

# MAINSTREAM RESEARCH NEWS



THE NEWSLETTER FOR HSE'S MAINSTREAM SCIENCE AND TECHNOLOGY PROGRAMME

ISSUE 18

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## □ **HSC/E STRATEGIC RESEARCH OUTLOOK - OUT FOR OPEN CONSULTATION**

As described in the previous edition of this newsletter, HSC/E's Strategic Research Outlook is being produced as a replacement for the existing annual Mainstream Research Market publication. The draft document is now available on HSE's website until 31 December 2001, for consideration and comment, at the following URL: <http://hse.gov.uk/research/content/outlook.pdf>

**Any comments should be made in writing to:**

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The document sets out HSC/E's strategic science and innovation aims and its layout reflects that of the HSC/E Strategic Plan (<http://www.hse.gov.uk/action/content/misc319.pdf>).

The document offers a guide to HSE's research activities, providing information on the broad spectrum of issues and topics (including new and emerging issues) on which HSE expects to carry out research either now or in future years. The document will also feature the annual 'Competition of Ideas' exercise, where ideas for research are invited against a range of broad issues facing HSE. Although these do not yet appear in this draft they will be incorporated into the final draft of the document prior to its publication in February 2002.

## □ **RESEARCHERS' FORUM**

The Researchers' Forum (at the following URL:

<http://www.researchersforum.gov.uk>) is an interactive discussion forum for researchers based in companies, universities and other research based organisations. It has recently been developed by the Office of Science and Technology (OST), part of The Department of Trade and Industry.

Researchers registering with this Forum are able to take part in online discussions on a research topic of their choice. This could involve seeking solutions and advice on managing collaborative projects; posting information about new research opportunities and calls for proposals; making new contacts and seeking potential partners; or leaving business details in the biography section. Because the site is a public forum, there are guidelines about procedures and acceptable behaviour. Although everyone may read the discussions and comments left on the site, to add a comment yourself you must be registered - which can be done quickly and easily online.

## □ **WHAT'S NEW?**

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

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**□ IDENTIFICATION OF IRRITATION AND SENSITISATION FOLLOWING EXPOSURE TO AIRBORNE SUBSTANCES IN THE WORKPLACE**

(Contractor: Health and Safety Laboratory)

Many occupational exposures to substances give rise to a relatively high prevalence of respiratory symptoms, including work related cough and chest tightness. These do not permit the clinical diagnosis of either asthma or bronchitis but, nevertheless, might reflect an early stage of either condition. In controlling risks to respiratory health and in the management of individuals it is important to make the distinction between an underlying sensitisation (which may lead to asthma) or irritation (which may lead to bronchitis). This project aims to investigate the hypothesis that irritation and sensitisation in the human respiratory tract exhibit different biochemical profiles in the peripheral blood and different physiological changes in the airways. Working with two separate populations of workers exposed to either an irritant or a sensitiser, a method of distinguishing between these two mechanisms will be sought by studying those workers who exhibit respiratory symptoms on exposure to substances in the workplace. Once developed, the methodology will then be tested using a single population of workers who exhibit respiratory symptoms on exposure to a substance in the workplace, which is potentially an irritant and/or a sensitiser. It is intended that this research will provide knowledge to inform recommendations on appropriate control measures and health surveillance for workers exposed to substances causing respiratory symptoms.

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**□ A STUDY OF THE PROVISION OF HEALTH AND SAFETY INFORMATION IN THE ANNUAL REPORTS OF THE LARGER UK COMPANIES**

(Contractor: System Concepts Ltd)

Action point 2 of Revitalising Health and Safety, published by the Government and HSC in 2000, seeks to engage the larger UK companies to report publicly (to a common standard) on health and safety issues. The Government and HSC have 'challenged' the top 350 UK companies to report to these standards by the end of 2002. Very little information is currently available to identify which companies already include health and safety in their annual reports and on the extent of the information provided by those who do. This project aims to establish a baseline, via a consultation exercise, for the current level of reporting of health and safety in annual reports of the top 350 companies. The reasons why companies do or do not include this information will be established and the work will assess levels or standards used by companies that do report on health and safety, and whether specific targets are set. The impact of health and safety reporting on key stakeholders, including shareholders will also be evaluated.

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**□ DOSE CONSTRAINTS FOR COMFORTERS AND CARERS**

(Contractor: Hallamshire Hospital)

The Ionising Radiations Regulations 1999 define 'comforters and carers' as: "an individual who (other than as part of his occupation) knowingly and willingly incurs an exposure to ionising radiation resulting from the support and comfort of another person who is undergoing or has undergone any medical exposure". HSE needs to provide guidance on dose constraints for such persons, since they will not be subject to the normal dose limits for other members of the public. Information does not exist about the full range of circumstances in which members of the public act in this role; nor do we have complete information about the dose levels they incur when they do. This research will examine and provide a comprehensive listing of the various ways in which diagnostic radiology, nuclear medicine and radiotherapy can cause members of the public to be exposed to ionising radiations while providing support and comfort to a patient. The control measures currently in use for each of the potential exposure scenarios will be identified and recorded as will typical dose levels.

