

# MAINSTREAM RESEARCH NEWS



THE NEWSLETTER FOR HSE'S S&I PROGRAMME  
**ISSUE 21**

**JULY 2002**

## □ INTRODUCTION OF A SINGLE PUBLICATION SERIES FOR HSE'S RESEARCH REPORTS

Research projects commissioned by HSE culminate, wherever possible, in the production of a published report, documenting the work undertaken during the course of the project, the findings and the conclusions or recommendations drawn. For many years there have been two publication series produced by HSE: Contract Research Reports (CRRs) and Offshore Technology (OT) Reports. Since 2000, the back-catalogue and new reports in both series have been made available for free download from the HSE website site at the following URL: <http://www.hse.gov.uk/research/index.htm> and hard copies have continued to be available for purchase from [HSE Books](#).

In addition to CRR and OT reports, HSE's [Health and Safety Laboratory \(HSL\)](#) have produced a series of project reports for HSE-funded work they have carried out. Over the years, these reports have been recorded on HSEline and those with an open status have been made available in hard copy format from HSE's Information Centres. HSL have recently reviewed their back-catalogue of reports and work is currently

ongoing to make these reports available on the [HSE website](#). A new single publication series for research reports has been introduced from 10 June 2002. Entitled the 'Research Report' (RR) series, all HSE's research reports will now be published as an RR, irrespective of whether a report would previously have been produced as a CRR, OT or an HSL report.

The new reports will soon be made available on HSE's website at the following URL: <http://www.hse.gov.uk/research/index.htm> Hard copies will also be available for purchase from HSE Books. A new search engine on the HSE website and the introduction of a comprehensive [subject index](#) have now made it much easier to locate a particular report.

**For further information contact:  
Mr S Armitage (0114 289 2647)  
email:  
[simon.armitage@hse.gsi.gov.uk](mailto:simon.armitage@hse.gsi.gov.uk)**

### *In this Issue...*

#### **What's new?**

**Pages 2 & 3**

#### **Examples of Recently Completed Projects**

**Pages 4 - 7**

#### **Project Listings: Newly Commissioned and Completed Projects. Recent Publications.**

**Pages 8 - 12**

Please forward any comments on this issue or items for inclusion in future issues to:  
**Simon Armitage  
RSU Sheffield  
0114 289 2647**

## □ WHAT'S NEW?

### □ TO IDENTIFY HOW COGNITIVE AND PERCEPTUAL FACTORS INFLUENCE THE EXPRESSION AND REPORTING OF WORK-RELATED STRESS

(Contractor: University of Nottingham)

Much is known about the causes, consequences and alleviation of stress problems in working populations. What is less well-known is the range of factors which determine how stress responses/effects will be reported in individual cases. The presence of such factors is potentially very important because they may modify (in different groups or over time, as with back pain) the precise way in which symptoms, and other aspects of the stress process, are reported to clinicians, epidemiologists and in workplace risk assessment surveys. Important influences are likely to include attributional processes (is work the cause?) and 'lay' beliefs, dispositional biases (such as negative affectivity) and more psychobiological factors such as somatic perception. It is critical to know and understand how these mechanisms modify symptom reporting in self-reported, work-related illness (SWI) surveys and others with similar methodologies.

This research will enable HSE to fully evaluate the results of SWI and similar surveys of the prevalence of work-related stress as part of the Health and Safety Commission's Work Related Stress Priority Programme.

**For further information contact:**

**Dr C Mackay (0151 951 4565)**

**email: colin.mackay@hse.gsi.gov.uk**

### □ PASSENGER BEHAVIOUR ON AMUSEMENT RIDES

(Contractor: Health and Safety Laboratory)

Over recent years, several major incidents on amusement rides have featured passenger behaviour as a main contributor. HSE's Review of Fairground Safety highlighted the need for research in this area. There is a belief that passenger behaviour is changing with time, but at present this cannot be substantiated as there is no baseline.

Attempts have been made to use existing research on child behaviour to inform the design of amusement ride passenger containment systems. However, most of the existing knowledge does not readily transfer to the amusement ride environment. Research is required to establish the extent of current knowledge in this area and its limitations for application to the design of amusement ride passenger containment systems.

The aim of this project is to produce a catalogue of commonly observed passenger behaviour traits from empirical data gathered at parks and fairs. It is intended that the catalogue will then be used in order to: i) provide a basis for monitoring future changes in passenger behaviour; ii) inform future containment system design decisions; iii) assist in determining risk control strategies other than ride design; and iv) assist with accident investigation.

**For further information contact:**

**Mr G Howat (0141 275 3000)**

**email: gavin.howat@hse.gsi.gov.uk**

### □ THE EFFECTIVENESS OF BARRIER CREAMS IN THE WORKPLACE

(Contractor: Institute of Occupational Health)

Irritant contact dermatitis is the commonest type of dermatitis and may affect up to 100% of exposed workers in certain occupations. The central factor in its development is repeated exposure to irritants leading to damage of the stratum corneum (layer of skin), and hence impairment of the skin barrier function. Theoretically, skin barrier creams imply reduction of the penetration of hazardous material into, and absorption through, the skin. Although *in-vivo* studies using both animal and human models have been conducted to investigate the efficiency of barrier creams, the biophysical techniques used have not been tested in the field to assess their efficiency under actual work conditions, where workers may have multiple irritant exposure at varying concentrations under varying environmental conditions.

This work will provide workplace validation of data reports in the literature and the development of a standardised field methodology to measure the effectiveness of barrier creams in real workplace conditions. This will aid future guidance on this topic.

