Case Nos:B3/2003/0721,0776, 0777, 0778, 0779,0780, 0781 and 0782

Neutral Citation No. [2004] EWCA Civ 147

IN THE SUPREME COURT OF JUDICATURE
COURT OF APPEAL (CIVIL DIVISION)
ON APPEAL FROM THE SHEFFIELD COUNTY COURT
(His Honour Judge Moore)

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 17th February 2004

Before :
LORD JUSTICE AULD
LADY JUSTICE HALE
and
MR JUSTICE WILSON

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B E T W E E N

DOHERTY AND OTHERS	**Appellants**
- and -	
RUGBY JOINERY (UK) LIMITED	**Respondent**

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- -

Mr Andrew Robertson QC and Mr Simon Mallett (instructed by Beresfords)
appeared on behalf of the Appellants.
Mr Charles Feeny (instructed by Messrs Peter Ricksons and Partners)
appeared on behalf of the Respondent.

Hearing dates : 15 and 16 December 2003

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Judgment

Mr Justice Wilson:

1. Eight appellants appeal against the dismissal of their claims against the respondent by His Honour Judge Moore in the Sheffield County Court on 30 January 2003. The claims had been consolidated for the purposes of the trial because they raised the same, or primarily the same, point. All of the appellants are women who, for different periods between 1970 and 1999, were employed by the respondent, which, until it closed them in 1999, operated two factories in Doncaster for the manufacture of doors and windows.

2. Each of the appellants suffers from vibration-induced white finger (VWF), the progressive disease which first manifests itself in episodic tingling or numbness of the fingers and can lead to painful and disabling vascular and sensorineural injury to the hands and arms. In their actions they claimed that their VWF was the result of negligence on the part of the respondent. In the course of their work, in which frequently, even within the course of one day, they worked at different stages of the production process, they used a variety of hand-held vibratory tools, such as nail guns, electric drills and screwdrivers, but usually only for a few seconds at a time.

3. Following its introduction for general use in the factories in 1983 they also used, by application of the palm of the hand, an orbital sander for making wood smooth and extricating excess filler from the interstices of the finished article. To this tool considerable attention was paid at the trial because it is now known that, of all the tools used by the appellants, it produced a surprisingly high level of vibration in the hand, from which the potential for development of VWF was substantial.

4. The parties agreed before the judge that the respondent's duty of care in such circumstances had best been defined by Mr Justice Swanwick in Stokes v. GKN (Bolts and Nuts) Limited [1968] 1 WLR 1776 at 1783D as follows:

> "The overall test is the conduct of the reasonable employer taking positive thoughts for the safety of his workers in the light of what he knew or ought reasonably to have known … Where there is developing knowledge, he must keep reasonably abreast of it and not be too slow to apply it."

5. The trial of the actions took place over most of 12 working days. About four such days were occupied in analysing the evidence of the appellants; the judge found in general that they had substantially exaggerated the amount of their use of the vibratory tools. Oral evidence was also given by vascular specialists and, crucially, by two consulting engineers, namely Mr Glendenning on behalf of the appellants and Mr Beauchamp on behalf of the respondent.

6. In his judgment the judge found that the appellants not only suffered VWF but had contracted it in the course of their employment with the respondent. It was agreed, however, that at no time prior to the closure of the factories did the respondent have actual knowledge that any of the tools which it required its employees to use carried a

risk of VWF. The issues turned on whether it had constructive knowledge thereof and, if so, on the steps which it should have taken to protect its employees and on the time at which it should have taken them.

7. It was the contention of the appellants that the respondent had such constructive knowledge from about 1976; that it should then have taken steps to protect its employees not only by testing its vibratory tools for the intensity of vibration which each communicated to the hand and controlling the extent of their permitted use accordingly ("the duty to assess") but also by monitoring its employees for symptoms of VWF ("the duty to monitor"); and that its failure to discharge either such duty had caused the appellants substantial injury.

8. In my view there is foundation for the appellants' complaint that, within the pleadings and the reports of the engineers, there was little to alert them to the fact that their assertion of the respondent's constructive knowledge from as early as about 1976 would be in issue. But, as the evidence developed, it became very much in issue. And the judge's crucial conclusion was that the duties to assess and monitor arose only in 1991/92.

9. The primary ground of appeal is that the judge fell into error in concluding that the duty to assess and monitor arose as late as 1991/92. A subsidiary ground of appeal is advanced on behalf only of four of the eight appellants. It is that, even if the judge was right to find that the duty to assess and monitor arose only in 1991/92, the judge fell into error in concluding that these four appellants had not suffered damage in consequence of the respondent's admitted failure so to act at and after that time.

