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Infrasound as a Factor in Reported Anomalous, Paranormal & Psychical Experiences Within a Disused Merseyside Shipyard

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In recent years Infrasound, normally defined as acoustic energy that has a frequency below that of normal human hearing i.e. 20Hz has increasingly been suggested as a causal factor in some reports of personal paranormal experiences. However to date, this hypothesis remains poorly substantiated by field measurements. Apart from the seminal studies conducted by the late Vic Tandy at Coventry University (Tandy & Lawrence, 1998, Tandy, 2000) there is almost nothing that directly links subjective paranormal experiences with naturally occurring or man-made infrasound. A number of studies exist, mainly conducted by the US Military and Government agencies that have demonstrated that exposure to high and very high amplitude infrasound does alter the physiology and psychology of test subjects (von Gierke and Nixon, 1976).

During 2004, the authors were invited by members of staff employed at a two-storey office building within the former Cammell Lairds shipyard in Birkenhead to investigate a series of alleged paranormal experiences. Only the ground floor level was in use at the time, the upper floor had been abandoned for several years and was now used only for storage. The staff reported a range of personal anomalous experiences including the sighting of apparitions, cold spots, feelings of anxiety and unease and a sense of presence. Interviews revealed that all six members of staff had recently experienced something which they considered to be paranormal. Staff members had also reported sounds described as “the slamming of doors” and “footsteps” apparently coming from the abandoned upper floor. During their infrequent visits to the upper floor the staff described apparition encounters and feelings of foreboding and anxiety which at various times could be overwhelming. The investigation notes obtained over hundreds of hours showed that team members who were unaware of the staff experiences independently reported a range of anomalous experiences, including nausea, ear pressure, sudden onset headaches and anxiety, the sighting of apparitions and many instances of fleeting shadows and peripherally seen movement.

The first author has developed infrasound detection and measuring equipment and the offices provided a convenient location for this equipment to be field tested. We did anticipate a degree of environmental infrasound would be present as the building is surrounded by industrial premises and major roads, both of which are well documented sources of infrasound. The background infrasound level was found to be in the region of 30dB-40dB Sound Pressure Level (SPL) for much of the time. We were however, surprised to discover that the infrasound was at times much higher than the measured baseline levels, being up to 85dB (SPL) and manifesting as a series of periodic emissions within the range of 5Hz to 18Hz. Initially, we speculated that that these powerful but inaudible sonic energies were being caused

by the nearby Mersey Tunnel, its entrance 500 metres away and directly in line with the office building. The Mersey Tunnel at 4.6 kilometres length and 13.4 metres diameter, we hypothesised may be acting as a gigantic infrasound generator - a traditional method of producing low frequency sound and infrasound is by blowing air through a very large pipe as in the case of a church organ. The Mersey Tunnel is continually fed a large volume of fresh air via a series of massive fans that blow up to half a million cubic metres of air through the tunnel at times of peak traffic flow and could be thought of as acting like an enormous organ pipe. During periods of lower traffic flow such as at night these fans can be systematically shut down, thus reducing air flow considerably.

Continued infrasound measurements and reference to the investigation team notes revealed that whilst it was likely the Mersey Tunnel was generating infrasound, it could not be demonstrated to be the cause of the high amplitude periodic infrasound which we observed mainly at night when traffic flow and thus fan air flow was significantly lower. Infrasound measurements were additionally taken at periods of high traffic flow during the evening and morning rush hour. These did show a general rise in the overall infrasound but failed to show the periodic high amplitude infrasound emissions that we had observed and recorded. An extended series of measurements was then carried out over a number of weeks during the autumn of 2006. This series of measurements finally traced the infrasound source to the generators and engines on ships moored in the basin of the adjacent ship repair facility less than 150 metres from the office building. The repair facility was only in use intermittently and when no ship was present the particular infrasound emissions were absent. When a ship was observed to be moored in the basin with its generators running powerful infrasound emissions were measured at amplitudes of up to 85dB (SPL) at frequencies in the range of 5Hz-18Hz throughout the entire office building. These occasions also corresponded exactly to the written notes of investigation team members who reported sudden onset headaches, nausea, anxiety and an increase in reports of fleeting visual anomalies and apparitions. On one occasion a large car ferry was moored with its engines running, producing infrasound of >83dB (SPL) at 5Hz. This coincided with the visit to the building by an invited Medium. Without prior knowledge of the location he had been asked to walk around the building indicating areas within the building which he considered to be psychically active. His notes and indications on a plan of the building of those areas being spiritually active or having "denser" psychic energies corresponded remarkably to those areas where the highest levels of infrasound were being simultaneously measured. In areas of the building with lower levels of infrasound i.e. <70dB (SPL) the reported nature and extent of investigation team's personal experiences were greatly diminished. The Medium reported "lighter" psychic energy present and less spirit activity whilst in the same lower infrasound areas of the building. These early discoveries lead us to suggest that: High ambient levels of infrasound or specific frequencies within the infrasonic region may be able to affect individuals and cause them to have unusual and unexpected physiological and psychological experiences. These personal experiences may then be interpreted with respect to an individual's personal belief, knowledge and expectation as being of a paranormal or psychical origin.