**For further information contact:**

**Dr R Rawbone (0151 951 4555). email: roger.rawbone@hse.gsi.gov.uk**

## □ WHAT'S NEW?

### □ A STUDY TO HELP HSE SEGMENT, UNDERSTAND AND PRIORITISE THE NEEDS AND MOTIVES OF STAKEHOLDERS

(Contractor: Radical Group Ltd)

The concept of stakeholders has gained currency over recent years as the complex web of relationships that impact on an organisation has been more fully recognised. An organisation's success is not governed simply by the quality of what it makes or does, but crucially by the perceptions and behaviour of identifiable groups important to its business process. This is particularly the case in service organisations, like HSE, where values (the way we do things) are as important as attributes (what we do).

Stakeholders, e.g. staff, ministers, partners, intermediaries, opinion formers, etc, all have the ability to accelerate or undermine success. Researching these stakeholders is an illuminating and powerful part of strategy development. The more specifically HSE understands the perceptions, wants and needs of its various stakeholders the better it will be able to see how these groups and individuals impact upon HSE and how HSE may influence them.

Taking into account previous work on stakeholder perceptions, the aim of this project is to establish the exact nature and composition of stakeholder groups. Interviews will then be undertaken with a sample using an agreed discussion guide. The results from the study will be used to inform HSE's senior management of the desired changes key stakeholders would like to see implemented in HSE, and will be used to shape the next stage of HSE's Change Programme.

**For further information contact:**

**Mr S Woolley (020 7717 6982). email: [steve.woolley@hse.gsi.gov.uk](mailto:steve.woolley@hse.gsi.gov.uk)**

### □ IGNITION AND FLAME SPREAD DUE TO GRINDING SPARKS ON WORK CLOTHING

(Contractor: Buildings Research Establishment)

Every year, accidents and injuries are recorded where sparks from grinding operations have ignited workers' clothing. The ease of ignition and rate of flame spread for typical work clothing is not known. Although standards exist for ignition tests of textiles when used to cover furniture, no standard method of determining ignition or flame spread is currently available to compare one type of clothing with another. This information is required if advice in the form of guidance is to be produced, which if applied properly will bring about a reduction in the number of accidents and injuries.

This project will develop test procedures to allow the measurement of both the relative ease of ignition and rate of flame spread following ignition of typical work clothing by grinding sparks. The procedures developed will then be applied to a range of commonly used work clothes in order to produce tables of comprehensive data.

**For further information contact:**

**Mr A Tyldesley (0151 951 4769)**

**email: [alan.tyldesley@hse.gsi.gov.uk](mailto:alan.tyldesley@hse.gsi.gov.uk)**

### □ ASSESSMENT OF HAND-ARM VIBRATION RISKS IN WOODWORKING

(Contractor: Health and Safety Laboratory)

A variety of hand-fed machinery and handheld power tools are used in the woodworking industry. However, there is little industry specific data and information to allow the relative hand-arm vibration risks within the industry to be accurately assessed.

Several studies have highlighted woodworking - or more often carpentry and joinery - as a high risk industry. However, this would appear to be based largely on the risk from one or two types of hand tool that might be commonly used by carpenters at work on construction sites, but that are rarely used in a woodworking factory.

This project is intended to look at the true woodworking industry, rather than at occasional users of power tools in other industry sectors (e.g. construction). The findings of the research will be used to help prioritise risk reduction strategies for hand-arm vibration injuries within woodworking and may also be used as a basis for published industry specific guidance.

**For further information contact:**

**Mr M Lee (01159 712800).**

**email: [martin.lee@hse.gsi.gov.uk](mailto:martin.lee@hse.gsi.gov.uk)**

## □ EXAMPLES OF RECENTLY COMPLETED PROJECTS

### □ ASSESSMENT OF METHODS TO DETECT LEAKS IN THE CASING OF ROOM SEALED APPLIANCES - FIELD TRIALS

(Contractor: Advantica Technologies Ltd)

A previous project, reported in [CRR 319](#), considered the various methods available for detecting leaks in the seals of fan pressurised central heating boilers. This subsequent phase of the work was aimed at prescribing a suitable procedure for CORGI registered engineers to follow when assessing leakage on such appliances. A series of experiments was performed on a type of boiler that has been involved in several incidents associated with the escape of carbon monoxide into a property. The methods for detecting leaks were examined by twenty CORGI registered engineers with experience in servicing central heating boilers, who were then asked to provide their comments and observations in applying the methods. The following were found to have the potential to detect leaks: a visual and tactile inspection of the case and seal; smoke tubes and smoke matches to produce smoke for flow visualisation; and ordinary matches, a lighter or wax taper to produce a flame for flow visualisation. A flue gas analyser could not be relied upon to detect leaks and was not recommended. The report from this work will be published shortly.

**For further information contact:**

**Mr A Jones (0151 951 3273). email: [alyn.jones@hse.gsi.gov.uk](mailto:alyn.jones@hse.gsi.gov.uk)**

### □ CHANGING BUSINESS BEHAVIOUR - WOULD BEARING THE COST OF HEALTH AND SAFETY PERFORMANCE MAKE A DIFFERENCE?

(Contractor: Greenstreet Berman)

Originating from a proposal submitted in response to the 2000 Competition of Ideas exercise, this work addressed HSC's Action Point 5 in 'Revitalising Health and Safety', i.e. involving the insurance industry more closely in HSC's work and establishing the scope for a closer correlation between employers' insurance premiums and their health and safety performance.

