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Computer technology, occupational health and the law

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Published version

JOHNSON, N. C. and MONTANHEIRO, L. C. (1997). Computer technology, occupational health and the law. International review of law computers and technology.

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COMPUTER TECHNOLOGY, OCCUPATIONAL HEALTH AND THE LAW.

NIGEL JOHNSON & LUIZ MONTANHEIRO

Introduction

The use of computers as part of the information technology process for data processing has expanded rapidly throughout the British economy. The London Hazards Centre (1993) has estimated that there are 10 million visual display units (VDUs) in use in Britain today. This expansion has taken place in both the private and public sectors of the economy. Information technology is used intensely above all else to bring about efficiency. The growth of teleworking means that workers can now use computers to work from home (Haws 1994).

What is particularly worrying, though, is the effects on computer users' health. In recent years, there has been much debate around a growing body of evidence on health effects associated with computer usage and the potential for compensation claims in the courts. Musculo-skeletal disorders, such as back pain and repetitive strain injury (RSI), are among the leading causes of ill health in the UK (O'Hara 1995) and Ireland (Saunders 1995).

From the starting point of the health hazards of computers, this article attempts a preliminary assessment of the impact of health and safety law on computer-based work. There are two main areas here. First, there are regulations on the use of display screen equipment (DSE)¹ which lay down standards designed, inter alia, to prevent illness related to the use of DSE. Second, there is an increasing likelihood of civil

actions for compensation against organisations which fail to take reasonable measures to protect employees from contracting work-related upper limb disorders (WRULDs). On the surface, it would appear that legal regulation has kept pace with technological developments, providing legal protection for employees involved in keyboard work. However, that is not entirely the case. There are shortcomings in the protection available to workers which ensue from a variety of factors, including the lack of a properly integrated legal approach to occupational health matters.

The Health Hazards of Display Screen Equipment

In order to understand the health hazards of DSE it is essential to have a rough idea of the technology itself (Pincus 1991). Inside the VDU is a cathode ray tube, which contains an electron gun which shoots particles at the screen so activating the phosphor coating on the back of the screen. The interaction between the particles and the phosphor then produces radiation emissions. VDUs produce both ionizing and non-ionizing radiation. Manufacturers argue that screens used in VDUs filter out ionizing radiation (X-rays) to well below official safety limits. Nevertheless, concern has been expressed about the potential effects of low, and extremely low, frequency non-ionizing radiation which may be carcinogenic and adversely affect reproductive capacity. In addition there are ergonomic problems associated with the use of VDUs such as eyestrain and posture related problems.

RSI is a musculo-skeletal disorder arising out of repetitive physical motions.

Keyboard operators using VDUs are able to type much faster than on conventional typewriters. RSI often develops out of unsupported hands and wrists floating over a keyboard for long periods, but can also affect the user's back, shoulders and forearms.

A survey carried out by Oxenburgh (1985) in Australia and New Zealand showed that the likelihood of contracting RSI increases dramatically after more than five hours work per day at a VDU. The legal implications for employers who fail to take reasonable steps to prevent RSI developing in keyboard operators are explored below.

A recent survey carried out by the RSI Association (1993) of nearly 200 RSI sufferers found that the majority worked either as secretaries, typists, or VDU operators. Only 28% of respondents were still working for the same organization that employed them when they contacted the injury. The majority of those who left gave their state of health as the reason for leaving. Half of those who stayed adopted a revised job description, often reducing their working hours and hence earnings. Almost a quarter of respondents were attempting to take legal action against their employer or former employer.

The Health and Safety Executive (1992), whilst accepting that work-related upper limb disorders do arise from DSE work, is much less clear about the precise cause of such disorders:

The contribution to the onset of any disorder of individual risk factors (e.g. keying rates) is not clear. It is likely that a combination of factors are concerned ... This variety of factors contributing to display screen work risk requires a risk reduction strategy which embraces proper equipment, furniture, training, job design and work planning.

At present, eye problems are the most usual hazard associated with DSE work.

Flicker, glare, character size, lighting and contrast have been said to contribute to the deterioration of eyesight. However, in the view of the Health and Safety Executive (1992) medical evidence shows that using display screen equipment is not associated

with damage to eyes and eyesight; nor does it make existing defects worse. But some workers may experience *temporary* visual fatigue. Other non-RSI health problems arising out of DSE usage include skin problems and stress.