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**□ WHAT'S NEW?**

### **□ ULTRA HIGH PRESSURE WATER JET HAZARDS**

(Contractor: Health and Safety Laboratory)  
Ultra High Pressure (UHP) water jets are being used increasingly in industry for the preparation of surfaces and to cut materials. Currently, the technology provides systems capable of cutting 300mm steel sheets. There is presently insufficient knowledge of the hazards associated with UHP systems and very little guidance available relating to the safety associated with these techniques, which have considerable destructive power. Part of the aim of this work is to characterise UHP water jets. The types of jet (i.e. water only, water plus abrasive, etc) and their uses (cleaning, surface preparation, cutting, etc) will be identified. A measuring system will then be developed to characterise the impact force or jet pressure at different stand-off distances from the jet nozzle, and under a range of jet conditions, as currently found in use in industry. This information will be used to provide guidance for the industry on safe operating distances associated with UHP systems.

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### **□ IGNITION HAZARD FROM CONVEYOR IDLER ROLLERS**

(Contractor: Health and Safety Laboratory)  
The conditions under which electrical equipment can ignite explosive atmospheres is well understood and accounted for in legislation and equipment standards for coal mines and other high hazard workplaces. The European ATEX directives 94/9/EC and 99/92/EC have to be fully implemented in 2003 and extend equipment and use requirements to less understood sources of ignition in mechanical equipment. It is known that the grease used in bearings, such as those in idler rollers on belt conveyors, will burn at a temperature well below that needed to ignite methane/air mixtures. An explosive atmosphere might be ignited by further frictional heating or some other mechanism if a bearing continues to run under load after its initial failure.

Research is needed to establish whether measures additional to those aimed at minimising the risk of fire are appropriate in assessing the risks of explosion.

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### **□ REVIEW OF THE ROLE OF MANAGERIAL LEADERSHIP ON ORGANISATIONAL SAFETY OUTCOMES**

(Contractor: University of Aberdeen)  
There has been widespread recognition of the contribution of managerial leadership to organisational safety, leading to an upsurge in empirical research exploring the role of leaders in safety. It has proved difficult to synthesise the literature into a coherent model of the safety leadership phenomenon. It is still unclear exactly how these two goals interrelate. This work aims to develop a unified theoretical and empirical model of leadership factors at corporate, site management and supervisory levels, which influence organisational safety outcomes. The work will inform HSE thinking and approaches to safety leadership in the UK oil sector and will involve Offshore Installation Managers in a safety related project.

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### **□ IDENTIFYING ASSOCIATIVE TRIGGERS FOR NON-SPECIFIC ILLNESS IN THE WORKPLACE**

(Contractor: University of Nottingham)  
Many occupational and environmental health hazards cause increased reporting of non-specific symptoms (NSS) such as headache, eye/respiratory irritation, memory problems and fatigue. NSS are normally present in the general (non-exposed) population and it is important to determine the mechanisms by which such effects are initially produced and symptom reporting maintained so that causal links between presumed hazard and health outcomes can be reliably determined. Various models have been proposed linking hazard to symptoms, often based on the presence of undesirable psychosocial work characteristics. This study aims to identify environmental triggers that may act as precipitants of illness in the workplace.

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□ **WHAT'S NEW?**

□ **IDENTIFICATION OF GOOD PRACTICE IN STRESS PREVENTION AND MANAGEMENT AND BEACONS OF EXCELLENCE IN PREVENTING STRESS IN THE WORKPLACE**

(Contractor: Robertson Cooper Ltd)

Stress-related problems are the second most commonly reported cause of occupational ill health after musculoskeletal disorders. It is widely thought that organisational factors play a significant part in contributing to employees' experience of occupational stress.

Consequently, the Health and Safety Commission has agreed a plan of work to tackle work related stress. Relevant to the plan is the need to research and publicise information concerning good practice at an organisational level in stress prevention and stress management. This information will be fed into the first phase of the development of standards of good management practice for a range of work related stressors. Integral to the research is the identification of 'beacons of excellence' in preventing and managing work related stress that can be used as examples to help other organisations. Examples from the education, NHS and Local Authority sectors are particularly sought since staff in these sectors are amongst those reporting the highest levels of work related stress.

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□ **A STUDY OF HSE'S OPENNESS PROCEDURES AND PRACTICES**

(Contractor: University College London)

When disclosing information, HSE currently operates the regime set out in the non statutory Code of Practice on Access to Government Information. The provisions of the new Data Protection Act 1998 are also applied on disclosing personal data.

However, the Freedom of Information (FOI) Act 2000 (likely to come into force for Government Departments in 2002) will change the regime for disclosing information.

FOI will also extend the definition of personal data. These are fundamental changes which will place a legal obligation on the accessibility and transparency of HSE's information. The HSE Board's statement on openness requires a culture of openness - information is disclosed unless to do so would cause significant harm or the law prevents it. To achieve this approach, the attitudes and perceptions of HSE's staff and key stakeholders will be assessed and tested against the Board's policy. The findings of this study will complement a separate audit of openness in HSE and will inform an internal campaign as part of HSE's implementation of FOI through a programme of projects.

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□ **PILOT STUDY ON EXPOSURE OF MAINTENANCE WORKERS TO ASBESTOS**

(Contractor: Health and Safety Laboratory)

Various epidemiological studies have shown evidence of asbestos related disease amongst maintenance workers. A cohort of ladders and insulators studied by Selikoff (1979) showed that the disease rates in workers who installed asbestos products was higher than those exposed in manufacturing industries. In a study by Peto (1996), 24% of all UK mesothelioma deaths were attributed to maintenance operations. These data have, in recent years, made maintenance workers a focus for HSE's asbestos awareness campaigns, for research and for proposed regulations (Control of Asbestos at Work Regulations [CAWR] 2002). HSE funded a previous project on airborne asbestos exposures to maintenance workers using conventional sampling methods, which found low levels of exposure. It was recognised that a conventional sampling strategy would produce a low bias as only planned asbestos maintenance was sampled. An alternative passive sampling strategy was developed and tested. This will now be used to carry out a survey of exposure. A group of up to 100 maintenance workers will be recruited through the trade press. Each worker will be asked to wear a badge-type passive sampler and to keep a work activity log through the course of a working week. Samplers will be analysed and the work log studied to assess whether the workers were knowingly or unknowingly exposed to asbestos.