The first stage was a literature survey to collate and review existing knowledge and research on the financial motivators for improving health and safety performance. A review of schemes in other countries for transferring the costs of poor health and safety onto employers, including hospital and other welfare costs that are borne by the state in the UK, was then undertaken. This stage involved the analysis of four systems, with specific consideration of how they attempted to relate costs to firms' performance. The results were combined with those of the literature search to develop a framework for a survey of UK insurers and businesses and to draw out lessons learned for the UK. The survey of the UK insurance industry sought views on the potential approaches available to make businesses shoulder directly a greater proportion of the costs of poor health and safety performance. Views were sought on the feasibility of different approaches, the likelihood that they would change business behaviour and the viability of the options for change. The final stage of the field work utilised a postal survey of organisations to obtain self-reported perceptions of how potential changes to insurance arrangements would impact on their view of the costs of health and safety and their motivation to make improvements.

Considering the results, from the review of previous research it was concluded that the cost of occupational ill-health and injuries and the cost of employers' liability insurance does not motivate UK employers. Rehabilitation was also seen to have a relatively low status. In contrast, workers' compensation arrangements in other countries were found to positively motivate health and safety management, together with rehabilitation in some cases. This was achieved by: integrating rehabilitation into the compensation process; including a greater proportion of ill-health and injury costs into a single, no fault insurance scheme; and linking premiums to performance. Examples of innovative ways of helping smaller firms were also identified. UK insurers indicated, in spite of examples of good practice, that they were constrained by the Employers' Liability Regulations and competitive pressures. UK employers, notwithstanding some reservations, indicated that they would be encouraged to improve standards of health and safety and rehabilitation in response to new arrangements. The report from this work will be published in the near future.

**For further information contact:**

**Mr S Vinton (020 7717 6954). email: [steve.vinton@hse.gsi.gov.uk](mailto:steve.vinton@hse.gsi.gov.uk)**

## □ EXAMPLES OF RECENTLY COMPLETED PROJECTS

### □ EXPOSURE TO PESTICIDE RESIDUES ON AGRICULTURAL SPRAYING EQUIPMENT

(Contractor: Cranfield University with the Health and Safety Laboratory)

Pesticide residues may be present on the external surfaces of pesticide application equipment following its use. Workers subsequently using that equipment for other purposes, or maintaining it, may then be exposed to these residues. The risk to workers cannot be assessed without knowing the levels of residues present. The aim of this study was to quantify typical pesticide residues on agricultural sprayers and to assess potential worker exposure.

Thirteen farms were visited on two occasions. Swab samples were taken from the nozzles, boom, spray tank, door, windscreen, rear window and mudguards of the equipment. Cotton glove samples were also taken, representing possible exposure to workers whilst entering and working in the cab, during general contact with the external surface of the sprayer and during maintenance. Supporting information was collected on pesticide usage and the nitrile gloves used to handle pesticide concentrates were collected to analyse residues contained on the insides.

Samples were analysed for the following pesticides: azoxystrobin, carbendazim, chlorothalonil, cyanazine, cypermethrin, epoxiconazole, flusilazole, isoproturon, kresoxim-methyl, metazachlor, pendimethalin, pirimicarb and tebuconazole.

The levels of pesticide found on the equipment varied widely (from < limit of detection to >1000 mg m<sup>-2</sup>). Highest doses were observed on the boom, nozzles, and, to a lesser extent, the spray tank.

With the tractor, highest doses were found on the mudguards. Isoproturon had the highest number of detections above 1000 mg m<sup>-2</sup> on the delivery system and 10 mg m<sup>-2</sup> on the tractor body. This compound was also the most commonly used pesticide by weight. There was a correlation between the quantity of compound used and the level of pesticide detected on the delivery system, but there was no significant factor influencing pesticide quantities on the tractor body. Levels detected on the cotton glove samples were reported as an equivalent number of acceptable daily intakes (ADIs). 17% contained residues that equated to more than one ADI. Sampling inside the farmers' nitrile gloves resulted in the detection of pesticides in all cases. One pair contained the equivalent of 17 ADIs. Few farmers had a regular regime for cleaning pesticide application equipment. Once the equipment was washed it was considered to be clean by the operator.

Pesticide residues were not perceived to be of concern. This study demonstrated that pesticide residues were commonly detected on the external surfaces of agricultural spray equipment, despite undergoing some form of washing, and that the levels of residue may be of concern to human health. The report from this work has been published as [CRR 440](#).

**For further information contact:**

**Dr A Phillips (0151 951 4753). email: [andy.phillips@hse.gsi.gov.uk](mailto:andy.phillips@hse.gsi.gov.uk)**

### □ A STUDY OF THE PROVISION OF HEALTH AND SAFETY INFORMATION IN THE ANNUAL REPORTS OF THE TOP UK COMPANIES

(Contractor: System Concepts Ltd)

The aims of this study were: to determine the current level of reporting of health and safety issues in the annual reports of the top UK companies; to determine the quality of this information; and to compare current levels of reporting with those found in 1995. Of the top 350 companies contacted, 282 were found to produce an annual report. Of these, 227 reports were obtained and examined.

Less than half (107) were found to contain health and safety related information and the quality of reporting varied greatly. Many companies provided high quality information and dedicated an entire section of their report to health and safety. Others provided only low quality information, such as a statement indicating that the company met the requirements of the Health and Safety at Work Act 1974. The study identified a slight increase since 1995 in the number of companies that included health and safety information in their annual reports. In 1995, the figure was 47% of (FTSE 100) companies compared with 60% currently (FTSE 100 companies who are also UK top 350 constituents). This report has been published as [CRR 446](#).