10. In 1975 the British Standards Institution published a Draft for Development (No. DD43: 1975) entitled "Guide to the evaluation of exposure of the human hand-arm system to vibration". At the trial extensive reference was made to this document because it was the contention of the appellants that its publication should have put the respondent on notice that from then onwards its duty of care towards the appellants included duties to assess and monitor in respect of VWF. The document made clear that it was only a Draft for Development, i.e. of a provisional nature, because the state of knowledge of the effects of exposure to vibration generated by hand-held tools did not yet enable definite conclusions to be reached concerning safe maximum vibration levels for those tools; and it proceeded to express the intention that, when sufficient knowledge had been accumulated, a British Standard would be published on the subject.

11. It was stated in the Draft for Development:

> "The vibration 'dose' to which a man has been subject has proved difficult to assess with changing tools and work patterns and varying grip and vibration levels over a work cycle, and is thus difficult to relate reliably to the objective response of symptoms of disease (the 'dose-response' relationship). In spite of this, there is reason to believe that adherence to the vibration

> levels given in this document will result in a considerable decrease in the incidence of VWF, although it has not been proved that adherence to these limits will prevent vibration diseases over the working lifetime of a regular user.
>
> It is also important for employers, operators of the tools and medical experts to be able to understand the level of reduction in vibration and the working methods which are required to minimise the effect of the residual vibration.
>
> It is hoped that this Draft for Development will help to clarify the situation for those concerned with the problem and encourage monitoring so that, if the onset of VWF is observed, operators may be transferred to other work before the condition becomes irreversible. This would be of particular value in the case of the few operators who may be especially susceptible to injurious effects from vibration even though it is well within the limits recommended in this Draft for Development.
>
> …
>
> Factors of primary importance in determining the risk of VWF include intensity (acceleration), frequency, duration of exposure to vibration and the susceptibility of the individual."

12. There was evidence before the judge that, at the time of this publication, it was not easy to conduct a test within the factory of a tool's vibratory intensity and that the tool (or taped readings from it) would have to be sent to a specialist unit, in particular the University of Southampton, for its intensity to be tested.

13. At the trial it was agreed that, had all the tools in use at the respondent's factories been tested in accordance with the complex formula set out in the Draft for Development, the conclusion would have been that the tools in use at the time of its publication gave rise to a low risk of VWF, which arose only if they were used much more extensively than was at any time the case in the respondent's factories; but that, once introduced, the orbital sander gave rise to a much higher risk, which arose if an employee was to use it for more than 150 minutes each day.

14. There is no challenge to the judge's finding that there was only one employee in either of the factories who at any time used the orbital sander for more than 150 minutes each day and that she was not one of the appellants.

15. On 30 October 1987 the Draft for Development was replaced by a British Standard Guide entitled "Measurement and evaluation of human exposure to vibrations transmitted to the hand" (No. BS 6842:1987), ("the Guide"), which claimed to take into account the international work carried out to date in the field. It suggested that the risk of VWF arose at substantially lower levels of vibration than had been suggested in the Draft for Development. In its introduction the Guide said:-

> "Intensive vibration can be transmitted to the hands and arms of operators from vibrating tools, vibrating machinery or vibrating workpieces. Such situations occur, for example, when a person uses tools such as pneumatic, electric, hydraulic or engine driven chainsaws, percussive tools or grinders. … Habitual use of many vibrating tools has been found to be connected with various patterns of disease affecting the blood vessels, nerves, bones, joints, muscles and connective tissues of the hand and forearm. Many of these diseases can also be caused by a mechanical strain of the hand-arm system, but there is a specific association between vibration and diseases affecting the blood vessels.
>
> The vibration exposures required to cause these disorders are not known exactly, with respect to either the vibration magnitude, frequency spectrum and direction or the daily and cumulative exposure duration.
>
> …
>
> In view of the complexity of the problem and the paucity of quantitative data concerning the occupational health effects of hand-transmitted vibration, it is difficult to propose a firm standard regarding the evaluation of such vibration. However, based on the limited information available, this standard will guide designers, manufacturers as to how vibration likely to cause risk of injury should be measured, together with the weighting to be given at different frequencies."

16. Under the heading "Medical surveillance" the Guide said:-

> "When medical screening is judged to be necessary for workers whose hands may be exposed to potentially harmful vibration then it should be done:
>
> (a) prior to employment in this type of work;
>
> (b) at regular intervals thereafter for as long as the worker continues to be exposed to vibration."

17. The Guide also recommended that all users of vibrating equipment should be warned of the risk of exposure to hand-arm vibration and should be advised to seek medical attention in the event of attacks of white finger or long periods of tingling or numbness.

18. At the trial it was agreed that, had the formula suggested by the Guide for the assessment of the intensity of a tool's vibration been applied to the orbital sander, the guidance would have been that it should be used for a maximum only of 31 minutes

(as opposed to 150 minutes) each day; and that, in the event of longer use than that, there was a 10% chance that the user would develop VWF.

19. The judge was not satisfied that, after 1991/92, any of the appellants had used the orbital sander for more than 31 minutes each day. He did not make a finding (for, in the light of his conclusion as to when the specific duties arose, it was unnecessary for him to do so) whether any of them had done so up to and including 1991/92. So it remains an open question whether the appellants' contraction of VWF arose as a result of exposure greater or less than as recommended in the Guide.

