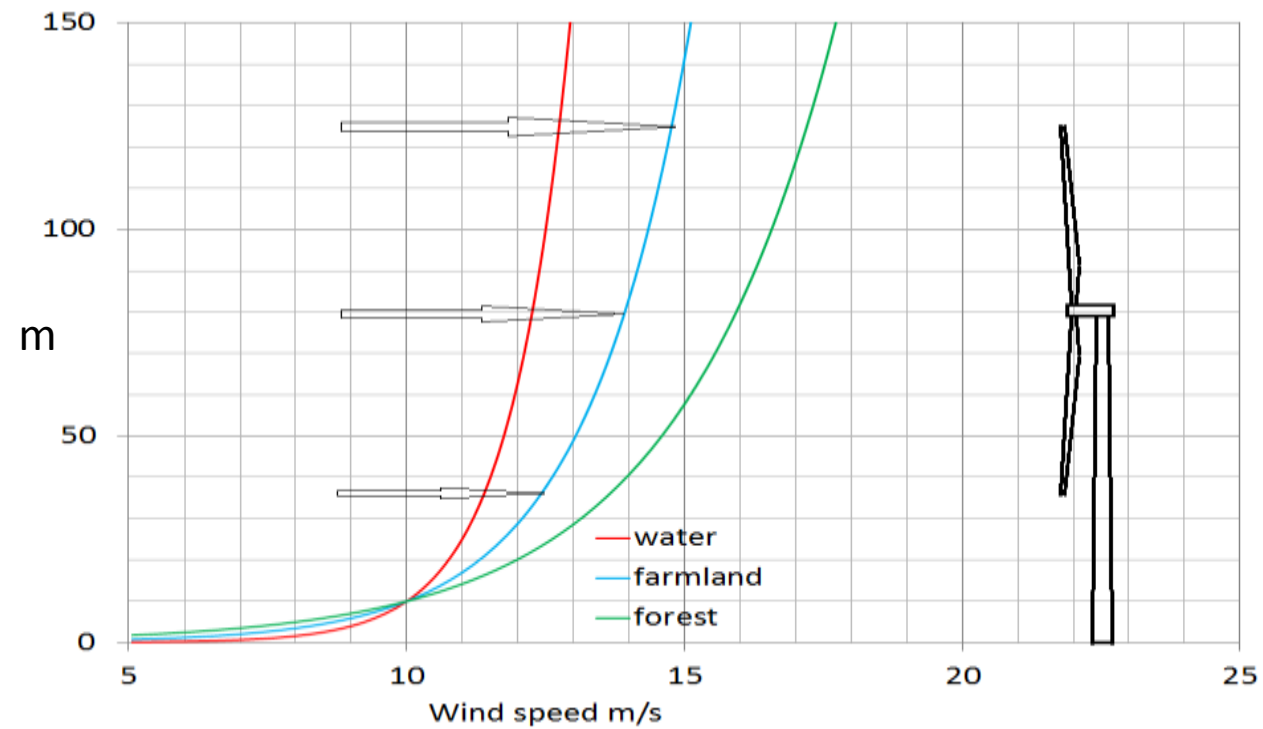
# A-, C-, G- and Z-Weighting



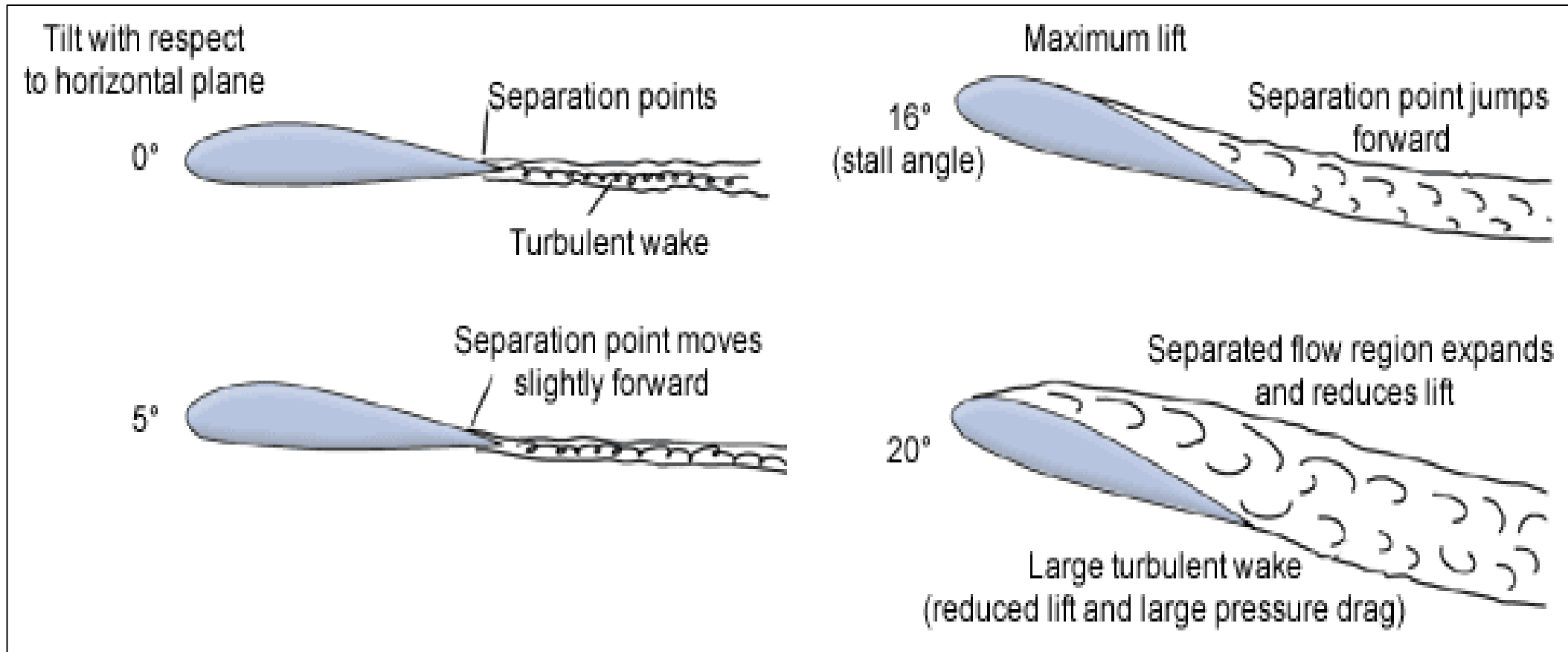
# Senvion MM92 Test Data



# Wind shear



# Aerofoil Attack Angle



Aerofoils at increasing angles of attack (credit: NASA).