**For further information contact:**

**Mr S Vinton (020 7717 6954). email: [steve.vinton@hse.gsi.gov.uk](mailto:steve.vinton@hse.gsi.gov.uk)**

## □ EXAMPLES OF RECENTLY COMPLETED PROJECTS

### □ HUMAN FACTORS ASPECTS OF REMOTE OPERATION IN PROCESS PLANTS

(Contractors: Human Reliability Associates)

This work resulted from a successful proposal submitted in response to the 1999 Competition of Ideas exercise. The research consisted of two separate but complementary stages: a review of the literature relevant to this topic area, and a survey of the current state of remote operation in process plants based on the findings of the literature review. The survey, although not of sufficient scale to produce statistically significant results, was very successful in establishing trends in industry and collecting anecdotal evidence of benefits and problems. In particular, it demonstrated that the vast majority of process plants surveyed were remotely operated and that many were planning, or had recently completed, further increases to the degree of remote operation at their sites. A striking finding was that the opportunity had often been taken to carry out several changes simultaneously. For example, centralisation, de-manning, upgrading of control systems and increased automation. The main reasons given for increasing the degree of remote operation were: to improve efficiency/productivity, to keep pace with technology and to satisfy regulatory requirements. The effects of these changes were wide ranging. For example, Control Room Operators were often expected to take more responsibility following an increase in remote operation. However, training provided tended to focus on the process and control system rather than on human issues such as communication and problem solving. The introduction of remote operation had significantly altered the style of communication used in most companies. Opportunities for face to face communication between Control Room Operators and Field Operators tended to reduce. There was a corresponding increase in radio communication. Information received from instruments had also changed, electronic displays replaced analogue and the amount of local gauges and displays reduced. Direct perception (sound, smell, sight) was not considered to be an important source of information. Very few organisations surveyed could provide more than anecdotal evidence regarding improvements in safety, productivity, efficiency or quality resulting from changes to work organisation. This was surprising in view of the scale of investment that the changes required. The main benefits were seen to be in regulatory compliance and reduced manpower costs. The lack of hard evidence of benefits suggests that the effects of changes are not being closely monitored and this provokes some concern about change management strategies. However, none of the companies surveyed implicated remote operation as a partial or main cause of a major safety incident or process upset. The report from this work has been published as [CRR 432](#).

**For further information contact:**

**Mr J Wilkinson (0151 951 3041). email: [john.wilkinson@hse.gsi.gov.uk](mailto:john.wilkinson@hse.gsi.gov.uk)**

### □ INTERVENTIONS TO CONTROL STRESS AT WORK IN HOSPITAL STAFF

(Contractor: University of Nottingham)

Risk management is a different kind of approach to the one that is more traditionally associated with stress management. This work has considered the application of a risk management approach, using the risk management cycle (from risk assessment through to the evaluation of problem-solving interventions), in dealing with the problem of work-related stress among hospital staff.

Five case studies carried out within three British National Health Service (NHS) trusts were carried out. The case studies included both direct care and non-direct care staff groups from various hospital-based settings. These groups presented with different problems and their organisations attempted to address these problems through a variety of interventions. The risk management process was used to gather data on the problems and to guide the design, implementation and evaluation of the interventions. The data gathered throughout the case studies are used to illustrate the methodology used and a commentary is also provided on the usefulness of the risk management approach in the hospital setting.

The report from this work has been published as [CRR 435](#).

**For further information contact:**

**Ms S Williams (01582 444200). email: [sally.williams@hse.gsi.gov.uk](mailto:sally.williams@hse.gsi.gov.uk)**

## □ EXAMPLES OF RECENTLY COMPLETED PROJECTS

### □ SURVEY OF THE USE OF OCCUPATIONAL HEALTH SUPPORT

(Contractor: Institute of Occupational Medicine)

'Securing Health Together' aims to achieve a number of targets in relation to reducing ill health caused by work activity and accidents by 2010. Part of this strategy includes obtaining essential knowledge on current occupational health (OH) provision, and ensuring that appropriate support mechanisms are in place to deliver OH support. HSC/E has set an indicative target to increase the proportion of employers using OH support by 10% by 2003. This study was set up to establish baselines by estimating the proportion of employers who currently use OH support, and to provide a breakdown of the results by company size, sector, Government region, and by the type of OH support provided. The study involved a telephone survey of 4950 randomly selected companies of varying size, sector and geographical location. Fifty face to face interviews were then conducted as a follow up with a representative sample of companies who had introduced or had access to different types of occupational health support.

In considering the results of the survey, if a definition of OH support is used that includes: hazard identification, risk management and provision of information, then approximately 44% of participating companies fulfilled this definition, equivalent to 15% (147957 companies) of all UK companies after adjustment for the UK-wide distribution of companies by size and sector. If a more stringent definition of OH support was used, including the three parameters above plus modifying work activities, providing training on occupational health-related issues, measuring workplace hazards and monitoring trends in health, then 19% of companies fulfilled this definition, equivalent to 3% (31623 companies) of all UK companies. Hazard identification was the most likely form of OH support to be undertaken, followed by risk management. Concern for the well-being of employees was the main reason cited for having OH support.

OH often takes second place within health and safety and has no distinct identity. In many instances, no specific budget was found to be allocated for OH support. Formal evaluation of the costs and benefits of OH support was limited, but was most likely to occur in large companies spending most of OH support. Across all sectors, there was a recognised lack of knowledge about how to deal with health issues. Companies considered that OH support could be improved by providing sector specific advice on best practice, legislative requirements and reducing paperwork associated with occupational health and safety. The report from this work has been published as [CRR 445](#).

**For further information contact:**

**Ms M Smith (020 7717 6897). email: [monica.smith@hse.gsi.gov.uk](mailto:monica.smith@hse.gsi.gov.uk)**

### □ THE FUTURE HEALTH AND SAFETY IMPLICATIONS OF GLOBAL POSITIONING SATELLITE (GPS) AND MACHINE AUTOMATION

(Contractor: QinetiQ)

The purpose of this study was to examine the state of relevant technologies in GPS and mobile machine automation, explore their growth potential, use and future development and assess health and safety pros and cons in different operating environments. The study was conducted as seven work packages designed to gather the necessary data, analyse the findings, draw conclusions and make recommendations for the design, development and use of vehicle systems.

