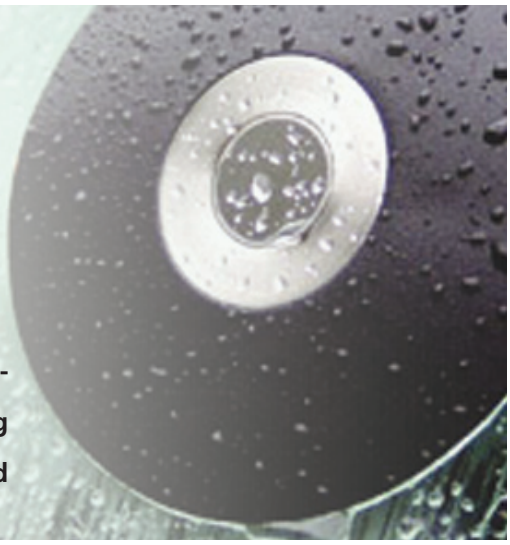
Brüel & Kjær
Incorporating LDS and Lochard

BRÜEL & KJÆR SURFACE MICROPHONE – FIVE YEARS ON



Five years ago Brüel & Kjær proudly launched the world's first Surface Microphone. Originally the surface microphone was developed for flight testing but since then we have come across a great number of different, funny and sometimes unbelievable usages.

From vacuum cleaners to aeroplanes

A manufacturer of large industrial vacuum cleaners was able to measure the flow-generated noise directly in the vacuum cleaner mouthpiece; based on these measurements the mouthpiece design was changed to reduce flow noise.

Another kind of flow noise is generated by the landing gear of an airplane – this can be easily measured by the Surface Microphone.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From wind turbines to artificial hips

Using the Surface Microphone a large wind turbine manufacturer could perform advanced studies of flow noise versus wing profile. Brüel & Kjær supplied Surface Microphones and consulting on special modifications and acoustic simulations.

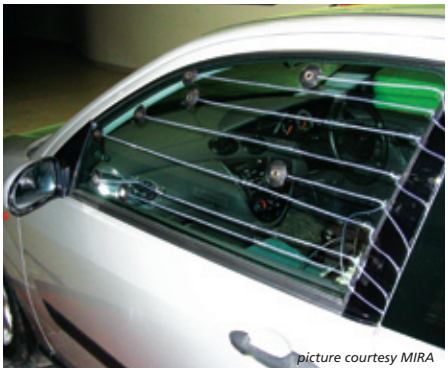
A much different noise source is the audible squeaking of hip replacements. Attempts have been made to measure this noise source – using Surface Microphones of course.

From space to jar filled with water

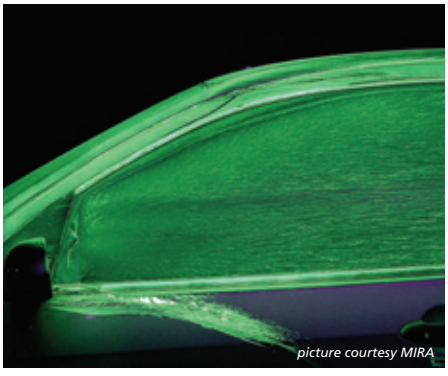
High intensity pressure fluctuations may cause damage to the payload of space rockets – the launch site is keen to prove that a certain level has not been exceeded – the robust Surface Microphone can be placed everywhere for ease of use.

Even when fully submerged in water the Surface Microphone still works and is not damaged – but of course for serious underwater acoustic applications always use Brüel & Kjær hydrophones.

From CFD to real life measurements
Validation of models used in CFD (Computational Fluid Dynamics) can be done in a fraction of the time needed for a fine mesh simulation. Comparison of full-scale measurements and CFD results are used to fine tune the model – all based on Surface Microphone measurements.

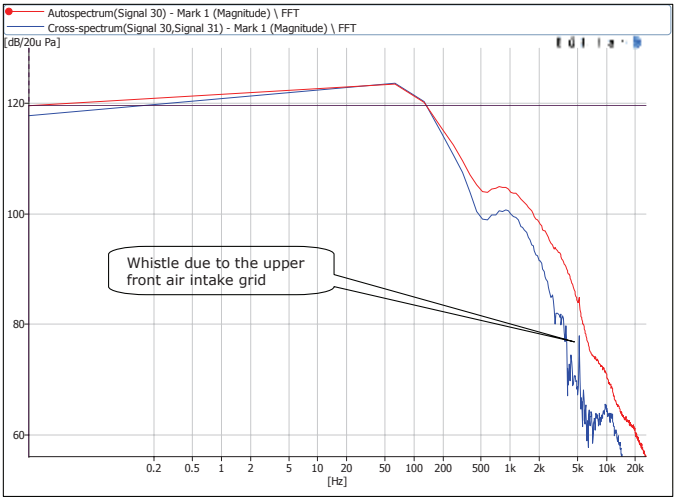


picture courtesy MIRA



picture courtesy MIRA

Autospectrum and Cross-spectrum



Courtesy FIAT

From flow borne pressure fluctuations to audible sound ?
Using correlation techniques a customer has been able to clearly separate the sound signal from flow-borne pressure fluctuations – using two Surface Microphones of course.

What is your application ?

- Got a demanding application where a traditional microphone doesn't quite fit ?
- Measuring in flow ?
- Need to measure in confined spaces ?
- Need to measure true surface pressure ? And even worse – on glass ?
- The Surface Microphone will do the job – safe and easy.

There are two types of Surface Microphone, the Automotive version Type 4949 will measure up to 140 dB while the Aerospace version Type 4948 has an astonishing upper limit of 160 dB.

TELL BRÜEL & KJÆR ABOUT YOUR INTENDED APPLICATION AND WE WILL BE HAPPY TO ADVISE YOU

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