There is also the question of reproductive hazards, a subject of acute scientific controversy. There has been some concern about a possible link between VDUs and reproductive hazards. According to the London Hazards Centre (1993): “Since 1987, several hundred papers have been published on this subject and yet no clear evidence that VDU work does not harm reproductive health has yet to be produced.” However, the Health and Safety Executive (1993) interprets the same body of evidence as *not* disclosing a link between working with DSE and miscarriages and birth defects: “Many scientific studies have been carried out, but taken as a whole their results do not show any link between miscarriages or birth defects and people working with VDUs.”

Since the widespread introduction of information technology into white collar and professional employment there has been considerable concern about the occupational health implications of new technology for users. Much has been written about the possible health effects of work with DSE. Unfortunately medical and scientific opinion is sharply divided on these issues with consequent deleterious effects on the thinking of both regulators and judges. It is to this relationship between computer technology and the law that we must now turn.

The impact of the Display Screen Equipment Regulations

Employers of workers who spend a significant amount of time working with display screen equipment are subject to minimum legal standards through the Health and Safety (Display Screen Equipment) Regulations 1992. The Regulations are the result of a European Directive (No 90/270/EEC, May 29, 1990), which was opposed by the UK government on the grounds that it was not convinced that existing scientific evidence sufficiently proved the existence of hazards (Johnson 1993).

Regulation 1 defines key terms used in the Regulations such as “workstation”, “user” and “operator”. The regulations only apply to “users” who are defined as employees “who habitually uses display screen equipment as a significant part of [their] normal work.” Norton (1996) estimates that the Regulations cover five and a half million workers, one quarter of the labour force. Regulation 2 requires employers to carry out risk assessment exercises. Risks so identified must be remedied, and risk assessments must be reviewed in the light of changes to the work environment or in the light of relevant research findings. Regulation 4 says that employers must plan the activities of users so that their daily work on DSE is periodically interrupted by breaks or changes of activity. Users are entitled to take breaks away from DSE. Regulation 5 requires employers to offer eyesight tests to display screen users. If the test shows that spectacles are necessary then the employer must provide them. Regulation 6 stipulates that employers must provide adequate health and safety training in addition to training on how to use DSE equipment. Finally Regulation 7 lays down that every employer shall ensure that users are provided with adequate information about health and safety relating to their work-stations, as well as action taken by their employer to comply with the Regulations.

As a result of these Regulations, employers must ensure that all new DSE meets minimum requirements as regards of the equipment itself as well as the working environment in which it is located. Existing workstations were required to be brought up to standard by the end of 1996. In addition employers have to assess and reduce risks and provide breaks from work. Other costs on employers flow from the requirement that eye and eyesight tests and any necessary spectacles must be provided at employers' expense. One of the main trade union concerns about the DSE Regulations is the absence of a clear definition of 'significant user'. Similar interpretation problems also exist in relation to rest breaks and eye test entitlements. Whilst the Regulations require that employers plan work so that users at work are able to take e periodic breaks away from DSE, they do not lay down specific times for breaks. Other EU states have gone further than the Directive (Stewart 1993). As regards eyesight tests, there is uncertainty over how far employers must meet the costs of spectacles and over the frequency of repeat tests. Whilst it is welcome that the Regulations have been introduced, the UK's Trades Union Congress and the London Hazards Centre (1993) have expressed concern that hard pressed health and safety inspectors will be unable to cope with the extra work arising from the introduction of this and other sets of regulations emerging from the European Commission's action programme on health and safety. In the absence of trade union organisation or effective enforcement by government inspectorates, it is unlikely that employers will prioritize the implementation of the Regulations. This view seems to be supported by available survey evidence.

In January 1993, coinciding with the introduction of the DSE Regulations, the authors carried out a survey of employees in 400 Local Authority Departments responsible for

the collection of local taxes. The respondents were chosen on the assumption that this work would be extensively computerized. The results of the survey must be treated with some caution because of our relatively low response rate (26.5%). Whilst the survey was primarily intended to identify some of the wider health and economic effects of computer usage, some of the data obtained is relevant to our discussion of the DSE Regulations.

