

An alarm developed by Leeds University that sounds something like a strangled parrot looks set to replace the conventional reversing beep. Andrew Gaved finds out why

OVER the next few months, if Chris Hanson-Abbot has his way, quarries will be filled with a strange new sound. Whereas before reversing vehicles 'bleeped' with a strident electronic tone, they are now set to sound more like a screech, thanks to a new alarm being launched at Hillhead by Mr Hanson-Abbot's company, Brigade Electronics.

In fact, screech is not strictly accurate. The new BackAlarm works with something known technically as broadband sound, or colloquially, as white noise.

The alarm emits a sound somewhere between the feedback of an amplified electric guitar and the static noise from a badly tuned television set. But we had better get used to it, because the chairman and founder of Brigade, who has spent 25 years developing reversing safety aids, believes that the new sound will be not only easier on the ear than the conventional bleeper, but also safer.

The lbs-tek BackAlarm is based on technology invented by the audiology department of the University of Leeds. It devised a method of generating a composite sound comprising all audible frequencies, from 400-10,000 Hertz, broadcast simultaneously. The prime advantage of this 'broadband sound' when used in alarms is that it is far easier to locate the source than with conventional electronic tones. Leeds University was sufficiently excited by the potential applications in such areas as evacuation alarms and fire safety sirens that it set up a commercial

company, Sound Alert, listed on Ofex, to patent the technology and market it.

When Mr Hanson-Abbot first got to hear about it about three years ago he was excited too.

"They demonstrated the localised nature of the sound by filling a room with smoke and then setting off a conventional alarm at the exit. Everyone was stumbling about because they couldn't work out where the exits were. But when they set off the multi-frequency alarm, it was simple to work out where to go," he says. He didn't need much convincing.

"I could see how such a directional sound would be ideal for reversing alarms, because in an area such as a quarry where three or four machines are moving around, it is difficult to tell which is reversing."

After the payment of a not insignificant fee, Brigade was awarded the licence for the exclusive use of the broadband process in reversing alarms. Sound Alert has cannily retained an interest in the success of the technology, since it takes a royalty for every alarm sold.

But it is not just the localised character of the sound that makes broadband a good bet for reversing alarms. It is also far easier on the ear.

"The threshold of audibility is some 5 dB lower than a conventional alarm, which means you only need 107 dB to make the same noise as a 112 dB conven-

tional alarm," says Mr Hanson-Abbot.

This has knock-on benefits in the light of increasing concerns about noise nuisance, particularly from local authorities and their long-suffering residents. While current noise legislation is more concerned with engines, Mr Hanson-Abbot says any noise reduction is welcome.

"There is much concern at the moment over noise and the new system is certainly less strident than previous alarms," he

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Chris Hanson-Abbot, Brigade Electronics

says. To prove the point, Mr Hanson-Abbot demonstrates the new alarm. The resulting clamour, while guaranteed to surprise the first time listener with its unearthly clamour, is definitely less grating than the familiar electronic cacophany. Though much depends on one's definition of strident, it is clear that there will be no mistake about the location of the noise when it sounds.

Another, less obvious, pitfall of conventional alarms that broadband overcomes is that, in a noisy environment such as a quarry, another noise with the same

frequency as the alarm could 'mask' the sound, making it more difficult, or in some cases impossible, to hear. Multi-frequency broadband sound is impossible to mask.

"The old system echoes everywhere, which can be a problem in a confined space. The broadband has no such problems," says Mr Hanson-Abbot.

Such a package of benefits comes at a price – around 30 per cent more than current alarms – but one which Mr Hanson-Abbott says pales into insignificance against both the cost of a machine and the cost of saving a life.

The alarm is the latest weapon in a reversing safety crusade Mr Hanson-Abbott has waged for a quarter of a century. In the course of his bid to convince contractors and operators that reversing is the most dangerous manoeuvre in the book, he has met a fair degree of both apathy and bemusement.

"I tell drivers who think they can reverse safely without visibility to put a sheet of cardboard over their windscreen and then let me stand a few metres in front while they drive towards me. They don't tend to drive for very long," he says.

The subject is still close to his heart some 25 years after bringing the UK's first reversing alarm over from Hong Kong in a briefcase.

"It started with just me in a front room, with a product no one had heard of, in an industry I didn't know," he says.

From zero, the UK market has built up to about 150,000 alarms, of which Brigade sells a satisfying 80 per cent.

Having beaten the reversing safety alarm drum consistently, the cause got an unexpected boost in 1998 when HSE minerals sector chief inspector Ed Friend recommended fitting visibility aids to every machine involved in quarrying.

Although plant manufacturers made a lot of fuss over fitting the aids – in essence CCTV cameras – they have generally complied with the regulations.

This, added to three high-profile insurance payouts in a row over reversing accidents against hauliers in the late 1990s, has served to concentrate minds on the hazards of reversing.

"There is a much better awareness of assessing the risks now, thanks partly to the publicity and the size of the personal injury claims," says Mr Hanson-Abbot.

Though he has reached the age of 67, Mr Hanson-Abbott believes he still has a lot of work ahead of him.

"I'm having too much fun at the moment. I'm fired up with this white sound business. My aim is to replace every traditional alarm in the world and I won't do that in two years," he says.

To do that, he will have to replace all the UK alarms and follow that with 1.5 million possible sales in the US.

Needless to say, retiring is not top of his priorities: "My role model is Ove Arup. He was still taking an active part in his business into his eighties."