

# MAINSTREAM RESEARCH NEWS



ISSUE 26

OCTOBER 2003

## □ HSE's SCIENCE AND TECHNOLOGY RESOURCES – FUTURE NEEDS

The work of HSE covers a diverse range of issues across a wide variety of industries, sectors and workplaces. In addressing these issues, HSE has always aimed to use science and technology (S&T) to characterise the problem and underpin the development of well-founded practical solutions. HSE's S&T community is diverse in terms of specialisms covered, the types of work undertaken and the organisational and geographical location of staff. Specialisms range from all forms of engineering, through chemical, biological and medical sciences to human factors and behavioural and social sciences. Specialists work in HSE's operational directorates across the UK as well as in the Policy Group, Corporate Science and Analytical Service (CoSAS) Directorate and HSE's Health and Safety Laboratory.

Previous reviews of HSE's S&T have resulted in a clearer understanding of how this resource should be used and organised. The next stage in this evolutionary process is forward planning to ensure that HSE has the S&T resources it will need to address the challenges presented by HSC/E's new priorities. This will involve looking at how the balance of HSE's current S&T resource must change so that the organisation can deliver HSC's vision for occupational health and safety. HSE's present mix of scientists, specialists and medics is more a reflection of past activity rather than being designed for current needs and it may not

reflect the considerable changes that HSE and the environment in which it works have undergone. HSE needs to take a fundamental look at what S&T resources it will need in future to best fulfil its role of preventing and reducing ill health and accidents in the workplace. HSE's Corporate Science and Knowledge Unit (CSKU), which forms part of CoSAS, is taking this work forward through a project commissioned by HSE's Chief Scientist and endorsed internally by the Operational Management Forum (OMF), the joint Policy Group Directors and the Science and Innovation Strategy Committee (SISC).

As a starting point, this project will examine the amount, type, disposition and use of HSE's current S&T resource across the whole of the organisation to establish a clear baseline from which to work. The project will then go on to identify the required future mix of scientific, engineering and medical resources for HSE, based on: HSE's mission and vision; emerging strategic priorities; industry trends; accident and incident trends and causation; and public and societal concerns.

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## □ WHAT'S NEW?

### □ DEVELOPMENT OF COMPUTED RADIOGRAPHY (CR) PROCEDURES TO REPLACE FILM-BASED RADIOGRAPHY FOR DEFECT DETECTION IN WELDS AND CASTINGS

(Contractor: The Welding Institute)

Conventional film radiographic, non-destructive testing using X-ray and gamma ray sources has been used routinely to detect defects in welds and castings for decades. However, film radiography can be slow, highly operator dependant, labour intensive and potentially hazardous, due to the chemicals used in film development and high intensity radiation used to expose the film.

The use of CR systems has increased across a number of industry sectors over the last 10 years. These systems utilise reusable phosphor imaging plates to capture radiographic images, which can then be scanned, stored and viewed digitally.

This project will evaluate current CR systems against conventional film-based radiography for the inspection of welds and castings, using X-ray and gamma sources and taking into account a number of factors, including defect detection capability, image quality, exposure times and radiographic source voltage. The economic and safety benefits of switching from film radiography to CR will also be evaluated.

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### □ SAFETY ASSESSMENT OF SUPERVISION IN THE CHEMICAL INDUSTRY

(Contractor: Entec UK Ltd)

There are many management initiatives adopted by the chemical industry that impact upon the delivery of supervision.

Some companies retain traditional roles such as foreman, whilst others employ team leaders in self managed teams or a co-operative autonomous work group. Certain forms of supervision delivery are more appropriate than others in particular organisations. Selection of the most appropriate form of supervision can have a significant impact on health and safety and it is essential (for companies, their employees and HSE Inspectors) that the impact of different types of supervision on safety performance can be assessed.

This project aims to identify safety performance assessment criteria, which can be used to assess the suitability of different forms of supervision delivery in the various organisational structures found in the chemical industry. The work will also provide the tools required by chemical companies and HSE Inspectors to identify the most appropriate forms of supervision delivery to ensure good safety performance.

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### □ DEVELOPING PRACTICAL SOLUTIONS FOR REDUCING MUSCULOSKELETAL DISORDERS (MSDs) IN CONSTRUCTION TRADES

(Contractor: Hu-Tech Associates Ltd)

Construction has been identified as being in the top three industrial sectors in the UK for prevalence of MSDs. Estimates suggest that up to 30% of the construction workforce is significantly affected by work-related MSD injuries and MSD problems are particularly prevalent in trades such as bricklaying, plastering and joinery. However, many of the risk factors and solutions are already known.

The purpose of this research is to identify current best practice and possible/suitable risk reduction measures, and will investigate the practicability of applying these in the bricklaying, plastering and joinery trades in order to contribute to a reduction in incidence of MSD in these trades.