The survey asked questions about rest breaks away from DSE, training and eye tests. On rest breaks: 35.6% of employees took a break after one hour; a further 28.8% after two hours; a further 30.6% after three hours; and 5% after four hours. In terms of the adequacy of these breaks: 65% of male respondents acknowledged the breaks as being adequate, as against 48% of female respondents. Over 45% of female respondents stated that breaks were too infrequent, as against just around 15% of male respondents. The survey also dealt with training. Almost 70% of female respondents, and just over 50% of male respondents, stated that they did not have any health and safety training in respect of the risks of working with workstation equipment. Finally on eye tests, just over 24% of local authority employers who responded were providing free eye tests, though only 20% went so far as to pay for spectacles for employees working with computers who were identified as having sight problems. The survey tried to do more than merely assess the extent to which local authority employers were complying with the DSE regulations. One of the matters we wanted to investigate were the negative health consequences arising from VDU usage. Respondents were asked to record which, if any, of the following symptoms they attributed to their work with DSE. The symptoms were: stress; physical (eyes, hands, headache and backache); other general health problems; adverse impact on working

life; adverse impact on social life; adverse impact on job satisfaction; decreased communicativeness; development of a drinking habit; development of a smoking habit; and a decrease in self confidence. On average, respondents identified close to four of the ten factors listed above as affecting them personally. This suggests that some users suffer serious negative effects from using computers and that this represents a potential economic and legal cost to the enterprise.

In order to investigate this point further, respondents were asked to identify extreme cases of negative physical or psychological effects which they attributed to work with DSE. 10.6% of respondents said they now had to wear glasses as a result of computer usage, and 11.7% of respondents identified cases of stress, medication or time off work. Given these findings, we were surprised to find a general neglect by employers of measures to deal with the problems identified by users. Respondents were asked about measures taken by managers in respect of the use of display screen equipment. On the positive side, 3.2% of employers practised stress counselling or stress management, whilst 4.3% of employers had adopted job rotation. A further 12.7% of employers had provided employees with anti-glare screens; whilst 12.7% had made other ergonomic improvements. These responses seem to be remarkably inadequate given the potential for costly litigation discussed below.

Nine months after the implementation of the Display Screen Equipment Regulations in January 1993, the Manufacturing, Science Federation (MSF) carried out a survey of 240 trade union safety representatives. The survey, reported by Battersby (1993), found that 50% of employers had not carried out the basic legal requirement to assess risks to health; 66% had not provided training on the dangers of work with display

screens; 32% had no procedures for eye tests; 37% had no procedures for providing glasses for display screen work; 42% had not allowed for regular breaks; and 46% had not consulted union representatives on the implementation of the Regulations.

In November 1995, almost two years after the implementation of the Regulations, the Trades Union Congress (1996) carried out a survey of 270 safety representatives, 89% of whom worked in the public sector. The survey showed that: in 73% of workplaces a risk assessment exercise had taken place, although only 48% of such assessments had involved trade union representatives. It was found that 66% of employers had established a formal policy to meet the requirements of the Regulations, while 88% said that users were allowed to take rest breaks -the median was a 10 minute break every hour. Just over one third of respondents said that their employer did not provide free eye tests. Those who did, tended to repeat tests every two years.

Respondents were also asked about the health effects of using DSE: 22% thought that the number of workers suffering from RSI was increasing; 27% thought that back pain was on the increase; 29% said that eye strain was on the increase, and 40% thought that stress was increasing. Given that this question did not relate to the respondents' own stress, back pain, RSI and eye-strain, but as to their perception as to whether such disorders were increasing, decreasing or static, how much weight can be placed on these opinions is a matter for conjecture.

In conclusion, regulations have been implemented as the result of a European Union initiative which at least laid down some basic technological and ergonomic standards for the protection of those working with DSE. Whilst European standards are to be

preferred to the previous *laissez faire* position of the British government (which had adopted a non-binding code of practice on VDUs), we should not be too optimistic. As we have seen, there are problems with the DSE Regulations. Critics say they do not go far enough. In particular, that there are ambiguities in the Regulations, which extend to key definitions ('significant user') and to the failure to be more prescriptive about other important issues, such as the frequency and duration of rest breaks.

Why then were these relatively mild regulations so bitterly opposed by the UK government? Part of the answer may be that the Regulations run counter to the preference of the British government for occupational safety standards which are based on self-regulation, advisory codes of practice and, more recently, on the notion of de-regulation (Williams 1995). Light may also be thrown onto the question by some of the survey evidence. The authors' survey suggests that the European standards were ahead of UK practice. The TUC survey shows that only gradual progress has been made in the formal implementation of the Regulations since the MSF survey in 1993. Certainly, the TUC felt that there was no case for de-regulation. Employers still need to take the Regulations seriously. The TUCs view is that the Regulations should be extended to cover all those using DSE, regardless of the amount of time they spent using the equipment, and that employers must recognise the importance of users taking frequent, short breaks away from DSE.