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## **EXAMPLES OF RECENTLY COMPLETED PROJECTS**

### **A CRITICAL REVIEW OF PSYCHOSOCIAL HAZARD MEASURES**

(Contractor: The Institute for Employment Studies)

Legislation requires that employers regularly conduct risk assessments to identify what in their workplace is a potential hazard to employee health and safety. The assessment of physical hazards is well established. However, more recently attention has focused on the assessment of risk from psychosocial hazards, and to do this, measures have been developed or adopted from research to assess the prevalence of workplace stressors. Whilst much research has been done on stress, there exists no systematic overview of the different types of stressor measures available in the UK, nor is there any consistently recorded information about their relative merits. The purpose of this research was to provide a critical review of current psychosocial hazard measures. The contractors identified the methods or measures commonly used to assess psychosocial hazards in the workplace and comprehensively reviewed each measure for the following: evidence of reliability against recognised standards; evidence of validity in relation to risk assessment against recognised standards; evidence in relation to the validity of the underlying theoretical foundations of measures and how this relates to current thinking; and the ease of use of each measure.

The contractors found that, in comparison to the number of papers published on stress and which use measures of psychosocial hazards, surprisingly little relevant evidence of reliability/validity was found. However, there was substantial evidence available for one form of reliability - internal consistency, which was found to be reasonably good. Slightly more evidence was available for most types of validity indicating mixed levels, but there was limited evidence for predicted validity. Variety in the type of hazards measured and the measurement techniques used was also fairly restricted. In summary, little sound evidence on the reliability and validity of the measures in use was available. This strongly suggested that their quality was limited as was their ease of use. These weaknesses have now been systematically identified. The report, which describes the work in detail (published on HSE's website as [CRR 356](#)), goes on to consider how such measures of psychosocial hazards could be improved and identifies the implications for practice and research.

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### **IMPROVING THE SAFETY OF WORKERS IN THE VICINITY OF MOBILE PLANT**

(Contractor: IMC Technical Services Ltd)

The objective of this work was to investigate possible approaches and technologies to improve the safety of pedestrians around mobile plant. The study considered mobile plant across three industrial sectors: underground mining; surface mineral extraction; and warehousing and material handling. The work programme investigated: vehicle ergonomics and visual task analysis; aids to improve reversing and sight lines; direct body detection techniques; conventional transponder (RFID); and VLF magnetic dipole detection technologies.

A proof-of-concept personnel detection system was developed. Pedestrians were equipped with a personal transmitter when in high risk areas. The mobile plant safety system functioned by detecting a personal transmitter via a small receiving loop, field interrogation and driver warning unit located on the mobile plant. The three component magnetic field transmitter used at very low frequency (~ 30 kHz) overcame the limited coverage and null problems observed with many commercial transponder systems. Open field tests indicated that the system's polar detection pattern had acceptable circular symmetry. Tests undertaken underground (to gauge the impact of metallic and strata structures) confirmed that the polar field pattern was acceptable. The approach of detecting the three components of a low frequency H field was demonstrated to be technically sound, providing a wide, uniform field of coverage and detection all around the item of mobile plant. Alternative systems from the US and Canada have been compared and contrasted with the system developed here. This work has been reported in [CRR 358](#)

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**□ EXAMPLES OF RECENTLY COMPLETED PROJECTS**

**□ JOINT INDUSTRY PROJECT ON CARBON MONOXIDE (CO) ISSUES: LONG TERM RELIABILITY OF DOMESTIC CO ALARMS**

(Contractor: Advantica Technologies Ltd)

This research, which formed part of a wider Joint Industry Programme on Carbon Monoxide issues, was jointly funded by British Gas plc, the Department of Trade and Industry and HSE. The work was carried out over two years and investigated the long term reliability of domestic CO alarms. This was not a comprehensive product survey or review of all CO alarms on the market. Rather, the studies were intended to provide assessment, using a representative sample of 30 alarms currently available within the UK, of the stability and longer term reliability of such devices as a basis for further work.

Some of the models studied were kite marked to the relevant British Standard, BS 7860: 1996 'Specification for Carbon Monoxide detectors (electrical) for domestic use', or purported to be BS compliant. Others were not. However, neither the current BS nor a proposed European (CENELEC) standard give a guarantee of long term service reliability. The only long term test of sensor reliability is limited to three months and is not carried out in conditions representative of a domestic environment. Therefore, assessment of the long term reliability of CO alarms over a one year period in domestic premises was included in this project.

The various alarms were subjected to an initial laboratory screening, based on the BS, with six then being selected for a one year field trial for reliability. Not all available alarms were subjected to the full field trial and it should not necessarily be inferred from the results of the project that those not selected would have performed similarly. After one year of service only two models were found to be performing satisfactorily, and only one of these was still available within the UK. Some manufacturers of models tested have disputed some of the findings of this work. Although the work has its limitations and there have been improvements in sensor technology since the work was carried out, the report has been published as CRR 360 in the interests of the public and as a contribution to the wider debate on CO alarms.