The study found that fitting GPS technologies to vehicles (e.g. dumpers, tractor shovels, fork lifts, etc) working in environments such as quarries, construction sites and open cast mines may be of benefit in reducing the occurrence of accidents. All of the vehicles considered were found to perform at least one function that could be made safer with GPS/automation technologies.

The study also concluded that GPS should not be used alone, as it was found to have shortcomings that needed to be addressed through the use of extra technology.

The implementation of such technology is likely to follow a gradual introduction time. Issues surrounding this introduction have been highlighted in the report from this work (published as [CRR 442](#)) and a process for assessing the safety of vehicle systems has been documented.

**For further information contact:**

**Mr G Male (0151 951 4034) email: [gil.male@hse.gsi.gov.uk](mailto:gil.male@hse.gsi.gov.uk)**

## □ PROJECT LISTING

NEWLY COMMISSIONED PROJECTS: APRIL - JUNE 2002		
Project No.	Project Title	Project Officer
Fire and Explosion		
R02.062	Outstanding safety questions: The use of gas turbines for power generation.	Mr R Santon. Tel: 0151 951 4000 roger.santon@hse.gsi.gov.uk
R04.088	Ignition and flame spread due to grinding sparks on work clothing.	Mr A Tyldesley. Tel: 0151 951 4769 alan.tyldesley@hse.gsi.gov.uk
R05.107	Determining the potential/accidental explosion hazards from ammonium nitrate: Phase 1 - Literature review and analysis.	Dr S Welsh. Tel: 0151 951 4784 shaun.welsh@hse.gsi.gov.uk
R05.108	Determination of the rate of ammonia production in the electrolysis of silver nitrate.	Dr S Welsh. Tel: 0151 951 4784 shaun.welsh@hse.gsi.gov.uk
R05.109	Revision of the safety report assessment guide for explosives.	Dr R Merrifield. Tel: 0151 951 4804. roy.merrifield@hse.gsi.gov.uk
Engineering		
R38.035	Learning from incidents involving electrical/electronic/programmable electronic (E/E/PE) safety-related systems.	Mr M Bowell. Tel: 0151 951 4064 mark.bowell@hse.gsi.gov.uk
R38.037	Control and protective systems: Assessment methodology.	Mr D Wilson. Tel: 0151 951 4969 dave.wilson@hse.gsi.gov.uk
Work Environment		
R45.078	Lowering action levels for hand arm vibration.	Mr C Nelson. Tel: 0151 951 4826 chris.nelson@hse.gsi.gov.uk
R48.118	Developing a method to detect residual virus following disinfectant treatment.	Dr P Seechurn. Tel: 0151 951 3326. patrick.seechurn@hse.gsi.gov.uk
R48.119	The use of RIDDOR reports as an additional intelligence source in construction.	Mr T Allan. Tel: 020 7556 2100 trevor.allan@hse.gsi.gov.uk
Occupational Health		
R51.225	Procurement of welding fume exposure data - Phase 1.	Ms C Northage. Tel 0151 951 4464. christine.northage@hse.gis.gov.uk
R51.231	The effectiveness of barrier creams in the workplace.	Dr R Rycroft. Tel: 020 7717 6994. richard.rycroft@hse.gsi.gov.uk
R51.239	New requirements for the transport of dangerous goods by rail.	Mr N Mawhinney. Tel: 020 7717 6859 nick.mawhinney@hse.gsi.gov.uk
R52.145	Evaluation of HSC's ACOP and guidance: 'Legionnaires disease: The control of legionella bacteria in water systems'.	Mrs L Shepherd. Tel: 020 7717 6266 lorraine.shepherd@hse.gsi.gov.uk
R53.189	Assessment of hand-arm vibration risks in woodworking.	Mr M Lee. Tel: 01159 712826 martin.lee@hse.gsi.gov.uk
R54.084	To identify how cognitive and perceptual factors influence the expression and reporting of work-related stress.	Dr C Mackay. Tel: 0151 951 4565. colin.mackay@hse.gsi.gov.uk
R55.085	The role of inequality and musculoskeletal health.	Mr L Morris. Tel: 0151 951 5708 len.morris@hse.gsi.gov.uk
R55.096	Low back pain in drivers: Roles of whole-body vibration (WBV), posture and manual materials handling.	Mr P Brereton. Tel: 0151 951 4824. paul.brereton@hse.gsi.gov.uk
R55.097	Further development of the usability and validity of the quick exposure check (QEC).	Mr C Quarrie. Tel: 0151 951 3052 chris.quarrie@hse.gsi.gov.uk
R58.062	The profile of patients' occupational health in primary care	Mr D Lewis. Tel: 020 7717 6290 david.lewis@hse.gsi.gov.uk
Behavioural and Social Sciences		
R60.001	Developing the statistical analysis of the Occupational Disease Intelligence Network (ODIN).	Dr J Hodgson. Tel: 0151 951 4566 john.hodgson@hse.gsi.gov.uk
R64.082	Review of the practical implementation of the Use of Work Equipment Directive (UWED) and the Amended Directive (AUWED).	Ms A Stevens. Tel: 020 7717 6842. amanda.stevens@hse.gsi.gov.uk
R64.091	Evaluation and further development of the HELA National Training Co-ordination Website.	Ms M Buchan. Tel: 020 7717 6441. moira.buchan@hse.gsi.gov.uk
R67.157	Focused intervention strategies targeting occupational health within SMEs.	Mr P Kelly. Tel: 0151 951 4070 peter.kelly@hse.gsi.gov.uk
R67.158	Passenger behaviour on amusement rides.	Mr G Howat. Tel: 0141 275 3000 gavin.howat@hse.gsi.gov.uk
R68.075	Investigation into health and safety planning in construction.	Mr T Allan. Tel: 020 7556 2100 trevor.allan@hse.gsi.gov.uk

