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NOISE DAMAGE LIABILITY - EVIDENCE AS TO THE STATE OF KNOWLEDGE

by

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"Every medical man knows that noise causes deafness". This quotation is taken from a twenty page article called "Noise in Industry" in the October 1953 issue of "Scope - a magazine for industry"(1). Few of us would disagree with the truth of that statement. However, in any assessment of an employer's liability of occupational deafness the question of <u>when</u> the employer became aware of the causitive relation between noise and deafness is of major importance.

In the only case for damages for noise induced hearing loss to have reached the courts in this country, it was accepted by both the Plaintiff and the Defendants that deafness had occurred as a result of noise exposure. In this case(2) it was exposure to the impulsive noise of about 130 rounds/day fired in a "Tornado" rivet gun for some fourteen days. The real point at issue was whether the state of knowledge was such at that time (April 1966) that the employer was negligent. The plaintiff lost the case and the following remarks 'by Mr Justice Browne' taken from the Judgement are highly relevant to employer liability. "Ought the defendents to have foreseen the use of this gun might have caused injury to his (the plaintiff's) hearing?" He concluded on this point: "on all this evidence I am not satisfied in the light of scientific and technical knowledge available in 1966 the Defendants were guilty of any want of reasonable care in failing to appreciate and guard against the risk that the Plaintiff's use of the "Tornado" gun might cause injury to his hearing". It was only from the end of 1966 onwards that the dangers of impulsive noise became generally known (3)(4)(5).

On the other hand when can it be said that an employer became guilty of want of reasonable care if he failed to guard against the risk that <u>continuous or impact noise</u> might cause injury to hearing? It is of prime importance to all of us that we should be fully aware of what evidence is available in order that, when the time comes, the courts arrive at a fully informed assessment of the date when responsibility began.

<u>Medical and Technical knowledge regarding continuous and impact noise deafness</u>

Large firms employ medical officers and/or safety officers, part of whose function is that of keeping the management aware of new medical and technical knowledge concerning occupational deseases. It is therefore relevent to briefly review the specialised literature on occupational deafness.

The earliest reference to deafness and noise seems to beiin

Ramazzini(6) in 1713, who noted that Millers and Coppersmiths and those "dwelling near the Nile in Egypt" became hard of hearing due to noise exposure. The symptoms of noise induced deafness in blacksmiths were accurately described by Fosbroke in the Lancet for, 1830-31(7). In 1886 Barr wrote(8) that 75% of the boilermakers he had tested heard with difficulty and that disturbance began immediately upon entering work. Labyrinthine deafness was discussed at the BMA and reported in the British Medical Journal in 1925(9), and we infer that noise was accepted by British otologists by that time as causing nervous deafness. In 1934, Sir Thomas Legge, at that time senior Medical Inspector (of factories), described boilermakers deafness and suggested "stopping the ears with cotton waste or india rubber or plasticine mixed with cotton wool, and gives directions for making ear plugs(10). McKelvie in 1927,(11), reported 7% of 1101 cotton weavers suffered from nerve deafness and was of the opinion that the machinery was responsible and that quieter looms should be used to give protection. In 1952,(12) the president of the section on Otology of the Royal Society of Medicine gave his address on "Some effects of intense sound and ultrasound on the ear"; we can safely say that by this time all the factors of continuous and impact noise which induced loss of hearing were known and available in the medical literature(11)(13)(14). A danger level of 90dB for continuous noise had been proposed(12)which is not so very different from the limit proposed in a Ministry of Labour consultative document published 15 years later(15).

In the 1950's there were several text books on occupational health published which dealt with the dangers of noise and advised the use of ear protection(16)(17)(18)(19)(20).

Ear plugs have been manufactured in this country since the 1914-18 war by Mallock Armstrong(21). This firm started making ear defenders during the second world war at the request of the firm developing the first gas turbine aero-engines, and these defenders have been on sale since that time. They were advertised in an authoritive top management journal having a circulation of 7,000 in 1953(1) and have been on display at the Industrial Health and Safety Centre, in London, since 1954(22). Ear protection was also available from the United States during the 1950's. Several firms started manufacturing ear defenders in this country from about 1959-60(23)(25)(26).