20. Neither the Draft for Development nor the Guide had specifically referred to sanders as possible sources of risk of VWF. In 1985, i.e. between the dates of the two publications, VWF had, by the Social Security (Industrial Injuries) (Prescribed Diseases) Regulations, been made a prescribed disease for the purpose of s.76 Social Security Act 1975. The specified occupations for which it was prescribed included the use of hand-held chain saws in forestry and of rotary tools in sanding metal.

21. In 1990 Professor Griffin of Southampton University produced a book entitled "Handbook of Human Vibration" in which he included a table describing the tools potentially associated with VWF. Under the subheading of "Grinders and other rotary tools" he listed "Hand-held portable grinders, sanders and polishers". It was the professor's reference to "sanders", not limited to their application to metal, which was the foundation for the judge's view that, after allowing a suitable period of time for the digestion of the book on the part of such employers as were causing their employees to use sanders, the respondent then became subject to duties to assess and monitor; and that, had it discharged the duty to assess, it would have discovered, in particular, that the orbital sander was a highly vibratory tool which, by reference to the Guide, should not be used by an employee for more than 31 minutes each day.

22. In 1994 a Guidance Note by the Health and Safety Commission (HSC (G) 88), entitled "Hand-arm vibration", introduced an "action level" which, in the case of the orbital sander, adopted the same recommended limit of use as had the Guide. In the light of the judge's finding that the publication of Professor Griffin's book had generated the respondent's duties, it was unnecessary for him to consider the proper reaction to that publication.

23. The judge expressed the view that still further work was required for the understanding of the causation of VWF and of the proper approach to the safety of employees working with hand-held vibratory tools. The judge noted that all eight claimants were women and adverted to the fact that apparently no male employee of the respondent who had used the orbital sander had complained of VWF. The judge referred to the possibility, suggested in recent Swedish literature, that women are more susceptible than men to developing VWF from the use of vibratory tools and that a lesser maximum degree of exposure may in the future be recommended for them than for men.

24. It was a singular feature of the case, accepted by the appellants, that, during the respective periods of their employment, none of them had made any complaint to the respondent, in particular to its factory nurse, or to their union or to their GP about the tingling or numbness of the fingers, symptomatic of VWF, which they all alleged that they had been suffering. In each case it was only after their employment ceased, and indeed only after the respondent's two factories had closed, that any such complaint was first articulated. Although in each case the judge was satisfied that they did suffer such symptoms, that the diagnosis was indeed VWF and that they had contracted it in the course of their employment, he regarded it as highly relevant to the triggering of either of the duties on the part of the respondent that no complaint had been made to it.

25. The essential allegation of the appellants was and is that the respondent negligently failed to react to the publication of the Draft for Development by assessment and monitoring. The judge addressed this allegation as follows:

> "Employers generally should reasonably have reacted to DD43 by around 1976 or 1977.
>
> [But] I was told by the experts, and I accept, that nobody contemplated that DD43 applied to the woodworking industry. Indeed that has generally proved to be the case, because even now incidents of VWF are very rare from that industry.
>
> To put it another way, if the reasonable employer in the position of these defendants had asked a consulting engineer "does this apply to us?" it is my belief, and I find it as a fact, that he would have been told that it did not."

The alternative, fallback position of the appellants was that in the same way the respondent had negligently failed to react to the publication of the Guide. Having found that employers should have reacted to the Guide during 1988/89, the judge said:

> "After this date there is a conundrum. If these defendants had actually had the orbital sander checked, they would have been advised that it was dangerous beyond 31 minutes a day. If, on the other hand, they telephoned an engineer, he would have been bound to have told them, up to about 1991 or so "Don't bother going to that expense. Nobody I have spoken to makes any suggestion that it is dangerous."
>
> Mr Mallett submits that the defendants – an important part of the woodworking industry – cannot put their heads in the sand. He is right, but only to the extent that they have to act reasonably and, in the words of Swanwick J., "where there is developing knowledge, keep reasonably abreast of it."
>
> Unless special considerations apply – for example, the use of an invention which is untried – the use of a widely accepted tool which had, as far as anybody reasonably knew, no reported

> side-effects in woodwork does not bring with it the demand of a scientific research study unless there is some reason to trigger it. Once again, the situation may have been different had employees who had used it started complaining of tingling or numbness."