HSE, as the health and safety regulator, will now focus on work to address possible deficiencies in the current standard's criteria and test protocol, with a view to the development of an agreed standard covering long term sensor reliability.

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**□ MINIMISING THE PSYCHOSOCIAL RISKS OF TEAMWORKING AND OTHER FLEXIBLE WAYS OF WORKING**

(Contractor: The University of Sheffield)

Team working is a popular way of achieving greater organisational flexibility and other benefits, such as reduced costs of supervision, faster lead times, innovation, more effective decision making, better customer service and enhanced employee morale. For the employee, team working may be a way of reducing work-related stress through enhanced job autonomy. On the other hand, there is a danger that flexible work practices could escalate employee stress levels due to increased work pressure. It is important to understand how the positive effects of team working can be enhanced while the negative effects can be minimised or prevented.

This research examined three distinct types of teams: flexible work teams in a wire making company; lean production teams in a vehicle manufacturing company; and self managed teams in a chemical processing company. Based on these studies, and the analysis of existing research, a model for understanding team working and its impact on employee mental health has been proposed. The model specifies that, to have positive effects on employee mental health, organisations need to design and implement teams such that they will have positive impact on work characteristics. The effect of team working on work characteristics depends on the appropriateness of the context for team working, the design of team working, and how well team working is implemented. The report from this work will be published shortly in the CRR series.

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**□ EXAMPLES OF RECENTLY COMPLETED PROJECTS**

**□ FUME EMISSIONS FROM SPOT WELDING THROUGH ADHESIVES AND SEALANTS**

(Contractor: The Welding Institute)

Modern fabrication practice, especially in the motor industry, can involve resistance welding through adhesives and sealants. During such welding, fumes are generated that may be harmful to health and may be inhaled by workers in the vicinity of the welding operation. Little was known about the concentration or composition of the fumes emitted, making it difficult to assess the risks to health arising from the activity as required by the Control of Substances Hazardous to Health (COSHH) Regulations 1999. The purpose of this work was to generate fume composition data and, where possible, concentration data for resistance welding through a representative range of epoxy based adhesives and polybutadiene-based interweld sealants, in order to gather sufficient information for a comprehensive risk assessment. It was also intended that a marker compound should be identified to enable simplified monitoring of exposure to such fumes in the workplace.

Test pieces, made using zinc coated sheet materials, together with either epoxy-based adhesives or polybutadiene-based sealants, were resistance welded inside a specially constructed sampling chamber. All materials and welding conditions were selected to be typical of modern practice in the motor industry. The fumes emitted were collected using sampling equipment that could be used for workplace monitoring, and were then analysed to determine the compounds generated.

The most harmful compounds identified in terms of their occupational exposure limits were benzene and 1,3 butadiene. Small concentrations of acrylonitrile were present in some samples where adhesives had been used. However, compared to the level of total welding fume, the concentrations of these compounds were low. Concentrations of the individual high molecular weight (cancerogenic) polycyclic aromatic hydrocarbons (PAHs) were very low. The PAH composition comprised mainly of naphthalene, the remainder being other low molecular weight PAHs. The preferred marker compound for the adhesives examined was phenol; and for the sealants, benzothiazole or one of the thiophenes.

The report from this work will shortly be published in the CRR series.

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**□ PROJECT LISTING**

**NEWLY COMMISSIONED PROJECTS: JULY - SEPTEMBER 2001**

<b>Project No.</b>	<b>Project Title</b>	<b>Project Officer</b>
<b>Fire and Explosion</b>		
R02.061	Ignition hazard from conveyor idler rollers	Mr M Williams. Tel: 0151 951 4866 <a href="mailto:mansel.williams@hse.gsi.gov.uk">mansel.williams@hse.gsi.gov.uk</a>
R03.034	Measurement of limiting oxygen concentration in sewage sludge drying plants	Mr A Tyldesley. Tel: 0151 951 4769 <a href="mailto:alan.tyldesley@hse.gsi.gov.uk">alan.tyldesley@hse.gsi.gov.uk</a>
R03.035	MECHEX	Mr A Tyldesley. Tel: 0151 951 4769 <a href="mailto:alan.tyldesley@hse.gsi.gov.uk">alan.tyldesley@hse.gsi.gov.uk</a>
R04.087	Control of fire risks from packaged flammable dusts	Mr I Essa. Tel: 0161 952 8200 <a href="mailto:iqbal.essa@hse.gsi.gov.uk">iqbal.essa@hse.gsi.gov.uk</a>
R05.102	Development of a closed friction apparatus for energetic materials	Dr M Marriott. Tel: 0151 951 4815 <a href="mailto:michael.marriott@hse.gsi.gov.uk">michael.marriott@hse.gsi.gov.uk</a>
R05.106	Separation distances around explosives stores	Mr A Miller. Tel: 0207 717 6345 <a href="mailto:andy.miller@hse.gsi.gov.uk">andy.miller@hse.gsi.gov.uk</a>
<b>Engineering</b>		
R32.086	The security of cross loaded round timber	Mr E Marshall. Tel: 02476 696518 <a href="mailto:edward.marshall@hse.gsi.gov.uk">edward.marshall@hse.gsi.gov.uk</a>
R32.089	Programme to improve non-destructive testing (NDT) effectiveness (PANI2)	Mr H Bainbridge. Tel: 0151 951 4651 <a href="mailto:harry.bainbridge@hse.gsi.gov.uk">harry.bainbridge@hse.gsi.gov.uk</a>
R32.092	Acceptance criteria for automatic ultrasonic	Mr B McCullough. Tel: 0207 717 6922

	testing of pipeline girth welds	bruce.mccullough@hse.gsi.gov.uk
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**PROJECT LISTING**