## □ PROJECT LISTING

<b>NEWLY COMMISSIONED PROJECTS: APRIL - JUNE 2002</b>		
<b>Project No.</b>	<b>Project Title</b>	<b>Project Officer</b>
Behavioural and Social Sciences (cont.)		
R68.077	A study to help HSE segment, understand and prioritise the needs and motives of stakeholders.	Mr S Woolley. Tel: 020 7717 6982 steve.woolley@hse.gsi.gov.uk
Risk Assessment		
R72.074	Sensitivities and uncertainties in Transco's mains replacement prioritisation model and proposals for a network-based mains replacement programme.	Mr F Perkins. Tel: 01159 712800 frank.perkins@hse.gsi.gov.uk
R72.075	Classification of railway schemes. R11 revised approvals process (a).	Ms T Davies. Tel: 020 7717 6620 toyin.davies@hse.gsi.gov.uk
R72.076	Classification of railway schemes. R11 revised approvals process (b).	Ms T Davies. Tel: 020 7717 6620 toyin.davies@hse.gsi.gov.uk
Offshore		
4007	Structural reliability framework for FPSO's/FSU's.	Mr C De Souza. Tel: 020 7717 6776 conrad.de_souza@hse.gsi.gov.uk
4009	Re-evaluation of fatigue curves for flush ground girth welds.	Mr A Stacey. Tel: 020 7717 6774 alex.stacey@hse.gsi.gov.uk
4010	Cost effective structural monitoring - Phase IIB. Performance considerations.	Mr M Birkinshaw. Tel: 020 7717 6775 malcolm.birkinshaw@hse.gsi.gov.uk
4011	Summary report on the ICON and EDICS projects.	Mr A Stacey. Tel: 020 7717 6774 alex.stacey@hse.gsi.gov.uk
4012	Offshore loading of shuttle tankers with respect to the safety of human life, the environment and the frequency of collision.	Mr M English. Tel: 020 7717 6783 max.english@hse.gsi.gov.uk
4014	The mutual misconceptions of designers and operators.	Mr B Miles. Tel: 020 7717 6685 bob.miles@hse.gsi.gov.uk
4015	ISHM support for testing.	Mr J MacFarlane. Tel: 01224 252500 jim.macfarlane@hse.gsi.gov.uk
4016	Life long corrosion fatigue of high strength steels.	Mr A Stacey. Tel: 020 7717 6774 alex.stacey@hse.gsi.gov.uk
4017	Effect of corrosion on performance of 34LR wire rope.	Mr J MacFarlane. Tel: 01224 252500 jim.macfarlane@hse.gsi.gov.uk
4018	Determination and verification of metocean criteria and the implication of ISO 19001-1.	Mr M Birkinshaw. Tel: 020 7717 6775 malcolm.birkinshaw@hse.gsi.gov.uk
4021	Demonstration project on risk assessments of space frames exposed to random wave loading	Mr D Tee. Tel: 020 7717 6923 dave.tee@hse.gsi.gov.uk
4023	Publication of the newsletter 'Offshore research focus' (2002 to 2003)	Mr P Sumner. Tel: 01603 828000 phil.sumner@hse.gsi.gov.uk
<b>RECENTLY COMPLETED PROJECTS: APRIL - JUNE 2002</b>		
<b>Project No.</b>	<b>Project Title</b>	<b>Project Officer</b>
Fire and Explosion		
R09.005	Control of risks at explosive stores.	Mr A Miller. Tel: 020 7717 6345 andy.miller@hse.gsi.gov.uk
Engineering		
R32.073	Acceptance criteria for ultrasonic time-of-flight diffraction (TOFD) technique.	Mr H Bainbridge. Tel: 0151 951 4651 harry.bainbridge@hse.gsi.gov.uk
R32.079	Guard interlocking for tractor PTO driven machinery and self propelled harvesting machinery.	Mr D Butter. Tel: 01159 712800 david.butter@hse.gsi.gov.uk
R33.093	Harness suspension: A review and evaluation of existing information.	Mr D Thomas. Tel: 0161 952 8200 david.thomas@hse.gsi.gov.uk
R33.104	Health guidance for designers - Information research trial.	Mr S Cartney. Tel: 0151 951 4838 steve.cartney@hse.gsi.gov.uk
R36.083	The future health and safety implications of global positioning satellite (GPS) and machine automation.	Mr G Male. Tel: 0151 951 4034 gil.male@hse.gsi.gov.uk
R36.086	Improved standards for roll-over protection: Theoretical analysis.	Mr G Male. Tel: 0151 951 4034 gil.male@hse.gsi.gov.uk
R38.036	Assessing the safety integrity of a commercial computer operating system.	Mr E Fergus. Tel: 0151 951 3415 ed.fergus@hse.gsi.gov.uk
Work Environment		
R41.113	Absolute CO measurement as a combustion performance indicator.	Mr A Jones. Tel: 0151 951 3273 allyn.jones@hse.gsi.gov.uk