26. In relation to the primary ground of appeal Mr Robertson QC on behalf of the appellants mounts a strong attack on the entitlement of the judge, on the evidence before him, to reject the case that the Draft for Development, or at least the Guide, had cast upon this respondent the two specific duties. He contends firstly that the judge's reference to the need for employers generally to react to the Draft for Development by 1976/77 must be taken to include a reference to the respondent. In the light of a comment by the judge in the course of the evidence, Mr Robertson is in my view correct to assert that the judge intended to convey that even the respondent was or should have been aware of the publication. The live question was the nature of the reaction to it which was reasonably to have been expected of the respondent. In this regard Mr Robertson submits simply that the Draft for Development (as also indeed the Guide) related to a condition precipitated by the use of hand-held vibratory tools, which the respondent well knew that it caused its employees to use, and that there was nothing in the Draft for Development to limit its reach to particular industries. Although Mr Robertson is constrained to accept that courts cannot borrow findings of fact from other reported cases, he refers to the raft of reported authorities in which various industries, albeit properly categorised as heavy industries, have been held by the courts to have been fixed with a duty to act in relation to the risks of VWF at around the time of, or even earlier than, publication of the Draft for Development. Mr Robertson also stresses the guarded nature of the advice given in the Draft for Development (as also in the Guide) and that, in particular, it did not say that any specified level of use of a vibratory tool was safe. The argument is that, in this fast developing area of medical knowledge, no employer of a workforce which used hand-held vibratory tools could properly have ignored the publication.

27. Mr Feeny, on the other hand, submits on behalf of the respondent that the judge was fully entitled on the evidence to conclude that the woodworking industry generally did not then regard the risk of VWF as applicable to it. He cites Heyes v Pilkington Glass Ltd [1998] PIQR 303, a decision of this court on facts which in my view do not carry the argument forward. Nevertheless, in the leading judgment, Otton L.J. approved the following passage in Munkman on Employer's Liability, 12th ed., 36:

> "The defence of ignorance of a risk is more likely to arise in the context of ill-health rather than accidents caused by work, the onset of which is either gradual or not readily detectable. In this regard an employer is expected to keep reasonably abreast of current knowledge concerning dangers arising within its trade, and should be aware of pamphlets of the Health and Safety Executive and other safety organisations, drawing attention to risks which have come to light (and the means of avoiding them)…

> … a large organisation like ICI, with its own medical and scientific research sections, may be expected to know considerably more than a small employer, and must ensure that information affecting safety is brought to the notice of the executive authorities with power to decide."

While not suggesting that the respondent was a small employer, Mr Feeny argues that it certainly lacked the research sections referred to in the above passage and that, for example, the woodworking industry does not appear to have been represented upon the multi-faceted committee under whose supervision the Draft for Development was prepared.

Mr Feeny also relies upon the following passage in the judgment of Mustill J. in Thompson v Smiths Shiprepairers (North Shields) Ltd. [1984] 1 QB 405 at 416B:

> "… the standard of what is negligent is influenced, although not decisively, by the practice in the industry as a whole. In my judgment, this principle applies not only where the breach of duty is said to consist of a failure to take precautions known to be available as a means of combating a known danger, but also where the omission involves an absence of initiative in seeking out knowledge of facts which are not in themselves obvious. The employer must keep up to date, but the court must be slow to blame him for not ploughing a lone furrow."

28. It is common ground that there has to be a trigger for the duties to assess and monitor to have arisen in the case of the respondent. Mr Robertson says simply that publication of the Draft for Development amounted to such a trigger. Mr Feeny, on the other hand, says that the judge was justified in concluding that the trigger required more than its publication and in particular required the articulation of complaints of symptoms of VWF on the part of one or more of the employees. Mr Robertson counters with a comment of Judge L.J. in this court in Armstrong v British Coal Corporation (No.1), 28 November 1996, unreported, as follows:

> "It is trite law that an employer paying proper attention to the safety of his employees cannot rely on the absence of complaints from them as providing an impenetrable shield against possible liability."

Mr Robertson in effect contends that what penetrates the shield in the present case is the respondent's failure to monitor. He sub-divides the duty to monitor into a duty periodically to question each employee, perhaps as part of the routine annual medical examination, about possible symptoms of VWF and additionally a duty to warn all employees of the risks of VWF; and he says that, had it been given, such a warning would have elicited complaints of the symptoms as and when the employees began to notice them. A warning, says Mr Robertson, would have cost next to nothing and was the most elementary of the appropriate responses to publication of the Draft for Development. Mr Feeny's rejoinder is in effect that the argument is circular and that

the duty to monitor, and in particular to warn, would have been triggered only if the Draft for Development had reasonably required action in the woodworking industry.

29. In the end it seems to me that, in his search for the reasonable reaction of the woodworking industry to the Draft for Development (as indeed to the Guide), the judge was entitled to place great reliance upon the evidence of the consulting engineers. Mr Beauchamp, a witness of vast experience and, in the judge's estimation, substantial authority, said:

    a) albeit "talking off the top of his head", that it was only Professor Griffin's book that precipitated an appreciation that orbital sanders might give rise to VWF;

    b) that he had always taken the view that, in the case of light industry, unless it knew that a tool was emitting high levels of vibration, an employer would investigate it only upon receipt of a complaint and that he would not criticise it for doing otherwise;

    c) that on many occasions during the 1970s and 1980s he had been present in the respondent's factories in relation to other matters but (despite the generality of his experience) that it had never entered his head that the vibratory tools visibly in use might give rise to health problems; and

    d) that his experience at that time was that VWF was not regarded as a problem in the woodworking industry.