<b>NEWLY COMMISSIONED PROJECTS: JULY - SEPTEMBER 2001</b>		
<b>Project No.</b>	<b>Project Title</b>	<b>Project Officer</b>
<b>Engineering</b>		
R33.095	Pilot study - The effects on the workforce of installing temporary cladding to a structure	Mr A Maitra. Tel: 0151 951 4634 hash.maitra@hse.gsi.gov.uk
R33.096	Impact tests on scaffold boards	Mr A Maitra. Tel: 0151 951 4634 hash.maitra@hse.gsi.gov.uk
R33.100	Assessing the contribution of building materials and components to safety risks on site	Mr M Dryburgh. Tel: 0207 556 2100 mike.dryburgh@hse.gsi.gov.uk
R36.089	Ultra high pressure water jet hazards	Mr R Wilson. Tel: 0151 951 4776 richard.wilson@hse.gsi.gov.uk
<b>Work Environment</b>		
R41.122	Combustion performance of flueless gas fires	Mr A Jones. Tel: 0151 951 3273 allyn.jones@hse.gsi.gov.uk
R42.114	Pilot study on exposure of maintenance workers to asbestos	Mrs T Boyle. Tel: 0151 951 3390 tracey.boyle@hse.gsi.gov.uk
R43.086	Effectiveness of PPE and decontamination procedures used by asbestos removal workers	Mrs T Boyle. Tel: 0151 951 3390 tracey.boyle@hse.gsi.gov.uk
R45.072	Lowest achievable whole body vibration emissions and estimated exposures in agricultural vehicles	Mr D Butter. Tel: 01159 712800 david.butter@hse.gsi.gov.uk
<b>Occupational Health</b>		
R51.204	Identification of irritation and sensitisation following exposure to airborne substances	Dr R Rawbone. Tel: 0151 951 4555 roger.rawbone@hse.gsi.gov.uk
R51.217	In vitro determinants of particulate toxicity	Mrs M Meldrum. Tel: 0151 951 3805 maureen.meldrum@hse.gsi.gov.uk
R51.227	Development of an expert system for risk assessment/control of exposure to chemicals	Mrs J Cawte. Tel: 0207 717 6264 judy.cawte@hse.gsi.gov.uk
R51.228	Research workshop: COSHH essentials	Ms C Sullivan. Tel: 0207 717 6341 carole.sullivan@hse.gsi.gov.uk
R53.185	Exposure of people to non-optical, non-ionising radiation	Mr N Smith. Tel: 0207 717 6277 norman.smith@hse.gsi.gov.uk
R54.082	Identification of good practice in stress prevention. Management and beacons of excellence in preventing stress	Ms A Needham. Tel: 0151 951 3814 ann.needham@hse.gsi.gov.uk
R59.041	Dose constraints for comforters and carers	Dr J Gill. Tel: 0151 951 4789 john.gill@hse.gsi.gov.uk
<b>Behavioural and Social Sciences</b>		
R62.091	Cultural influences on health and safety attitudes and behaviours in small firms	Ms A Michael. Tel: 0207 717 6488 androulla.michael@hse.gsi.gov.uk
R64.087	The development of messages for the promotion of COSHH essentials to SMEs	Ms C Sullivan. Tel 0207 717 6341 carole.sullivan@hse.gsi.gov.uk
R66.016	Identifying associative triggers for non-specific illness in the workplace	Dr C Mackay. Tel: 0151 951 4565 colin.mackay@hse.gsi.gov.uk
R68.067	Dutyholders reactions to contacts made by Workplace Contact Officers	Mr M Sebastian. Tel: 0151 951 4091 mike.sebastian@hse.gsi.gov.uk
R68.068	A study of HSE's openness procedures and practices	Ms J Harris. Tel: 0207 717 6422 jan.harris@hse.gsi.gov.uk
<b>Risk Assessment</b>		
R71.052	Health and safety information in annual reports	Mr S Vinton. Tel: 0207 717 6954 steve.vinton@hse.gsi.gov.uk
R71.053	A study of the provision of health and safety information in the annual reports of larger UK companies	Mr S Vinton. Tel: 0207 717 6954 steve.vinton@hse.gsi.gov.uk
R71.054	The maintenance and update of the major incident database MHIDAS	Dr D Painter. Tel: 0151 951 3570 dave.painter@hse.gsi.gov.uk
R75.055	Jet impingement models: Limitations, assessment and development	Dr S Porter. Tel: 0151 951 4626 steve.porter@hse.gsi.gov.uk