## □ PROJECT LISTING

RECENTLY COMPLETED PROJECTS: APRIL - JUNE 2002		
Project No.	Project Title	Project Officer
Work Environment (cont.)		
R41.118	Assessment of methods to detect leaks in the casing of room sealed appliances - Field trials.	Mr A Jones. Tel: 0151 951 3273 allyn.jones@hse.gsi.gov.uk
R46.075	Assessing protective face shields against radiant heat.	Ms C Grainger Tel: 020 7717 6992 carol.grainger@hse.gsi.gov.uk
R48.116	Causes of dermatitis in the textile industry.	Ms M Kingman. Tel: 0113 283 4200 maureen.kingman@hse.gsi.gov.uk
Occupational Health		
R51.192	Exposure to spray residues on agricultural equipment.	Dr A Phillips. Tel: 0151 951 4753 andy.phillips@hse.gsi.gov.uk
R51.195	A field evaluation of the OASYS expert system.	Dr R Rawbone. Tel: 0151 951 4555 roger.rawbone@hse.gsi.gov.uk
R51.220	Dermal exposure resulting from liquid contamination.	Mr J Wheeler. Tel: 0151 951 5767 james.wheeler@hse.gsi.gov.uk
R51.225	Procurement of welding fume exposure data - Phase 1.	Ms C Northage. Tel: 0151 951 4464 christine.northage@hse.gsi.gov.uk
R54.070	Interventions to control stress at work in hospital staff.	Ms S Williams. Tel: 01582 444200 sally.williams@hse.gsi.gov.uk
R54.079	Meta-analysis: Impact of work related stress on health.	Dr C Mackay. Tel: 0151 951 4565 colin.mackay@hse.gsi.gov.uk
R55.064	Reducing musculoskeletal risks in meat deboning/handling.	Ms F Macneill. Tel: 0141 275 3000 fiona.macneill@hse.gsi.gov.uk
R55.085	The role of inequality and musculoskeletal health.	Mr L Morris. Tel: 0151 951 5708 len.morris@hse.gsi.gov.uk
R58.059	Survey of the use of occupational health support.	Ms M Smith. Tel: 020 7717 6897 monica.smith@hse.gsi.gov.uk
Behavioural and Social Sciences		
R62.092	A model framework for societal concerns.	Dr R Foster. Tel: 020 7717 6885 robin.foster@hse.gsi.gov.uk
R63.059	Mines rescue arrangements - Future options.	Mr G Gilmour. Tel: 0151 951 3356 graham.gilmour@hse.gsi.gov.uk
R64.068	Wider evaluation of technology based training for Local Authority Enforcement Officers.	Ms M Buchan. Tel: 0151 951 6441 moira.buchan@hse.gsi.gov.uk
R64.077	Changing business behaviour - Would bearing the true cost of health and safety performance make a difference?	Mr S Vinton. Tel: 020 7717 6954 steve.vinton@hse.gsi.gov.uk
R64.078	Determining the effectiveness and impact of the PABIAC initiative to reduce accidents in the paper industry.	Ms S Peace. Tel: 01342 334200 samantha.peace@hse.gsi.gov.uk
R67.148	Human factors aspects of remote plant operation.	Mr J Wilkinson. Tel: 0151 951 3041 john.wilkinson@hse.gsi.gov.uk
Risk Assessment		
R71.053	A study of the provision of health and safety information in the annual reports of larger UK companies.	Mr S Vinton. Tel: 020 7717 6954 steve.vinton@hse.gsi.gov.uk
R72.059	Gas releases from buildings - Enhancement to GRAB-T.	Mr A Kelsey. Tel: 0114 289 2026 adrian.kelsey@hsl.gov.uk
R72.069	The application of the HSE FOD inspection rating system in the local authority (LA) enforced sector.	Mr N Hammond. Tel: 020 7717 6663 nigel.hammond@hse.gsi.gov.uk
R73.026	A centre for risk analysis and information: A feasibility study.	Mr D Rickwood. Tel: 020 7717 6671 david.rickwood@hse.gsi.gov.uk
Offshore		
3756	Production of offshore research focus, 1999 to 2002.	Mr P Sumner. Tel: 01603 828000 phil.sumner@hse.gsi.gov.uk
3880	Critical review of offshore explosion research.	Mr A Richardson. Tel: 0151 951 3177 alan.richardson@hse.gsi.gov.uk
3931	Interpretation of experimental results from Spadeadam.	Mr R Martland. Tel: 0151 951 3082 roland.martland@hse.gsi.gov.uk
3956	FPSO model testing review - Summary tables and hypertext presentation.	Mr P Mills. Tel: 020 7717 6784 peter.mills@hse.gsi.gov.uk
3969	Safety critical bolting review.	Mr J Macfarlane. Tel: 01224 252500 jim.macfarlane@hse.gsi.gov.uk
3972	Ship collision and capacity of brace members of fixed steel	Mr V Karthigeyan. Tel: 020 7717 6773

## □ PROJECT LISTING

RECENTLY COMPLETED PROJECTS: APRIL - JUNE 2002		
Project No.	Project Title	Project Officer
Offshore (cont.)		
3985	Investigation into crane wire rope failure - DSV Pelican.	Mr J Macfarlane. Tel: 01224 252500 jim.macfarlane@hse.gsi.gov.uk
3986	A benchmark study of various structural reliability analysis software - A pilot project.	Mr C de Souza. Tel 020 7717 6776 conrad.de_souza@hse.gsi.gov.uk