This initial infrasound field study forms the basis of future measurements at a range of geographically and typologically diverse allegedly haunted locations and associated control locations which it is hoped will produce a series of baseline measurements and also possibly link or otherwise ambient infrasound to reports of personal anomalous experiences. This series of field studies is being partially funded by a grant from the Society for Psychological Research (SPR).

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A Survey of Spontaneous Apparitional Experiences

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The authors have been running an on-line survey of apparitional experiences since early 2004. The aim of this survey has been to determine the type of apparitional experiences that are being reported, and to ascertain if this can aid in directing spontaneous case research in the 21st century.

It is a fact that many surveys, including the original Census of Hallucinations (Sidgewick et al, 1894) and the Mass Observation questionnaire (West, 1948), have discounted reports of phenomena that are not directly related to an apparitional experience - for example the sound of footsteps is discounted as it is classed as doubtful whether the impression was actually caused by a real sound that the percipient had not recognised (Sidgewick et al, 1894). This is due to the purpose of the original Census being to ascertain evidence of telepathy, however this causes us, as spontaneous case researchers, some problems in quantifying the evidence presented, as this particular phenomenon (the sound of footsteps) is commonly anecdotally reported in spontaneous cases. For this reason, we have considered all anecdotal reports at face value, to try and ascertain the type of experience that people believe they are experiencing, without subjecting the reports to our own subjective bias.

The survey requests participants to answer initial questions concerning belief and whether they think they have witnessed something they believe to have been a ghost. The majority of the survey asks more detailed questions concerning the details of the experience, and finally some basic demographic details concerning gender and age are asked for.

The survey has so far produced a total of 1801 responses, although it must be recognised that the sample of respondents is not representative of the population as a whole. This is due to the survey being accessible only through the authors' website, which not only precludes people without internet access from accessing the survey, but by the nature of the site (being based on spontaneous case research) the people accessing the site are more likely to have had such experiences, with a corresponding bias of responses from experiencers and believers.

The authors will describe some of the results from the survey, and compare these results with previous surveys (including Persinger, 1974 and Green & McCreery, 1975) to ascertain if there are any significant similarities to or changes from the results obtained in previous surveys. Responses considered will include a discussion of the apparent opacity of figures reported, and responses concerning crisis apparitions. A high number of respondents reported that the figure appeared to be aware of them, indicating some form of apparent interaction between percipient and apparition.

One area of further study identified concerned a question that asked respondents to describe the period of history they thought the apparition was from. This proved to be the hardest part of the survey to analyse due to the wide variety of responses. However the authors decided at the beginning of the survey that rather than force people to fit their experience into a pre-defined historical period, it would be better to allow them to describe the historical period in their own words. Results from this part of the survey showed that sightings are more frequent as the period of history tends towards the modern day, however there are obvious peaks in the data in both the Victorian era and the period of time encompassing the two World Wars. This suggests that people may be interpreting apparitions in terms of historical periods they may be more familiar with (such as modern day, Victorian, 1st and 2nd World War). Also, it may be the case that ghosts are actually a phenomenon that fades with time, so we would expect to see more reported sightings of modern apparitions than ones from older periods of history (Smyth, 1984). The authors hypothesised that respondents may not be accurate in describing apparitions in terms of historical period. Limited anecdotal research by the authors has shown that

people cannot distinguish different periods of dress by historical period - it can be almost impossible for someone without in-depth costume knowledge to distinguish between clothing from diverse periods of history ranging from the 17 th to the 19 th centuries. The authors are currently devising a study, which will investigate the reporting of historical period by a group of participants, both apparitional experiencers and non-experiencers.

Results from other surveys discussing percipients' surroundings during apparent apparitional experiences will also be discussed as being relevant to the validity of field research in preference to laboratory research when investigating the mechanism of apparent spontaneous cases.

Finally the authors will briefly discuss the problems they have found in acquiring detailed spontaneous case reports, mainly due to the proliferation of "paranormal investigation" groups over the last decade.

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