□ PROJECT LISTING

<b>NEWLY COMMISSIONED PROJECTS: JULY - SEPTEMBER 2001</b>		
<b>Project No.</b>	<b>Project Title</b>	<b>Project Officer</b>
Offshore		
3926	Model and testing of the Loch Rannock as an extension to EPSRC Link Programme FPSO response in long and short crested seas	Mr R White. Tel: 0207 717 6782 robert.white@hse.gsi.gov.uk
3959		Mr P Mills. Tel: 0207 717 6784 peter.mills@hse.gsi.gov.uk
3963	Human factors assessment of safety critical tasks	Mr I Brearley. Tel: 0207 717 6849 ian.brearley@hse.gsi.gov.uk
3965	The durability of pre stressing components in offshore concrete structures	Mr V Karthigeyan. Tel: 0207 717 6773 v.karthigeyan@hse.gsi.gov.uk
3968	Offshore noise benchmarking	Mr R Gardner. Tel: 0151 951 3148 ron.gardner@hse.gsi.gov.uk
3969	Safety critical bolting review	Mr J MacFarlane. Tel: 0151 951 4796 jim.macfarlane@hse.gsi.gov.uk
3970	Launch/recovery systems for RIC/FRC handling	Mr J MacFarlane. Tel: 0151 951 4796 jim.macfarlane@hse.gsi.gov.uk
3971	Update of crane data system	Mr J MacFarlane. Tel: 0151 951 4796 jim.macfarlane@hse.gsi.gov.uk
3978	Preliminary study of emergency breathing systems	Mr R Miles. Tel: 0207 717 6685 bob.miles@hse.gsi.gov.uk
3979	Completion component reliability	Mr G Thomson. Tel: 01224 252500 gordon.thomson@hse.gsi.gov.uk
3980	Review of the role of managerial leadership on organisational outcomes	Mr R Miles. Tel: 0207 717 6685 bob.miles@hse.gsi.gov.uk
3982	Human factors in offshore operations	Mr R Miles. Tel: 0207 717 6685 bob.miles@hse.gsi.gov.uk
3983	Development of a methodology for the assessment of human factors issues relative to slips, trips and fall accidents offshore	Mr B Ogden. Tel 0151 951 3544 bernard.ogden@hse.gsi.gov.uk

<b>RECENTLY COMPLETED PROJECTS: JULY - SEPTEMBER 2001</b>		
<b>Project No.</b>	<b>Project Title</b>	<b>Project Officer</b>
Fire and Explosion		
Z02.052	CFD modelling of the ventilation of a heat and power plant	Mr H Bainbridge. Tel: 0151 951 4651 harry.bainbridge@hse.gsi.gov.uk
R04.075	Burning rates in ventilation controlled enclosure fires	Mr P Appleton. Tel: 0151 951 4218 peter.appleton@hse.gsi.gov.uk
R05.103	New requirements for the transport of explosives by road	Ms J Critchley. Tel: 0207 717 6394 judith.critchley@hse.gsi.gov.uk
Engineering		
R31.076	Comparison of fracture assessment methodologies	Mr H Bainbridge. Tel: 0151 951 4651 harry.bainbridge@hse.gsi.gov.uk
R33.047	Coal mine roadway behaviour - neural networks	Mr S Wing. Tel: 0114 291 2300 steve.wing@hse.gsi.gov.uk
R33.076	Industrial rope access: Investigation in to items of PPE	Mr D Thomas. Tel: 0151 951 3322 david.thomas@hse.gsi.gov.uk
R33.078	Subsidence damage to buildings: collation and publication of results	Mr D Lamont. Tel 0151 951 4818 donald.lamont@hse.gsi.gov.uk
R36.077	Improving the safety of workers in the vicinity of mobile plant	Mr G Gilmour. Tel 0151 951 3356 graham.gilmour@hse.gsi.gov.uk
R36.084	Coast control on pedestrian controlled lift trucks - risk assessment	Mr G Male. Tel 0151 951 4034 gil.male@hse.gsi.gov.uk
R38.028	Evaluation of HSE's response to the 'Year 2000' problem	Mr S Bullock. Tel: 0207 717 6368 stuart.bullock@hse.gsi.gov.uk
Work Environment		
R41.095	CO issues: compartment ventilation for gas fired appliances	Mr S Wright. Tel: 0151 951 4774 steve.dst.wright@hse.gsi.gov.uk