30. Mr Robertson relies upon another passage in Mr Beauchamp's cross-examination in which he accepted that by 1987 the advice, by which he must have meant reasonably prudent advice, to employers in the position of the respondent would basically have been to warn their employees and, in the event of any report, to take appropriate action. In my view that answer was inconsistent with the general tenor of Mr Beauchamp's other evidence that the industry was unaware of any such problem until 1991/92; and, after some thought, I conclude that, faced with a choice, the judge was entitled to adopt the general tenor rather than to proceed on the basis of that passage.

31. The problems for the appellants presented by the evidence of Mr Beauchamp were not lessened by the evidence that had been given by their own expert engineer, Mr Glendenning. He had himself said in evidence that it had been only during about the last five years that in the U.K. the risks of VWF from orbital sanders had become appreciated. When asked by the judge whether he regarded it as fair to criticise an employer in the industry who did not prior to that time take action to reduce the use by its employees of orbital sanders, Mr Glendenning said:

> "It is a difficult issue. It revolves to me around the state of knowledge, which is of course ultimately a matter for yourself, your Honour. In many of the decided cases, courts have found a

> date of 1976 or thereabouts based on the introduction of authoritative guidance at the time. Now I am not sure – and it is not really something for me to pass comment on – what that means in respect of an industry that did not respond to the guidance that was available."

32. My conclusion on the primary ground of appeal is that, by virtue of that near harmony of expert evidence, the judge was entitled to come to the conclusion that, for the woodworking industry, neither the Draft for Development nor the Guide was, by itself and in the absence of any complaint of symptoms even by one of its employees, a sufficient trigger of either of the specific duties referable to the protection of the appellants from VWF for which they contended.

33. The subsidiary ground of appeal is advanced only on behalf of the four appellants who worked for the respondent after 1991/92 and whose VWF condition can be said to have worsened after that time. Of these four, the first, Mrs Innes, developed symptoms of VWF prior to 1991/92 but never used the orbital sander. Instead she used another vibratory tool, namely the electric belt sander. The second, Mrs Lister, developed symptoms in about 1994, which increased in succeeding years. Prior to 1991/92 she had intermittently used the orbital sander but thereafter the only vibratory tool used by her was the nail gun. The third, Mrs Price, developed symptoms in about 1992/93 and intermittently used the orbital sander in the following years prior to closure of the factories. The fourth, Mrs Whitfield, also developed symptoms in about 1992/93; and thereafter until 1998, when she left the respondent's employment, she intermittently used the orbital sander as well as the nail gun.

34. It is the submission of these four appellants that, even on the basis that specific duties referable to VWF were owed to them by the respondent only from 1991/92, their claims should have succeeded. They criticise the reasoning of the judge in dismissing their claims. His reasoning is partly to be collected from the following passage of the judgment:-

> "I believe that the reasonable man in about mid to late 1991 would have said, "Get our orbital sanders checked by an engineer, we may be exposing our employees."
>
> I would then expect that, within a few months, the true position would be known, and steps taken to reduce the usage and to check those who had been using it."

The remainder of his reasoning is to be collected from his survey of the four individual claims, in which he held that each should be dismissed because, after 1991/92, none of the four women had worked with vibratory tools, whether the orbital sander or otherwise, for longer than the maximum periods recommended by the Guide.

35. Mr Robertson submits that the judge's analysis of the nature of the duties which on any view arose in 1991/92 was insufficient and, in particular, too narrow. First he criticises the reference to the need to check only such employees as had been using the

orbital sander. Were such a limitation reasonable, the claim of Mrs Innes would fail for that reason alone. Mr Robertson suggests that it would have been impracticable to limit the check to those who had been using the orbital sander and that, in that a variety of hand-held vibratory tools were used interchangeably by numerous employees, all should have been checked. I agree. I also consider that the suggested limitation to users of the orbital sander is the product of an inapt use of hindsight. It is now known that, of all the vibratory tools used in the factories, the orbital sander was much the most dangerous; but that knowledge came as a surprise and, as of 1991/92, there was, in my judgment, no material which identified that tool as the carrier of greater danger than any of the other vibratory tools.

36. Thus, in my view, all the respondent's employees should have been checked, i.e. asked questions designed to elicit the suffering of any symptoms of VWF, in the course of medical examinations conducted both in 1991/92 and periodically thereafter. But the duty to monitor does not end there. In that the duty is a matter of law, it is proper in this regard to reach for decided authority and in particular for the decision of this court in Armstrong v British Coal Corporation No.2, 31 July 1998, unreported. It was there held that, generated in that case by the Draft for Development, there was a duty to warn employees in the coalmining industry about the risk of developing VWF from vibratory tools, quite apart from a duty to check periodically upon any development of symptoms in the course of individual medical examinations. Judge L.J. suggested that a suitable warning would have been to the following effect:

> "If you are working with vibrating tools and you notice that you are getting some whitening or discolouration of any of your fingers, then in your own interests you should report this as quickly as possible. If you do nothing, you could end up with some very nasty problems in both hands."