However the existing survey evidence needs to be treated cautiously. The responses came mainly from the public sector, and care must be taken not to make too assumptions about how the Regulations might have been implemented in the private sector. Furthermore, it may be that qualitative, as opposed to quantitative, research

methods should be tried. The surveys show the extent of formal measures taken by employers to comply with their legal obligations under the DSE Regulations, whether they have adopted a policy on DSE, whether they allow breaks, and so on. What they do not tell us is the extent to which these measures are successful in mitigating or preventing the health and safety risks which we know are associated with DSE usage. One way of addressing this issue is to look at industrial injuries litigation associated with work-related upper limb disorders.

Establishing Legal Liability for Work-related Upper Limb Disorders

Workers can claim damages under that branch of the law of negligence known as employers' liability, as well as for breach of statutory duty. Essentially, employers have a common law duty to take reasonable care for the safety of their employees. The burden of proof that there has been an injury, that it is work related, and that a reasonable employer would have taken reasonable steps to prevent it is laid on the employee. Because medical and scientific knowledge in this area are at a comparatively early stage of development, it is difficult for workers to win compensation for computer-related medical syndromes.

Employers are vigorously contesting RSI claims. Some of the tactics used to avoid claims are, to deny that RSI exists as a work related condition, or to argue the "no guilty knowledge" defence - that at the time the employer could not reasonably have been expected to know that RSI could have been caused by work, or alternatively that the employer had taken all reasonable care in the circumstances.

As part of the common law duty of care, employers are under a legal duty to warn employees of dangers at work where the employer is in a better position to appreciate them. At a Trades Union Congress - Association of Personal Injury Lawyers (1993) conference on Work-Related Upper Limb Disorders, solicitor Mark Thompson described how the first wave of successful cases involved employers who had failed to provide any warnings. More recent cases have concerned warnings which were insufficient because they were not backed up with medical, training, or other remedial systems.

In contrast to the relatively vague judicial standards laid down by common law, employees can also claim compensation if their employer has breached a statutory safety standard designed to protect them. Relevant legislation includes the Offices, Shops and Railway Premises Act 1963, s. 14, and the Factories Act 1961, s. 60, both of which cover employers' duties in respect of the provision of seating. Seating should be of a suitable design and a footrest should be provided. The Manual Handling Operations Regulations 1992,² require employers to assess handling operations and to reduce the risk to employees to the lowest practicable level. Finally, there is the Workplace (Health and Safety and Welfare) Regulations 1992,³ which cover workstations and seating arrangements. All of these regulations cover display screen equipment in a tangential way. The one set of regulations which are specifically designed to provide for the health and safety of display screen equipment users, the Health and Safety (Display Screen Equipment) Regulations 1992, cannot be used directly to provide an action for damages. This is because the Regulations cover only criminal, as opposed to civil law obligations.

Manufacturers of display screen equipment are also under a common law duty to take reasonable care to avoid injury to users of their products. Under the Consumer Protection Act 1987, manufacturers are subject to an apparently strict liability regime. In an interesting recent development, two of the largest computer manufacturers have begun to label their keyboards with warnings of the risks of developing hand and wrist injuries and how to avoid them. This initiative appears to have been taken as a purely defensive measure because computer manufacturers in the US face an increasing number of claims for damages from firms whose employees have won compensation for RSI caused by the use of computer keyboards (Labour Research 1994). First indications in the US are that this legal strategy seems to be successful (Hazards in the Office 1995).

In addition to claims for compensation under the civil law for negligence and/or for breach of statutory duty, workers may also be able to claim state benefits. State benefits have the advantage of providing no-fault compensation based on the social insurance principle. In this case, insurance is in the form of employers' and employees' national insurance contributions. In the short term, statutory sick pay and sickness benefit are payable.⁴ For longer term sufferers, it is still possible to claim industrial disablement benefits,⁵ though industrial injury benefits were abolished as from 1983.⁶ Establishing that an occupational disease satisfies the legal test of 'arising out of and in the course of the employment' can be more difficult. One of the ways in which this can be facilitated is in the case of prescribed occupational diseases.⁷ Where the Minister has decided that a particular disease is work-related, and it has been added to the list of prescribed industrial diseases, benefit can be paid by the Department of Social Security to people suffering from the prescribed industrial

disease. Some forms of RSI have been prescribed in relation to specific occupations and therefore sufferers can claim some compensation for what is officially recognized as work-related illness. These are colloquially referred to as writer's cramp,⁸ beat hand,⁹ beat elbow,¹⁰ housemaid's knee¹¹ and tenosynovitis.¹²

Most strain injuries, however, are not prescribed diseases so that state compensation is not payable. The body which recommends the prescription of industrial diseases to the Secretary of State for Social Security, the Industrial Injuries Advisory Council, looked into work-related upper limb disorders as recently as 1992. Although it did recommend the prescription of carpal tunnel syndrome (arising out of the use of hand held vibrating tools) it did not feel able to recommend any further additions to the list of prescribed industrial diseases, observing that a dearth of good quality epidemiological studies had hampered its deliberations (Labour Research Department 1992).