□ PROJECT LISTING

<b>RECENTLY COMPLETED PROJECTS: JULY - SEPTEMBER 2001</b>		
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Project No.	Project Title	Project Officer
<b>Work Environment</b>		
R41.098	CO issues: long-term reliability of domestic CO alarms	Mr S Wright. Tel: 0151 951 4774 steve.dst.wright@hse.gsi.gov.uk
R41.099	CO issues: information dissemination	Mr A Jones. Tel: 0151 951 3273 allyn.jones@hse.gsi.gov.uk
R41.100	CO issues: emergency response review	Mr A Jones. Tel: 0151 951 3273 allyn.jones@hse.gsi.gov.uk
R41.101	CO issues: incident data	Mr A Jones. Tel: 0151 951 3273 allyn.jones@hse.gsi.gov.uk
R41.103	JIP projects on carbon monoxide - Reduction in carbon monoxide incidents.	Mr A Jones. Tel: 0151 951 3273 allyn.jones@hse.gsi.gov.uk
R41.114	JIP on CO issues - emergency response review: analysis of the field assessment data on the use of analysers	Mr A Jones. Tel: 0151 951 3273 allyn.jones@hse.gsi.gov.uk
R42.099	Development of novel instruments for (health-related) sampling of aerosols	Mr H Jackson. Tel: 0207 717 6242 howard.jackson@hse.gsi.gov.uk
R43.055	Dustiness testing reference method for powder and materials	Ms C Northage. Tel: 0151 951 4464 christine.northage@hse.gsi.gov.uk
Z43.055	Development of dustiness methods for powder and materials	Ms C Northage. Tel: 0151 951 4464 christine.northage@hse.gsi.gov.uk
R43.077	Tracer gas methods for the measurement of air change rates	Mr A Griffin. Tel: 0151 951 4674 adrian.griffin@hse.gsi.gov.uk
R44.029	Noise levels and noise exposure in pubs and clubs: Literature review	Ms D Brown. Tel 0207 717 6037 dorothy.brown@hse.gsi.gov.uk
R45.061	Correlation of hand arm vibration/emission and employee vibration exposure	Mr P Brereton. Tel: 0151 951 4824 paul.brereton@hse.gsi.gov.uk
R46.079	Protective aprons against drop forging projectiles	Mr N Hitchcott. Tel: 0121 607 6200 nicholas.hitchcott@hse.gsi.gov.uk
<b>Occupational Health</b>		
R51.122	Pneumonia and occupational exposure to metal fume	Mr J Hodgson. Tel 0151 951 4566 john.hodgson@hse.gsi.gov.uk
R51.158	Uncertainty factors for chemical risk assessment	Dr J Delic. Tel: 0151 951 3593 julian.delic@hse.gsi.gov.uk
R51.160	Psychological effects of exposure to organophosphates	Dr R Rawbone. Tel: 0151 951 4555 roger.rawbone@hse.gsi.gov.uk
R51.168	The neurotoxicity of paint solvents	Dr R Elliott. Tel: 0151 951 3835
R51.209	Fume emissions from spot welding through adhesives and sealants	Ms C Northage. Tel: 0151 951 4464 christine.northage@hse.gsi.gov.uk
R51.224	New requirements for transport of dangerous goods by rail except class 7 (radioactives)	Ms M Disson. Tel: 0207 717 6399 maureen.disson@hse.gsi.gov.uk
R53.184	Evaluation of oxygen decompression in compressed air tunnellers	Mr D Lamont. Tel: 0151 951 4818 donald.lamont@hse.gsi.gov.uk
R54.077	A critical review of current psychosocial risk assessment tools	Dr C MacKay. Tel: 0151 951 4565 colin.mackay@hse.gsi.gov.uk
R59.033	Interpreting data after thorium oxide inhalation	Mr S Walker. Tel: 0151 951 4723 steve.walker@hse.gsi.gov.uk
<b>Behavioural and Social Sciences</b>		
R62.082	Social amplification of risk: Phase 2 Project 4	Mr D Rickwood. Tel: 0207 717 6671 david.rickwood@hse.gsi.gov.uk
R62.084	Public participation methods: an operational framework	Dr L Golob. Tel: 0207 717 6461 laurence.golob@hse.gsi.gov.uk
R62.088	Strategies to promote safe behaviour as part of a health and safety management system	Mr N Byrom. Tel: 0151 951 4336 norman.byrom@hse.gsi.gov.uk
R64.067	Health and safety knowledge and information in small firms using chemicals	Ms M Evans. Tel: 0207 717 6254 marion.evans@hse.gsi.gov.uk

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<b>RECENTLY COMPLETED PROJECTS: JULY - SEPTEMBER 2001</b>		
Project No.	Project Title	Project Officer
<b>Behavioural and Social Sciences</b>		

R64.071	Review of evidence of impact of HSC/E policies and practice	Mr M Holder. Tel: 0207 717 6293 matthew.holder@hse.gsi.gov.uk
R67.138	Minimising the psychosocial risk of team working and other flexible ways of working	Ms A Needham. Tel: 0151 951 3814 ann.needham@hse.gsi.gov.uk
R68.040	Organisational interventions to reduce work related stress	Ms A Needham. Tel: 0151 951 3814 ann.needham@hse.gsi.gov.uk
R68.045	Field Operations Directorate intermediaries project - research contribution, year two.	Mr D Smith. Tel: 0151 951 3300 dave.smith@hse.gsi.gov.uk
R68.060	Research on content and writing of catering industry guidance publication	Mr P Smith. Tel: 0141 275 3000 percy.smith@hse.gsi.gov.uk
<b>Risk Assessment</b>		
R71.033	Good practice in SMEs in assessing workplace risks	Mr L Collins. Tel: 0207 717 6813 lee.collins@hse.gsi.gov.uk
R71.034	Improvement of the I CHEM E accident database	Mr D Painter. Tel 0151 951 3570 dave.painter@hse.gsi.gov.uk
R71.035	The maintenance and update of the database MHIDAS	Mr D Painter. Tel 0151 951 3570 dave.painter@hse.gsi.gov.uk
R71.039	Toxicology for major hazards	Mr P Howden. Tel: 0151 951 3594 peter.howden@hse.gsi.gov.uk
R72.065	Research into the development of COSHH Essentials electronic version.	Mrs J Cawte. Tel: 0207 717 6264 judy.cawte@hse.gsi.gov.uk
Z75.029	Dispersion of anhydrous hydrogen fluoride in humid atmospheres	Dr S Porter. Tel: 0151 951 4626 steve.porter@hse.gsi.gov.uk
R75.040	Modelling of dense, toxic gas releases in road tunnels	Dr N Riley. Tel: 0151 951 4491 nigel.riley@hse.gsi.gov.uk
R75.046	Models for the probability density function of the concentration of dispersing gases	Dr S Porter. Tel: 0151 951 4626 steve.porter@hse.gsi.gov.uk
R76.005	Blast wave sheltering and amplification: Effects on off-site hazard	Dr L WilliamsonTaylor:Tel: 0151 951 4193 lola.williamson-taylor@hse.gsi.gov.uk
R77.001	A peer review of the failure rates and event database (FRED)	Mr S Pointer. Tel: 0151 951 3810 steve.pointer@hse.gsi.gov.uk
R78.007	Validation techniques for risk audit methodologies	Mr P Naylor. Tel: 0151 951 3072 pat.naylor@hse.gsi.gov.uk
<b>Offshore</b>		
3555	Effectiveness of water and foam systems - phase 2	Mr T Norman. Tel 0151 951 3119 terry.norman@hse.gsi.gov.uk
3653	Documentation of active fire suppression systems	Mr A Richardson. Tel: 0151 951 3177 alan.richardson@hse.gsi.gov.uk
3659	High temp/strain rate material properties	Mr R Martland. Tel: 0151 951 3082 roland.martland@hse.gsi.gov.uk
3683	Pressure relief and blowdown systems	Mr S Murray. Tel: 0207 717 6734 steve.murray@hse.gsi.gov.uk
3694	Optimising testing and inspection intervals	Dr S Schofield. Tel: 0151 951 3139 stan.schofield@hse.gsi.gov.uk
3765	Beyond design lifetime criteria for offshore cranes - guidance document	Mr J MacFarlane. Tel: 0151 951 4796 jim.macfarlane@hse.gsi.gov.uk
3788	Cognitive performance in underwater environments	Mr D Tee. Tel: 0207 717 6845 dave.tee@hse.gsi.gov.uk
3833	Failure modes, reliability and integrity of FPSO's/FSU's swivel and turret system	Mr P Dua. Tel: 0207 717 6736 prem.dua@hse.gsi.gov.uk
3842	Single joint elevators - defining the safe working envelope	Mr G Thomson. Tel: 01224 252500 gordon.thomson@hse.gsi.gov.uk
3848	Analysis of NEXT wave data	Mr M Birkinshaw. Tel: 0207 717 6775 malcolm.birkinshaw@hse.gsi.gov.uk