37. It is Mr Robertson's case on the balance of probabilities that, had any such warning been given in 1991/92, Mrs Innes would thereupon have reported the symptoms which in her case had already developed and the other three women would have reported their symptoms when later they began to develop; and that the only reasonably careful response of the respondent to each such report would have been to move the women to work which did not involve the use of any vibratory tool. He contends that it would have been insufficient for the respondent to do what the judge suggested to be sufficient, namely to ensure that none of the women used the vibratory tools, and in particular the orbital sander, for longer than the recommended periods.

38. Mr Feeny responds to the effect that such a hypothesis as to what the four appellants would have reported in response either to questions in the course of an examination or to a warning is unjustified, as is the contention as to what, had they reported their symptoms, the respondent should then have done.

39. Although in this court we lack transcripts of the oral evidence given by these four appellants, it is clear that, like the other appellants, they failed to volunteer to the respondent information about the development of their symptoms. Does it follow, however, that, when issued with a warning along the lines of that suggested by Judge

L.J., or when questioned by a nurse in the course of a medical examination, they would still have declined to reveal their symptoms? It is agreed that, during their oral evidence, none of the appellants was asked whether they would have revealed their symptoms in either of those events. In his judgment the judge did not address this specific question. Nevertheless, when later invited to grant permission to appeal and shown the grounds of the proposed appeal, he issued short written reasons for refusal in which he stated:-

> "In each case, on the evidence, if the ladies had been asked about tingling, I was quite satisfied that they would have played it down."

40. If, by the phrase 'played it down', the judge meant to convey that, while revealing their symptoms, the appellants would have failed to reveal their extent, his comment hardly helps the respondent in any event. If, however, he meant to convey that the appellants would not have revealed the existence of their symptoms even in response to a warning or to individual enquiry, then, according to Mr Robertson, his belated finding is unjustified. Mr Robertson contends that it is inherently preposterous that, faced with a stark warning or individual enquiry, they would not have revealed their condition, whatever their lay view of its significance. Mr Feeny, on the other hand, contends that it is for the appellants to establish every necessary link of their case and that, in the absence of direct evidence on the point, they failed to establish that they would so have responded.

41. After careful thought I have concluded that Mr Robertson's submissions on this aspect should be accepted. It seems to me to be inherently unlikely that the four appellants would have been so careless of their own health as to have failed to respond to warnings and enquiries, whatever their record in failing to volunteer details of their developing condition. These are not realms of fact, to be established by proof, because no such warning or enquiry was ever given or made. Because of the respondent's omissions in that respect, we are banished to the realms of speculation, informed of course by a careful analysis of the relevant past. In the absence of specific evidence justifying the conclusion that they would not have responded to warnings or enquiries, I think that the likelihood of a common-sense reaction should be attributed to the four appellants. That approach is fortified by a study of the oral evidence given by the respondent's Health and Safety Manager at the factories. Having explained that each employee was subject to an annual medical assessment, at which it would have been easy for the nurse to ask about symptoms of VWF, he agreed that the existence of VWF among the employees would thereby have very quickly come to light. Indeed, when the judge asked him whether an admission of symptoms of VWF might lead an employee to be told that there was no appropriate work for her in the factories, the manager replied that, at least by the 1990's, there was work for employees which did not involve the use of vibratory tools and that no one would fear losing her job by virtue of such an admission.

42. I turn to the issue whether, had the respondent been aware of the symptoms of VWF exhibited by the four appellants, its duty was only to ensure that none of them used vibratory tools, and in particular the orbital sander, for longer than the maximum periods recommended in the Guide. I agree with Mr Feeny that to rely in this regard

on the statement of Judge L.J. in Armstrong v British Coal Corporation No.2 above, that "provided the condition is recognised in its early minor form, it will normally be cured by removing the employee in question from work with vibrating tools" would be improperly to import evidence from another case. But the same proposition is reflected, albeit in less direct terms, in the Draft for Development in which, in the passage quoted in paragraph 11 above, it recommended that, if the onset of VWF was observed, an operator should be transferred to other work before the condition became irreversible. The nature of the duty of employers referable to VWF, once triggered, is at any rate a matter of law; and it is noteworthy that, in Billington & Burrows v British Rail Engineering Ltd, 8 February 2002, unreported, Field J., determining an appeal from the decision of a circuit judge, rejected the contention that the employer's duty to those known to be exhibiting symptoms of VWF was limited to ensuring that they were not exposed to vibration for longer than the recommended maximum. He pointed out that in that case the symptoms had developed notwithstanding exposure to levels of vibration below the recommended maximum; and it seems to me that in the present case, notwithstanding the gap in the judge's findings to which I have adverted in paragraph 19 above, the respondent, upon learning of the symptoms exhibited by the four appellants, might well also have concluded that they had arisen notwithstanding exposure for shorter periods than the successive recommended maxima. For that reason alone it would have been insufficient for the respondent to ensure only that the currently recommended maximum period was not exceeded. I agree with Mr Robertson that, following its discovery of the appellants' symptoms, it would have been negligent for the respondent to cause them to work with vibratory tools at all and that, with respect, the judge's reasoning in dismissing their claims is therefore flawed.