## □ RECENT PUBLICATIONS

Series No.	Contract Research Report/Offshore Technology Report: Title
OTO 2000 018	Guidance on POD/POS curves for non-destructive examination.
OTO 2000 077	Fracture mechanics assessment of fatigue cracks in offshore tubular structures.
OTO 2000 078	Static strength of cracked high strength steel tubular joints.
OTO 2001 010	Technical content of sections from the withdrawn fourth edition guidance - Environmental considerations.
OTO 2001 011	Technical content of sections from the withdrawn fourth edition guidance - Corrosion protection.
OTO 2001 012	Technical content of sections from the withdrawn fourth edition guidance - Site investigations.
OTO 2001 013	Technical content of sections from the withdrawn fourth edition guidance - Loads.
OTO 2001 014	Technical content of sections from the withdrawn fourth edition guidance - Foundations.
OTO 2001 015	Technical content of sections from the withdrawn fourth edition guidance - Steel.
OTO 2001 016	Technical content of sections from the withdrawn fourth edition guidance - Pile/sleeve connections.
OTO 2001 017	Technical content of sections from the withdrawn fourth edition guidance - Materials other than steel and concrete.
OTO 2001 034	Assessment of the effects of wave-in-deckloads on a typical jack-up
OTO 2001 036	Interpretation of full scale monitoring data for input to ISO standard in jack-up rigs.
OTO 2001 046	Technical content of sections from the withdrawn fourth edition guidance - Concrete.
OTO 2001 048	Technical content of sections from the withdrawn fourth edition guidance - Floating installation.
OTO 2001 049	Technical content of sections from the withdrawn fourth edition guidance - Stability.
OTO 2001 050	Technical content of sections from the withdrawn fourth edition guidance - Station keeping.
OTO 2001 051	Technical content of sections from the withdrawn fourth edition guidance - Self-elevating installations (jack-up units).
OTO 2001 054	Report on the investigation into the snagging of hooks and their indiscriminate shedding of slings/pennants - Phase 1.
OTO 2001 062	Comparative evaluation of minimum structures and jackets
OTO 2001 063	Marine risk assessment
OTO 2001 065	Technical content of sections from the withdrawn fourth edition guidance - Mechanical equipment.
OTO 2001 066	Technical content of sections from the withdrawn fourth edition guidance - Ventilation and air conditioning.
OTO 2001 067	Technical content of sections from the withdrawn fourth edition guidance - Living accommodation.
OTO 2001 068	Technical content of sections from the withdrawn fourth edition guidance - Noise and vibration.
OTO 2001 069	Technical content of sections from the withdrawn fourth edition guidance - Decks, stairways, etc.
OTO 2001 070	Technical content of sections from the withdrawn fourth edition guidance - Helicopter landing area.
OTO 2001 078	An investigation of storm incidents in UK waters
OTO 2001 079	Variable amplitude corrosion fatigue of jack-up steels
OTO 2001 081	Experimental validation of the ultimate strength of brace members with circumferential cracks
OTO 2001 086	Interpretation of experimental results from Spadeadam explosion tests
OTO 2001 088	Beyond lifetime criteria for offshore cranes
OTO 2001 091	Inspection and auditing the management of emergency response
OTO 2002 005	Seismic hazard - UK continental shelf
OTO 2002 007	Resistance of semi-submersibles to collision
OTO 2002 008	A safety-based decision support system for the design of large offshore engineering products
OTO 2002 011	Efficient techniques for risk assessment of space frame platforms exposed to random wave and current loading and some thoughts on extension to cover effects of intermittency and directionality
OTO 2002 012	Accident statistics for offshore units on the UK continental shelf 1991-99
OTO 2002 016	Framework for assessing human factor capability
OTO 2002 018	FPSO response in long and short crested seas
OTO 2002 021	Compatibility test protocol for lifejackets and immersion suits on offshore installations
OTO 2002 023	Testing and analysis of relief device opening times
OTO 2002 028	Transient vibration guidelines for fast acting valves for screening assessments
OTO 2002 031	Investigation of failure of crane rope from DSV DSND Pelican
CRR 388	Fume emissions spot welding through adhesives and sealants
CRR 404	Risk perception leading to risk taking behaviour amongst farmers in England and Wales
CRR 409	The influence of preconditioning on performance of side lever and compression knapsack sprayers when subjected to the test methods proposed by ISO DIS 19932-1
CRR 424	A review of CO incident data for 1999/00 produced from the full investigation of incidents which had

resulted from the use of piped natural gas and LPG within GB

CRR 425 Methods for optimising the effectiveness of roll-over protective systems

## □ RECENT PUBLICATIONS

<b>Series No.</b>	<b>Contract Research Report/Offshore Technology Report: Title</b>
CRR 426	Playgrounds - Risks, benefits and choices
CRR 427	Understanding the risks of stress: A cognitive approach
CRR 428	Principles for proof testing of safety instrumented systems in the chemical industry
CRR 429	Thorough examination and inspection of particular items of lifting equipment
CRR 430	Strategies to promote safe behaviour as part of a health and safety management system
CRR 432	Human factors aspects of remote operation in process plants
CRR 433	Gas release attenuation within buildings: Effects of temperature and stratification
CRR 434	COSHH essentials: Survey of firms purchasing this guidance
CRR 435	Interventions to control stress in the Health Service
CRR 436	Changing business behaviour: Would bearing the true cost of poor health and safety performance make a difference?
CRR 437	Guard interlocking for PTO driven machinery
CRR 438	Guard interlocking for self propelled harvesting machinery
CRR 440	Exposure to pesticide residues on agricultural spraying equipment
CRR 441	Initiative evaluation report: Back in work
CRR 442	The future health and safety implications of Global Positioning Satellite (GPS) and machine automation
CRR 444	Perceptions of health and safety in Malta
CRR 445	Survey of use of occupational health support
CRR 446	A study of the provision of health and safety information in the annual reports of the top 350 UK companies
CRR 447	Mapping health hazards and risk across aspects of the construction process

RR/CRR/ OT Reports are available for free download at:

<http://www.hse.gov.uk/research/frameset/publish.htm>

The most recent reports may not be uploaded yet. Hard copies will also be available in HSE's Information Centres and from the British Library. Copies may be purchased from HSE Books.