

SHORT IMPACT ASSESSMENT – ART TOOL

Final Version 19/10/09

Description of the intervention:

To provide a tool to help assess repetitive tasks of the upper limbs and some of the common risk factors in work that contribute to the development of work-related upper limb disorders (WRULD). The tool is called the ART tool (Assessment of Repetitive Tasks). It is intended for use by Inspectors and duty holders and would be available with accompanying support material on the HSE website.

Objectives:

The ART tool was originally developed by HSE/HSL as a tool for use by regulatory inspectors. Part of this development process involved consultation with external ergonomists and consultants. A pilot exercise where a number of HSE and LA inspectors used the tool in the field was also carried out. The feedback from dutyholders and external ergonomists and consultants was very positive. Dutyholders wanted to keep copies of the tool to use for other parts of their processes and HSE has had a number of external queries about when the ART tool will be available on HSE's website. It was after this positive feedback that it was decided to develop the tool further for use by those other than regulators. This further development was necessary due to the technical nature of the tool. Inspectors who use the tool are provided with training. A training package for external users has been developed to accompany the ART tool.

The ART tool will assist the inspection and risk assessment process. It offers a structured approach that enables duty holders to see inspectors following a process. It is a good filter or screening tool that helps to identify the elements of the task that may be causing a problem.

The tool will help duty holders to identify risks, complete risk assessments and aid compliance with current legislation including Health and Safety at Work etc Act 1974, Management of Health and Safety at Work Regulations 1999, Provision and Use of Work Equipment Regulations 1998, and Manual Handling Operations Regulations 1992 (as amended).

The ART tool also helps improve understanding and communication of risk factors for repetitive tasks.

Calculation of costs:**a) How many people will be using the tool?**

The Manual handling Assessment Charts (MAC) tool provides the best benchmark for estimating the number of people using the tool as they both assist MSD risk assessment and are similar in design and appearance. In 2008/09, there were 61,000 downloads of the on-line MAC leaflet (INDG383

pdf document). We are still awaiting data on the number of MAC leaflets ordered from HSE Books.

The best estimate for the number of people using the ART tool will be up to 50% of the number of people using the MAC tool. The reasons for believing fewer people will use the ART tool are:

- repetitive tasks are not as common within UK industry; and
- there are currently no plans to promote this tool with large national initiatives.

Based upon this, we estimate that an on-line ART leaflet will receive around 30,000 downloads per year on average. Whilst this is a very rough assumption anyway, if data on the number of MAC leaflets ordered showed significant demand existed for hard copies, then this could suggest that the level of demand/downloads for the ART leaflet should be higher.

b) Familiarisation costs

We estimate it will take people about 3 hours to become familiar and trained in the use of ART. This would involve reading on-line training material (1 hour), practicing with on-line video case studies (1 hour) and trying the tool out at the work area (1 hour).

Given the estimate of 30 000 downloads per annum, it has been estimated that the familiarisation cost to business in the first year could be £542 000. Over 10 years and assuming the same rate of downloads is maintained this amounts to a present value around £4.7m¹

c) How many will have to do something and what are the costs of this?

The proportion of people that will actually have to do something as a result of using the tool is less clear. Some people will use the tool and do nothing, either because the tool confirms that their existing control measures are adequate or because they choose to ignore the findings of the tool.

Where users decide to do something as a result of using the tool, the scale of the ergonomics intervention will vary along with the costs. Some interventions that introduce automation (e.g. conveyors and material handling systems) would involve significant costs up front but a main driver for these interventions would be a clear return on the investment through greater production and/or reduced wage, sickness and compensation costs. At the other end of the scale, some interventions will only cost the employer time needed to implement them (e.g. introducing an improved sharpening regime for hand tools, relocating equipment and work pieces, or implementing a system of job rotation). The types of industry that may use the tool vary greatly as well from engineering, food manufacture, food processing and packaging across the board. Due to this variability it has not been possible to put a figure on the cost of compliance. Furthermore it is

¹ Discount rate is 3.5%, i.e. consistent with HMT Greenbook.

impossible to estimate without considerable research an appropriate counterfactual. It may for example be that the ART tool will simply speed up and enable compliance that would a) have happened anyway e.g. if employers carried out a risk assessment using existing HSE guidance and identified that additional control measures were necessary, i.e. using the tool may just have speeded up the arrival at this conclusion, or b) displace a less appropriate compliance effort, with associated cost. The resulting level of uncertainty around the *additional* cost of compliance versus an unknown counterfactual would be likely to render any estimated range of costs difficult .