General knowledge regarding continuous and impact noise deafness.

Not every foreman, works manager or company director, however, reads the Lancet or the Proceedings of the Royal Society of Medicine, so we must consider what information there is available in the non-specialist literature.

The earliest general reference we have so far found is of considerable interest. In Walter Greenwood's classic novel, "Love on the Dole", a story of working class life in Salford in the depression years between the wars, a description is given of a local engineering works(27). In the forging shop "the thump caused giddiness" and in the riveting shop" every man (was) stone deaf after a six months spell of work here". It is difficult to escape the conclusion it was well known by the public in 1933 that forgers (blacksmiths) and riveters suffered from the occupational disease of deafness. In a book by V.L. Browd, published in 1953,(28) intended for the laymen, it is stated "sound itself is one of the most effective damagers of the hearing - repeated or lengthy exposures to sound - in machine shops or in heavy industry - is bound to damage hearing".

We have already mentioned the article which appeared in "Scope" in 1953(1). This set out in unequivocal terms the dangers to hearing of exposure to noise in excess of 85 dB, that the damage was irreversible, that noise control was possible and that ear protection was available, as also was specialist advice.

1953 was quite an eventful year as it seems it was the first time the effects of industrial noise on hearing were raised, more than once, in the House of Commons(29)(30)(35)(36), and were discussed in the 'Times' (31(32).

The Industrial Welfare Society carried out a survey of noise in industry(37), published in 1961, which was aimed at "giving the industrial layman a picture of the problem (of industrial noise) as a whole". The questionaire was sent to the society's 700 member firms, of whom only 8% replied. Hence it covered 87,000 workers or 1% of the countries labour force. Twenty-five % of the firms replying felt they had a case or cases of occupational deafness. 70% felt they had a noise problem. Some firms had carried out noise surveys and 18 firms had taken action and introduced various noise abatement procedures including the use of ear muffs.

In 1961(38) a conference was held at the NPL "On the control of noise" - the predessor to the present one; it was attended by representatives from some industries and industrial research organisations.

In 1963 the Wilson Report(39) recommended that the Ministry of Labour should a) disseminate as widely as possible existing knowledge of the hazard of noise on hearing, b) impress on industry the need to take action to reduce the hazard as it is at present recognized, and c) advise industry on practical measures to this end.

As a result the Ministry of Labour published a leaflet "Noise and the Worker" (form 2124) in 1963(40). This pointed out the dangers of loud persistent noise, gave some criteria for the assessment of risk, and suggested some courses of action. Apparently 20,000 such leaflets were printed and distributed by the Factory Inspectorate offices to firms employing more than 250 persons (42). It also refers to the better known pamphlet "Noise and the worker"(41) which was available from HMSO at 1/3d.

<u>Employer's liability for occupational deafness due to continuous or impact noise.</u>

The assessment of employer's liability for industrial deafness will clearly be the responsibility of the Courts. However, it is our responsibility to make sure that, all relevant evidence is available so that a fair assessment can be made. The following comments may have some relevance.

1) A large firm which employs specialists to look after the health of its employees must have its liability assessed against the background of the medical and technical knowledge available. In this case it would seem such a firm should have become aware of the hazard and of its own responsibilities no later than the early 1950's. This would be particularly true of those firms in the traditionally noisy industries. Indeed it seems very likely that deafness has always been regarded as an occupational hazard in noisy industries, although not until after the second world war did noise abatement and hearing conservation procedures, together with specialist advice, become available.

2) Those firms with no medical officer or safety officer would seem

to have to be judged against the background of general knowledge, It would seem to become increasingly difficult for an employer to put up a convincing defence of ignorance as the 1950's wore on. Indeed it seems very likely that by 1963 all but the smallest firms would have had the dangers brought to their notice. Again the traditionally noisy industries would seem to be more liable as their operations were specifically mentioned in the general literature.

3) The small firm perhaps with some new (noisy) process might be able to put up a convincing defence into the 1960's. But credibility would be wearing rather thin in the last few years with the increased activity of the factory inspector, new factory regulations being considered, and with the activities of noise supression salesmen.

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