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<b>RECENTLY COMPLETED PROJECTS: JULY - SEPTEMBER 2001</b>		
<b>Project No.</b>	<b>Project Title</b>	<b>Project Officer</b>
<b>Offshore</b>		
3906	Accident statistics for offshore fixed units on the UK Continental Shelf	Mr E Young. Tel: 0207 717 6926 eoin.young@hse.gsi.gov.uk

3908	Code requirements for helideck design	Mr G Morrison. Tel: 01224 252500 graham.morrison@hse.gsi.gov.uk
3909	Training simulation for offshore crane operators	Mr A Dixon. Tel: 0151 951 3468 alan.dixon@hse.gsi.gov.uk
3914	Human factors capability assessment	Mr R Miles. Tel: 0207 717 6685 bob.miles@hse.gsi.gov.uk
3918	Structural integrity duty of care	Mr M Birkinshaw. Tel: 0207 717 6775 malcolm.birkinshaw@hse.gsi.gov.uk
3919	Impact of reduced load factor on allowable operating water depth	Mr W Jones. Tel: 0027 717 6796 wayne.jones@hse.gsi.gov.uk
3922	Response-based forecast. Phase II	Mr M Birkinshaw. Tel: 0207 717 6775 malcolm.birkinshaw@hse.gsi.gov.uk
3931	Interpretation of experimental results from Spadeadam	Mr R Martland. Tel: 0151 951 3082 roland.martland@hse.gsi.gov.uk
3948	Provision and interpretation of diving histories	Mr D Tee. Tel: 0207 717 6845 dave.tee@hse.gsi.gov.uk

## □ RECENT PUBLICATIONS

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OTO 027	2000	Review of the current inspection practices for topside structural components
OTO 055	2000	Analysis of structural response measurements - phase 3B Spadeadam
OTO 096	2000	Techniques for addressing rule violations in the offshore industry
OTO 097	2000	Rationalisation of FPSO design issues
OTO 007	2001	Maintenance - reducing the risks
OTO 030	2001	Wind and wave frequency distributions for sites around the British Isles
OTO 038	2001	Temporary/permanent pipe repair - guidelines.
OTO 039	2001	A study into onshore and offshore based rescue and recovery (OBRR) helicopters
OTO 040	2001	Marine offshore rescue advisory group - good practice in offshore rescue
OTO 044	2001	Review of corrosion management for offshore oil and gas processing
CRR 354		Survey of explosive stores and impact of proposed changes to separation distances
CRR 355		The validity and interpretation of neurobehavioural data obtained in studies to investigate the neurotoxic effects of occupational exposure to mixtures of organic solvents
CRR 356		A critical review of psychosocial hazard measures
CRR 357		Evaluation of the European week for Safety and Health 2000
CRR 358		Improving the safety of workers in the vicinity of mobile plant
CRR 359		Modelling of dense gas dispersion in tunnels
CRR 360		JIP on carbon monoxide issues: long term reliability of domestic CO alarms
CRR 361		Occupational exposure to noise and hearing difficulties in Great Britain
CRR 362		Safety related aspects of coast control on pedestrian operated industrial trucks
CRR 363		Best practice for risk based inspection as part of plant integrity management
CRR 364		Industrial rope access - investigation into items of personal protective equipment
CRR 365		An intervention using a self help guide to improve the coping behaviour of nightshift workers and its evaluation
CRR 366		New requirements for the transport of explosives by road
CRR 368		Falls of ground risks in coal mines face roadways

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