In the UK, there have been a small number of successful cases establishing that employers must take reasonable measures to prevent RSI or face awards of damages against them. However, there has also been one notorious case in which a judge ruled that RSI was not of itself a condition known to medical science.¹³ This decision threw the law in the UK into a state of some confusion.

Reported decisions in this area have been, so far, few in number but rich in substance (Labour Research Department 1992). In 1989, a secretary working for the Midland Bank won £45,000 agreed damages in an out-of-court settlement. Her claim was based on the allegation that she contracted RSI following the refusal of her employer to

change the desk at which she typed. In 1990, three computer data clerks, working for the Inland Revenue, were awarded £107,500 in an out-of-court settlement. They claimed that they had developed RSI after their employer had failed to provide safe working conditions.

*McSherry v British Telecommunications*¹⁴ was the first case in which damages were awarded by a judge following a trial for injuries arising out of keyboard work. The plaintiffs (McSherry and Lodge) worked as data processing officers (DPOs) for British Telecom. In 1982 and 1983 they developed RSI. They brought a civil action against BT alleging that BT was negligent at common law and in breach of its statutory duty under section 14 of the Offices, Shops and Railway Premises Act 1963. The conditions under which they worked were quite extraordinary. Workers were paid according to a grading structure which depended on the number of keystrokes per hour they were able to achieve. The basic grade required 10,000 keystrokes per hour, the next grade 11,500, and the top grade 13,000. These rates had to be maintained over a given period of weeks to achieve the grade. Once the grade was achieved it was held for six months before further revisions took place. Even during that period the operators' keying rates were monitored and those who fell below their targets were interviewed by supervisory staff. In the High Court, Judge John Byrt QC found that: (1) by establishing a bonus structure which linked pay to keying speeds, BT encouraged workers to push themselves to the limits of their keying ability; (2) McSherry's symptoms were caused by a combination of the posture she adopted and the work itself. Her health symptoms were genuine and work-related. The typist had to work from a chair which was unsuitable because it could not be adjusted properly and was provided with a workstation which contained a panel which prevented a person of

average height from stretching her legs at the desk; (3) Mrs. Lodge had been provided with unsuitable seating for a long time, and that this, combined with her own poor posture, increased her vulnerability to RSI. Like McSherry she was also under pressure to maintain her key-stroking speeds. As a result of the above findings of fact the judge concluded:

In both cases I have found that each plaintiff suffered RSI as a result of her work, the condition being brought about by a repetitive stereotype movement of unsupported arms and hands. Further, I have found that the strain has been substantially added to by the strains which arose from the working systems in place and the ergonomics of the workstation, unsuitable chairs, and in the case of Mrs. Lodge the uncorrected bad habits on the part of the operator.

Judge Byrt turned next to whether BT should bear any legal liability for this state of affairs. He referred to the case of *Stokes v Guest, Keen and Nettlefold (Bolts and Nuts) Ltd.*¹⁵ where Swanwick J. reiterated the well-established legal principle that:

... the overall test is still the conduct of the reasonable and prudent employer taking a positive thought for the safety of his workers in the light of what he knows or ought to know ... where there is developing knowledge he must keep reasonably abreast of it and must not be too slow to apply it, and where he has in fact greater than average knowledge of the risks he may be thereby obliged to take more than average or standard precautions.

The difficulty in the British Telecommunications case, in the view of the judge, was that RSI was a branch of occupational medicine where the state of scientific and medical knowledge was still developing at the relevant time. The judge had to decide at what point the defendants knew, or ought to have known, of the risk of its employees developing RSI. In this respect, it was highly relevant that BT employed a team of professionals in occupational medicine and ergonomics working under the

direction of a Chief Medical Officer. As a result of hearing the evidence of two expert witnesses, the judge surveyed the available state of scientific knowledge about RSI.