The researchers found that many organisations do not carry out detailed measurements or study their operations in sufficient detail to analyse the costs and benefits of their ergonomics interventions. They are more concerned with solving ergonomics problems and getting on with business provided that the costs are within their budgets.

d) Cost to HSE

The one off cost of developing the tool for use by the public is £115 000. It is then estimated that the annual cost of maintaining the tool will be £7000 in the first year. This results in a present value over 10 years of £173,000.

e) Omissions

Unemployment caused by automation has not been possible to determine by this level of analysis, and would require extensive consultation.

NB Costs have been rounded up to the nearest thousand.

Impact on industry (including any effect on the Admin Burdens Baseline):

Repetitive tasks occur across many industry groups such as agriculture, food processing, engineering and manufacturing. There is already a clear legislative requirement for the risks from upper limb disorders to be identified and eliminated or adequately controlled. HSE guidance, HSG 60, Upper limb disorders in the workplace, outlines how this can be achieved and compliant organisations should already have tried to do this. However, even with this guidance, getting to the root of the problem can be difficult.

The aim of the ART tool is to make this process easier in a similar way to the MAC tool for manual handling.

For organisations that already carry out risk assessment, use of the ART tool may identify problem areas that they had previously missed, or simply confirm that their existing control measures are adequate. As described above, adequate control measures may vary greatly in cost; however, good ergonomics interventions may produce a return on investment through efficiency savings for some businesses.

The impact on non-compliant organisations would be negligible as they are unlikely to use the tool.

Benefits (quantified where possible):

Benefits

a) Health improvement

In 2007/08, an estimated 213,000 people in Britain who had worked in the last year believed they were suffering from a MSD mainly affecting the upper limbs and neck that was caused or made worse by their current or past work. Of these, over a third (81,000) of people first became aware of their WRULD in the previous 12 months. These Labour Force Survey results do not indicate the type of work activity believed to cause or aggravate the WRULD (i.e. whether the activity was a manual task or related to the use of Display Screen Equipment). As the ART tool is not appropriate for DSE assessment, the proportion of self-reported WRULDs that the ART tool could address is unclear.

However, voluntary reporting of WRULD by specialist doctors ([THORM12 for 2005 – 2007](#)) suggests that at least 65% of cases reported to them were associated with manual tasks that the ART tool could be used to assess (about 20% of cases are related to keyboard or driving tasks which the ART tool cannot assess, and 15% of cases are unspecified). These statistics could be misleading though because some occupations are much more likely to have access to occupational physicians than others.

As the above demonstrates, it is simply not clear how many cases of WRULD would be avoided. Arguably, the use of the MAC tool, together with 3 national campaigns (2005 – 2007) on the topic of manual handling and better backs, has had little impact on the headline statistics for self-reported work-related back pain. However, inspectors, practitioners and organisations can recount an endless number of anecdotes and case studies where the use of the MAC tool has had a positive benefit, helping to improve knowledge, understanding, communication, assessment and work practices on the topic of manual handling. We believe that these other benefits will be the main strength and outcome from use of the ART tool. These are discussed further below.

b) Other benefits

As was mentioned earlier, even with the current guidance that HSE has produced, it can be difficult for dutyholders to carry out suitable and sufficient risk assessment for WRULD and to identify the part of the task that may be causing their employees problems. This tool would assist in this task and make it easier for them to recognise whether or not their organisation had achieved compliance. This could result in time savings and could avert the need for the use of consultants.

Case studies have shown that good ergonomics interventions can achieve positive outcomes for productivity as well as the health and well being of the workforce.

MSD assessment tools such as ART are important because they encourage employers to look at the work in detail and involve and consult with the workforce. In doing so, employers often gain insights into inefficiencies in the task that had previously been unrecorded. By addressing these inefficiencies, a return on their investment may be realised, provided that the organisation collects sufficient information for their cost benefit analysis. It must be stressed that not all organisations who implement changes will realise such benefits.

To develop good ergonomics interventions, it is important that duty holders apply high-quality and usable tools that are suitable for the relevant MSD risks. A common message from ergonomics consultants involved in the development of ART is that duty holders often apply the wrong tools for the task or user. This results in an incorrect assessment of the level of risk and often leads duty holders toward the wrong intervention – a waste of much time and resource. For example, it has been reported that many companies inappropriately use the MAC tool to assess all manually intensive tasks, thereby underestimating the level of risk posed by low load/high frequency tasks. The ART tool will fill a significant gap in the current MSD risk assessment tools available, help improve users understanding of risk factors for repetitive tasks, and thereby plan better ergonomics interventions.

Consultation: WERG, OPSTD, Corporate Specialist Division, HSL, CSAG/CCID PCT

Chief Economist's comments: This short IA incorporates comments from me and Economic Analysis Unit colleagues. I am satisfied that it makes appropriate use of evidence and analysis.

Recommendation: That based on proportionality, a full impact assessment is not produced.

Signed:...Alan Spence..... **Date:** ...19 October 2009..
HSE's Chief Economist

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