43. For the above reasons I would allow the appeals of the four appellants who are able to take advantage of the subsidiary point and would remit their claims to the judge for assessment of their damages consequent upon breaches of duty on the part of the respondent from 1991/92. I would dismiss the other four appeals.

Lady Justice Hale:

44. I agree that four of these appeals should be allowed as indicated by Wilson J. After some hesitation I also agree that the remaining four appeals should be dismissed for the reasons he gives. But in view of the way in which the case was argued before us, and the possible use to which this judgment may be put in future cases, I wish to emphasise certain points. This case does not hold that the 'date of knowledge' of the risk of VWF in the woodworking industry is as late as 1991/92. It holds simply that these particular employers were not in breach of their common law duty of care towards these particular employees in failing to monitor them for symptons of VWF until that date. In other words, there is a distinction between holding that a reasonable employer should have been aware of the risks and holding that certain steps should have been taken to meet that risk.

45. The date of knowledge that hand-held vibratory tools might lead to VWF is generally put in the 1970s. There was nothing in the pleadings to suggest that the date of knowledge was in issue in these actions. The Defence in all eight actions took issue

with the level of exposure claimed by each claimant, but did not assert that at the date of their claimed exposure it was not reasonably foreseeable that the claimants might suffer VWF if over-exposed to vibration from the tools used at work.

46. The written expert evidence was accordingly addressed to the issues arising from the pleadings and dealt only briefly with foreseeability. Mr. Glendenning, for the claimants, said this:

> "4.27 Knowledge of the risks from vibrating hand tools has developed over the period of the various claimants employment. The principle developments were the publication of BS DD43: 1975 and the subsequent British Standard and Health and Safety Executive publications. The 'date of knowledge' for any particular employer is a matter for legal expertise. Although, in our experience the publications of BS DD 43 is often taken as the start point from which an employer should have known about VWF and begun to take action. In our opinion Rugby Joinery should have become aware of the risks associated with uses of vibrating hand tools and begun to take action … during the mid to late 1970s."

Mr. Beauchamp said this:

> "8.1 The earliest date of knowledge in industry has generally been established as round about the mid 1970s (1976) and a summary of the situation is provided at Appendix C.
>
> 8.2 Considering the date of knowledge in connection with the various claims … in this action I would have expected the relevant guidance/documentation would be the British Standard Draft for Development BSDD 43: 1975 superseded by British Standard 6842: 1987 followed by the more recent publication HS(G)88 which was published, I understand, in June 1994 …
>
> 8.3 There are many documents in the public domain relating to the subject of hard-arm vibration. The documents to which I have referred are not intended to represent an exhaustive list but are merely the documents most commonly referred to in cases of this nature."

In Appendix C, Mr. Beauchamp summarised the contents of various publications, including the classic book by Taylor and Palmear, *Vibration White Finger in Industry*, published in 1975; BS DD 43: 1975, from which he made extensive quotation; and Professor Griffin's *Handbook of Human Vibration*, published in 1990. The Appendix concluded:

> "In the majority of the vibration cases which have been heard in the Courts and in which this office has been involved the state [date] of the knowledge has been in round about the mid-1970s.

> This was in respect of cases where the Claimants made regular use on a daily basis of vibratory equipment.
>
> There are of course the now more recent cases involving the British Coal Corporation, British Gas and British Rail."

47. Nothing in those reports would have led the claimants to believe that the defendants were contending for a date of knowledge later than the mid 1970s. This is scarcely surprising, as BS DD43: 1975 is the sort of official publication which large employers are routinely expected to scan to see whether it contains advice which might affect them. It was not an obscure article in some medical or scientific journal but official advice. Had there been any suggestion of a later date of knowledge, both experts might have produced a more thorough survey of the literature. That such literature exists is within the knowledge of any court which has dealt with other cases of this nature (and is apparent from the reported cases).

48. The disagreement between the experts in their written evidence was not about whether a reasonable employer should have been aware of the risk of VWF in employees using hand-held vibratory tools but what such an employer should have done about it. In their Joint Engineers Statement they wrote:

> "Mr. Glendenning believes that at the date of knowledge the Defendant should have made positive enquiries of their workforce using vibratory tools with regards to symptoms and made an assessment of the vibration levels. Dependent on the results of these enquiries and assessments further action may have been necessary. Mr. Beauchamp believes that if the vibration exposures did not exceed levels given in the guidance relevant at the time of exposure then the Defendants would be justified in taking no further action to control vibration risks unless they were aware of any problems. We accept however that these, strictly speaking, are matters for the Court to decide."