In Britain, work which was carried out in the 1970s by both the Department of Employment and the Health and Safety Executive tended to concentrate on the link between tenosynovitis and blue collar work. However, by 1981 RSI had emerged as a problem for white collar civil servants. In 1980, the ergonomic aspects of VDUs were dealt with at a conference and in a book by Cakir *et al.*(1980). Given that from 1981 or so the state of knowledge about the relationship between workstation design, posture and muscular fatigue was available to those professionals who had access to the literature in their field, the question was whether BT were or, should have been, aware of it? This question the trial judge answered in the negative:

I am not satisfied that the defendants knew sufficient about the causal connection between RSI and keyboard work to warrant radical action in time to save either Mrs. Lodge or Mrs. McSherry, nor am I satisfied that they should be affected with constructive knowledge.”

The problem was that the women in question developed RSI in 1981 whereas the trial judge found that BT could not reasonably have known about the link between RSI and keyboard work at that date, given that the required knowledge was being disseminated to an expert audience for the first time between 1981 and 1984. However, the judge went on to find BT liable for failing to deal with the issue of poor posture:

I am satisfied that the defendants knew or ought to have known that postures of the sort adopted by Mrs. McSherry and Mrs. Lodge and their work colleagues were, in the course of time, likely to cause them musculoskeletal injury. Accordingly, in my judgment, they were under a continuing

responsibility to ensure that these postures were corrected so as to mitigate as best possible the risk that the plaintiffs might suffer injury.

In addition, the judge found that BT was in breach of the absolute statutory duty to provide proper seating pursuant to section 14 of the Offices, Shops and Railway Premises Act 1961. The breach of this duty contributed to the injuries of both women. They were each awarded damages of £6,000 for pain and suffering arising out of their injuries.

BT decided to appeal, but shortly before the case was to be heard an out-of-court settlement was agreed involving unspecified payments to eleven workers, including Mrs. Lodge and Mrs. McSherry, on the basis that the terms of the settlement were to be kept secret.

The *McSherry* case was followed by a contrary decision *Mughal v. Reuters Ltd.* In *Mughal*, Judge Prosser QC, sitting as a Deputy High Court judge, heard a claim in negligence brought by a journalist, backed by his trade union, the National Union of Journalists, against his employer. Mughal started work as a journalist for Reuters in 1987. He worked first of all spending about half his time using a keyboard and VDU. He was subsequently moved to the equities desk where he spent most of his time at a keyboard and VDU. It was then that Mughal alleged that he sustained pain and suffering and loss of earnings after developing RSI in his fingers, hands, arms, and shoulders resulting from his work with VDUs. He alleged that Reuters were negligent at common law in that they failed to provide him with adequate advice and equipment. Rafiq Mughal gave evidence that he had received no advice about posture, the need

for breaks away from the VDU nor about keeping his arms parallel to the keyboard, and the correct angle of his eyes to the screen.

Most of the evidence before Judge Prosser was medical, and most of it contradictory. Mughal was first diagnosed as having RSI by his general practitioner. This diagnosis was confirmed by a specialist who prescribed medication and physiotherapy, saying that there was no reason why Mughal should not make a full recovery. This prognosis was contradicted by a second specialist who again diagnosed RSI but took the view that the prospects for recovery were very poor. Mughal was then referred to a third consultant, who could find no clinical foundation for Mughal's complaints. Examinations were finally carried out by two consultants on behalf of Reuters who both rejected RSI as a medical diagnosis.

Litigation such as this frequently turns on the credibility of expert witnesses appearing for each side. In this case the judge was far more impressed with the expert witnesses appearing for the defence than those appearing for the plaintiff. Of Mughal's main witness Judge Prosser said: "I saw and heard Dr. Pearson and I frankly found him hesitant and unsure with almost every answer he gave. He did not fill me with confidence ... By the end of his evidence, I was no wiser as to what repetitive strain syndrome or injury was meant to be." Judge Prosser went on to say that he had read and re-read many articles on RSI and it was clear that there was a wide spectrum of debate and division. He believed that the mainstream view, and the view of those expert witnesses appearing for the defence, was that there were no clinical symptoms that could be pointed to as confirming that a patient had RSI as opposed to a specific

condition such as tenosynovitis. Judge Prosser was much more impressed by the expert witnesses for the employer:

The evidence of Mr. Campbell Semple and Mr. Mathewson has been the greatest help to me. Both knew the literature on the subject of RSI and ULD (upper limb disorder). Both were clear and convincing and authoritative. Essentially they each gave reasons for their opinions which to my mind were cogent and sound. Neither accepted the diagnosis of ULD or RSI as a distinct pathology.