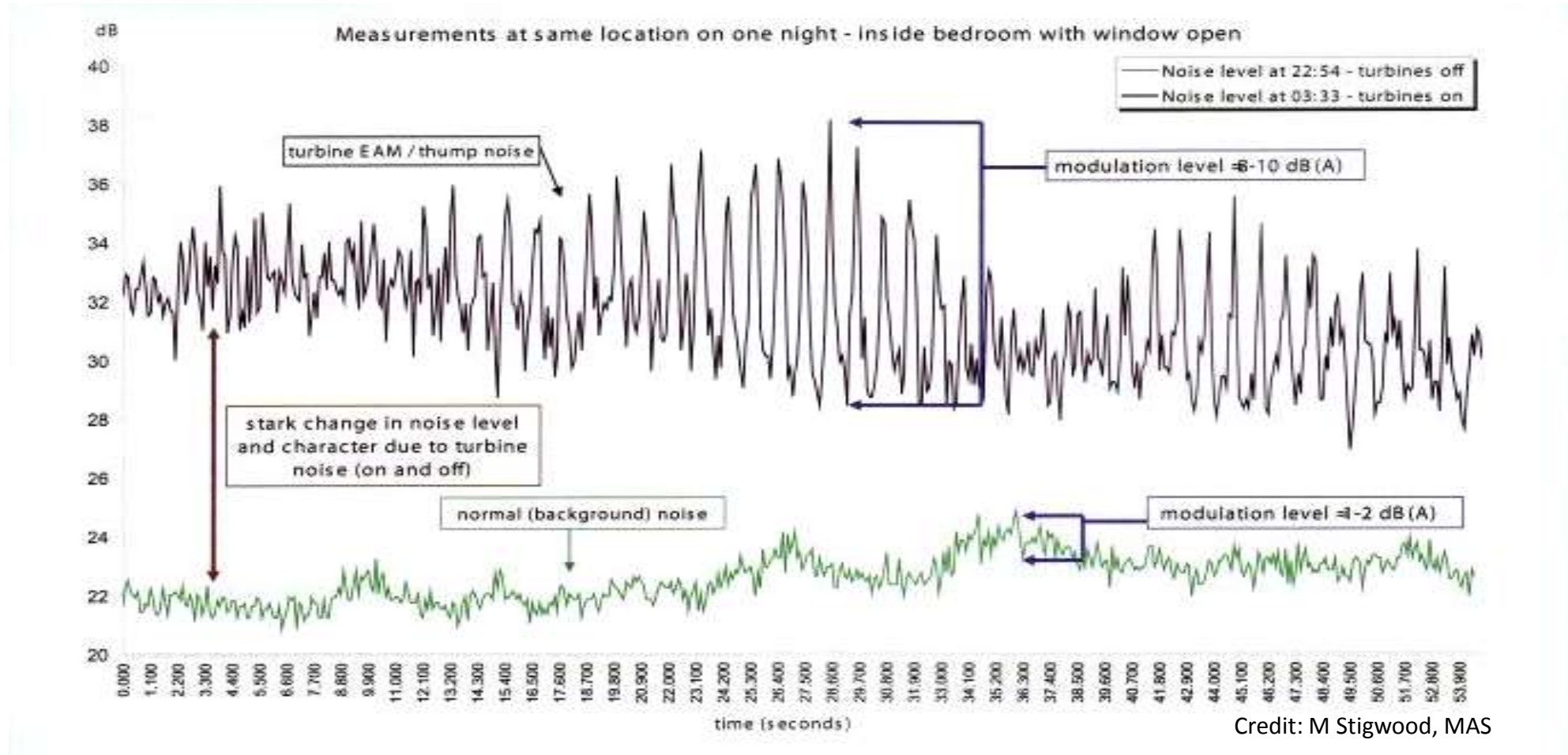


## Wind Turbine Amplitude Modulation: Research to Improve Understanding as to its Cause and Effect

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# Excessive Amplitude Modulation



# Audible Noise and Flapping Blades

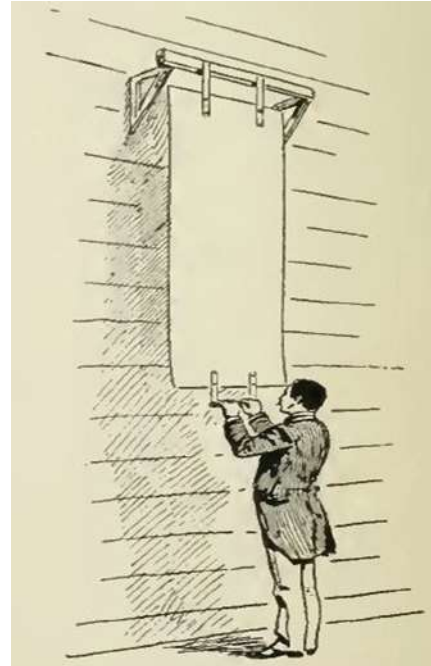


# Blade Flexibility and Elasticity





# Victorian Theatrics



# Floppy Towers (Vortex Shedding)



# It's the **POWER** and the **ENERGY** that matter

- The wind industry claim there is no infrasound from modern turbines. Remember slide 9?
- Competent independent acousticians know that most of the energy in wind turbine acoustic emissions is concentrated below 20 Hz. See slide 13.
- So why has the wind industry not measured infrasound levels down to 0.2 Hz to prove that they are right and we are wrong?
- They have, at least once. Remember slide 13 (MM92 test data)? But not quite low enough in frequency.



# In Summary...

1. Only the inclusion of infrasound can explain the severe AHEs suffered by many wind farm neighbours; it is notable that the wind industry do not publish unweighted noise measurements at infrasound frequencies.
2. The “enhanced annoyance” theory now promulgated by the wind industry is demonstrable nonsense, but for those want to believe it we must gather formal evidence of serious harm to non-human species.
3. We need to create an international independent noise working group comprising (i) specialists in the physics, acoustics and medical aspects of WTN and WTS, and (ii) proven WTN victims and their GPs
4. The group will require funding to procure the measuring equipment necessary to demonstrate the true ILFN outputs of wind turbines.
5. Governments must be enlightened in such a way that they cease their blind support of the wind industry and cease to ignore the evidence.

Thank you for listening – any questions?