49. The experts are right, of course, that these are matters for the Court to decide: even if a reasonable employer in any industry ought to have been alive to the risk of VWF by the mid 1970s, the Court has to decide what would be taking reasonable care for his employees in all the circumstances. What would be reasonable care for one employer might not be reasonable care for another, even if both could foresee that there might be a problem.

50. In favour of Mr. Glendenning's proposition are some of the contents of BS DD43: 1975. The guidance given is not limited to heavy industry but applies to industry generally. It is a 'draft for development' because so little was then known about the 'dose-response relationship'. It was hoped that the draft would help clarify the situation for those concerned with the problem

> 'and encourage monitoring so that, if the onset of VWF is observed, operators may be transferred to other work before the condition becomes irreversible. This would be of particular value in the case of operatives who may be especially susceptible to injurious effects from vibration though it is well within the limits recommended …' (p4, para 1)

BS DD43: 1975 also recommended that operators were asked about symptoms before being engaged for employment entailing exposure of the hands to vibration (Appendix B).

51. Because of the complexity of the problem and the paucity of information, there was still considerable uncertainty by the time that the British Standard was promulgated in BS 6842: 1987. This also advised in B2.1:

> "When medical screening is judged to be necessary for workers whose hands may be exposed to potentially harmful vibration then it should be done:
>
> (a) prior to employment in this type of work;
>
> (b) at regular intervals thereafter for as long as the worker continues to be exposed to vibration."

Further, the 'Administrative preventive measures' at B3 included:

> "(a) All individuals who use vibrating equipment should be advised of the risk of exposure to hand arm vibration."

Among the 'Advice to individuals who use vibrating tools' at B4 was this:

> "(d) Should attacks of white or blue finger or long periods of tingling and/or numbness occur, seek medical advice."

52. It is clear from both documents that the state of knowledge was not sufficient to lay down a safe standard of exposure. The variables were too complex, and included individual susceptibility. Thus it could be suggested that any employer whose employees regularly used hand-held vibratory tools should at the very least take steps to warn them of the possible dangers and advise them to report any symptoms when they occurred.

53. On the other hand, both documents are intended, as their titles state, as guides to the measurement and evaluation of exposure of the human hand-arm system to vibration. The levels of exposure to vibration which they discussed are way beyond most of the levels to which these claimants were exposed. If these employers had addressed their minds to the risks at an earlier stage and taken the step of having their tools examined they would not have been alerted to the risks except within the recommended levels.

54. If we assume, therefore, that these employers should have been alive to the problem and addressed their minds to it, what should they have done? The only answer which would have made a difference to these claimants would have been to warn them to be on the lookout and report the symptoms if they occurred. But the law of negligence requires only that employers take such steps as are reasonable in all the circumstances to protect their employees from foreseeable harm. In asking whether it was reasonable in all the circumstances, the fact that it would not have crossed these experts' minds that any such steps might be necessary must be relevant, albeit not determinative. When added to the low levels of exposure, the much higher levels of exposure discussed in the official publications, and the lack of any suggestion of complaint from any of the appellants, the judge was entitled to reach the conclusion that there was no breach of duty until 1991/92.

55. For those reasons, I agree that four of these appeals should be dismissed.

Lord Justice Auld:

56. For the reasons given by Wilson J, I would allow the appeals of the four appellants who are able to take advantage of the subsidiary point and would remit their claims to the judge for assessment, and I would dismiss the other four appeals.

57. I respectfully agree with Hale LJ, as she then was, that this case should not be treated as an authority for the proposition that the "date of knowledge" of the risk of VWF in the woodworking industry is as *a generality* as late as 1991/92. However, I am uncertain as to the value of so general a notion of the "date of knowledge" or in the application, on a case to case basis, of the distinction that my Lady has drawn between holding that a reasonable employer "should have been aware of the risks" and holding that the employer in question should have taken steps to meet the risk to the claimant in question.

58. Whilst the notion of a general "date of knowledge" may provide a useful starting point for considering the date of knowledge in any individual case, that is all it is. Looking - as a court must - at each case on its own facts, the relevant "date of the employer's knowledge" will vary according, not only to the general nature of the industry in its widest sense, e.g. the woodworking industry, but also to the particular type of work within the industry that is under consideration, the tools used by the claimant, the nature and pattern of his use of them and the extent to which, having regard to the well known test of Swanwick J. in *Stokes v. GKN (Bolts and Nuts) Limited*, the employer in those circumstances should have been put on notice that harm might ensue to the claimant, if he, the employer did not do something about it.

59. As I understand Wilson J to have reasoned the matter – reasoning with which I respectfully agree – a court in each individual case is concerned with identifying whether and when the employer's duty to do something about the risk of harm to the particular claimant was "triggered" by that combination of circumstances. That trigger, it seems to me, is the identification of the date of knowledge in the individual case.