Returning then to that condition called RSI that has sparked off much worldwide speculation, both Mr. Semple and Mr. Mathewson are clear in their own minds that RSI is in reality meaningless, in that it has no pathology. Indeed, both take the view that RSI has no place in the medical books and from my acquaintance with it in this case, I agree with them. Its use by doctors can only serve to confuse. Bearing in mind the vast amount of study and writing on this subject, it is an expression that can lead to all kinds of speculation, not only as to what a patient is actually suffering from, but as to the causation of it, thereby creating further confusion, particularly amongst employers, because of the uncertainties surrounding the condition called RSI and its apparent causation according to some people.

Finally what of the behavior of the employer? Reuters were found by the judge to be both prudent and careful: “How could an employer deal with the unknown or the uncertain in providing a safe system and place of work particularly when it was agreed that there was no one safe method of sitting or posture to satisfy different employees.”

How are the decisions in the *British Telecom* and *Reuters* cases to be reconciled?

Much of the perceived ‘problem’ is evidential as opposed to doctrinal. The London Hazards Centre (1993) notes that “...upwards of 30 terms are in common use to describe various forms of RSI”. RSI is only shorthand for a large number of different medical conditions sometimes referred to as work related upper limb disorders. It may be that what experts understand by the term RSI is so variable as to be ultimately meaningless.

This decision was initially seen as a setback for RSI sufferers. However its impact from a legal point of view is minimized, partly because decisions of the High Court do not provide a precedent for other cases, and partly, because since the Reuters decision in October 1993, unions have gone on to win significant amounts of money in out-of-court settlements in other cases.

In January 1994, a typist for the Inland Revenue won £79,000 in an out of court settlement.¹⁶ Kathleen Harris, who had been employed by the Inland Revenue for 15 years regularly typed between 13,000 and 16,000 keystrokes an hour under a work measurement system called "Treasury typing units". Her case related to; posture, inadequate work furniture; a lack of breaks from typing (she worked a seven and a half hour day, with just one break of half an hour for lunch); and to the supervisory system related to the "Treasury typing units". She was diagnosed as having lateral epicondylitis, a form of "tennis elbow", was forced to retire 12 years early. The size of the award reflected the loss of future earning power caused by early retirement on health grounds.

The award in the Harris case which was then a record out-of-court settlement was then beaten in another case involving the Inland Revenue. In early 1996, Mrs. Tovey, who had worked as an audio-typist since 1986 was categorised as 30 per cent disabled having been diagnosed in 1990 as suffering from tenosynovitis, a form of RSI. Her lawyer told The Times newspaper that the award would end doubts about the existence of RSI.¹⁷ The awards in Harris and Tovey led to the negotiation of a no-fault compensation scheme between the Inland Revenue and the Public Services, Taxation and Commerce Union.

If administrative regulation has failed to transform law and practice on VDUs, what of the common law? Whilst regulations are intended to modify outcomes and processes at work, the common law aims to compensate the worker and by doing so to regulate conduct and to deter employers from falling below the standard of the hypothetical reasonable employer (Hoffmann 1995). However this dual function can only be discharged if the plaintiff is able to satisfy the evidentiary requirements of an adversarial legal system based on the traditional concept of fault.

In order to succeed therefore the worker needs to be able to prove that s/he sustained an injury known to medical science (the medical question); that this was caused by and arose out of his or her work and that the employer was legally responsible for the injury (this latter is a question of law). In the case of Kathleen Harris she was diagnosed as having lateral epicondylitis, which is a recognized medical condition. Rafiq Mughal claimed to be suffering from diffuse RSI, a condition which according to the British Orthopedic Association and some doctors (Brookes 1994) does not exist. In *Mughal* the employer was able to succeed with the defence that RSI did not exist, and that, in any case, the employer had taken reasonable care. In the BT case the "no guilty knowledge" defence succeeded even though the employer was found to be negligent on the ground that BT could have foreseen that some injury was likely to arise out of the poor posture and "bizarre" seating arrangements.

What is shown by these cases, therefore, is that it is possible to bring and win claims based on what is commonly referred to as RSI or Work Related Upper Limb Disorders (WULDs), but that, in the view of Allen (1994) in order to stand a chance of success, claims have to be based on precise diagnosis of a known condition backed up by

assertively confident expert medical opinion. So far many of the cases have turned on the medical question. Turning to the legal question of employers' liability for the condition, in the light of the BT case, the "no guilty knowledge" defense should now have a short shelf life. Now it is established that the risk of WRULDS is common knowledge the clock has started to run against employers.

A general problem arising out of the above analysis is the incompatibility of having a relatively precise regulatory standard and relatively diffuse employers' liability standard. British jurisprudence has traditionally conceived breach of statutory duty as a separate tort from that of negligence. Furthermore British judges have adopted a timid approach to breach of statutory duty, basing it on the "presumed" intention of Parliament. In most cases the failure of Parliament to indicate whether a criminal or regulatory standard is capable of founding a civil remedy is deemed to be decisive of Parliament's intentions. North American judges have abandoned the presumed intention rule as a fiction, preferring fixed, statutory standards of a regulatory code to the less predictable standard of the "Reasonable Employer". Flemming (1992) describes this North American doctrine of statutory negligence thus:

For whenever a penal statute lays down a standard of conduct for the purpose of preventing injury or loss, non-compliance is at least admissible as *evidence* of negligence (breach of common law duty of care). Indeed, not infrequently the unexcused violation of a safety statute is treated as negligence per se, that is negligence as a matter of law. Non-observance of such a duty is then "statutorily equivalent to negligence" or, in short, "statutory negligence".

Conclusion

Keyboard work does have adverse health consequences. The issue is whether the law adequately protects workers' health. As we have seen there are problems with the

major legal techniques designed to set safe standards for keyboard work and compensate those workers whose health suffers as a result of occupational exposure to the hazards of work. The Display Screen Equipment Regulations are supposed to provide a technological and ergonomic framework for the health and safety of keyboard workers. If that fails, the civil law, is supposed to act as a safety net in compensating workers who have sustained injuries as a result of their occupation.

Problems with the DSE Regulations stem from the inherent limitations in the consensual, self-regulatory technique adopted in the UK. These problems are compounded by a situation where the underlying philosophy of agency tripartism is alien to the government of the day which prefers a social market, de-regulatory model to that of negotiated self-regulation (Baldwin and McCrudden 1987). In the case of the Display Screen Regulations we have seen that their drafting was more responsive to industry objections than those of employees' organisations. Furthermore their effectiveness was undermined, firstly, by the lack of any systematic inspection of premises by health and safety inspectors or trade union safety representatives; and, secondly, by the fact that the standards contained in the Regulations were not directly applicable in civil law and therefore unlikely to found an action in damages against non-compliant employers. In relation to the civil law, workers have managed to win compensation from employers through the courts even though they have been hampered, firstly in needing to prove actual physical injury in the face of some elements of the judiciary who believe that what we are witnessing may not be so much as an epidemic in job-related RSIs, but a socially constructed 'disease'; and, secondly, by the absence of unambiguous and specific legal standards.

In order to make progress in the future we must emphatically recognise that this is not an area which would benefit from the current trend towards deregulation.

Deregulation would merely shift the economic burden of paying for the costs of computerisation at work from employers, who are best able to carry the burden, to the workers' who are not. If anything the Regulations need to be strengthened and extended, and greater attention needs to be given to their enforcement. Finally, the vague common law standard of the 'reasonable employer' could be augmented and unified with that of the DSE Regulations if English judges adopted the North American approach of "statutory negligence". If this approach was adopted the 'standards' in the DSE Regulations could then be used as *evidence* in a tort claim as to what the Reasonable Employer would do.

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Notes

¹ Health and Safety (Display Screen Equipment) Regulations 1992, Statutory Instrument, No. 2792.

² Statutory Instrument No. 2793.

³ Statutory Instrument No. 3004.

⁴ Both provided by the Social Security and Housing Benefits Act 1982.

⁵ Subject to the provisions of the Social Security Act 1986.

⁶ Social Security and Housing Benefits Act 1982.

⁷ Social Security (Industrial Injuries) (Prescribed Diseases) Regulations 1985, S.I. 1985 No. 967.

⁸ Cramp of the hand or forearm due to repetitive movements (Prescribed disease or injury reference A4).

⁹ Subcutaneous cellulitis of the hand (A5).

¹⁰ Bursitis or subcutaneous cellulitis arising at or about the elbow due to severe or prolonged external friction or pressure at or about the elbow (A7).

¹¹ Bursitis or subcutaneous cellulitis arising at or about the knee due to severe or prolonged external friction or pressure at or about the knee (also known as Beat knee) (A6).

¹² Traumatic inflammation of the tendons of the hand or forearm or of the associated tendon sheaths (A8).

¹³ *Mughal v. Reuters Ltd.*, [1993] IRLR 571.

¹⁴ [1992] 3 Medical Law Review 29.

¹⁵ [1968] 1 WLR 1776.

¹⁶ Reported in *Health and safety Information Bulletin*, March 1994, p 2.

¹⁷ *The Times*, 30 January 1996.