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### □ MATHEMATICAL MODELLING OF THE STABILITY OF PASSENGER-CARRYING, TANDEM SEAT ALL TERRAIN VEHICLES (ATVS)

(Contractor: MIRA Ltd)

For the first time passenger carrying, tandem seat ATVs are being imported for supply in the UK. HSE's policy to date, accepted by industry, has been that passengers must not be carried on sit-astride ATVs. In reviewing this policy, there is a lack of information about the stability limits of this new type of ATV when a passenger is being carried. Also, there are no recognised training courses for this type of ATV. HSE has been asked for their view on what would constitute suitable training by one of the main Sector Skills Councils. Consequently, this research will obtain information, for policy development and regulatory purposes, on the stability of passenger carrying, tandem seat ATVs when an operator and passenger are being carried in a range of topographical situations.

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## □ WHAT'S NEW?

### □ REVISION OF BODY SIZE CRITERIA IN STANDARDS PROTECTING PEOPLE WHO WORK AT HEIGHT

(Contractor: Ergonomics and Safety Research Institute, Loughborough University)

Standards for personal protective safety equipment for workers at height (BS EN 364 – Personal protective equipment against falls from height – Test methods) are designed and tested to withstand weights of up to 100kg. This body mass representation is reputedly drawn from anthropometry of the general population. The 95<sup>th</sup> percentile weight for UK males (aged 18 to 64 years) is 101.1kg or 15st 13lb. However, it has been observed that many people who work at height are not within the normal size distribution of UK adults. Anecdotally, one organisation reported that 80% of its employees that worked at height weighed over 100kg. If this is the case, safety equipment such as harness and lanyards are unlikely to provide sufficient protection for all users. The additional weight of work clothing, tools and materials and the safety equipment itself compound this issue. The current test specification may not truly represent the working population and may therefore offer a reduced level of safety. This research will collect and statistically validate basic body size and weight data for people who work at height, as well as corresponding data on clothing, tools, materials and safety equipment used. This information will be used to establish whether the current design standard is sufficient. If appropriate, recommendations for any changes to the standard will be made to enable hazards to be designed out at source.

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### □ PERSONNEL TODAY – WORK RELATED STRESS SURVEY

(Contractor: Personnel Today Portfolio)

Central to HSE's Work-related Stress priority programme is the need to influence UK organisations to tackle this topic in ways that are aligned with HSE's current thinking. It is known from previous research undertaken by the Health and Safety Laboratory (SMEs managers' perceptions of work-related stress) that, whilst most managers acknowledge the existence of work-related stress, some expressed attitudes and perceptions that could be construed as representing barriers to appropriate action. As part of the priority programme, a communication has been developed to ensure that key messages reach stakeholders and that they feel appropriately engaged in, and can influence, the development of the overall strategy. A key target audience in this respect are human resource managers, as they are likely to play a major role in determining organisational thinking and response and they also have access to resources. 'Personnel Today' is the leading publication for human resource staff. It runs an annual survey, in collaboration with sponsoring organisations, on current topics of interest. This year's survey is on work-related stress and HSE has agreed to fund the survey in order to collect further information about the perceptions of managers on work-related stress issues. 'Personnel Today' will also publish the findings of the survey. This will be timed to coincide and link with publication of HSE's new guidance on work-related stress.

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### □ SLIP AND TRIP HUMAN FACTORS INTERVENTION STUDY IN THE FOOD RETAIL SECTOR

(Contractor: Health and Safety Laboratory)

The prevalence of slip and trip accidents is highlighted by the setting of a Priority Programme to address this issue. This new research project draws on and utilises a number of elements to work with major players in the food retail sector. Previous research has explored the potential to develop measures that address latent influences on slip and trip accidents in the food retail sector. Also, tools to measure safety behaviour performance on slip and trip hazards have been developed, which provide feedback that management can use to develop and monitor the effectiveness of practical interventions. Additionally, the development of measures of safety culture, in the form of workplace attitude surveys, provides a benchmark of staff perceptions of the status of health and safety within a company. This approach highlights where safety management/performance is weak and helps to set an agenda for intervention strategies to address weaknesses. Drawing these elements together, this project will apply behaviour and culture measures to demonstrate their effectiveness in the development of intervention strategies and monitoring of progress thereby providing the food retail sector with tools to measure, monitor and demonstrate their commitment to the management of slip and trip risks.

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## □ WHAT'S NEW?

### □ ROLL OVER PROTECTIVE STRUCTURES (ROPS) STANDARDS AND OPERATOR PROTECTION ON SMALL VEHICLES

(Contractor: Silsoe Research Institute)

Overturns are a common cause of fatal and serious injury, occurring with a wide range of mobile machinery. The Provision and Use of Work Equipment Regulations (PUWER) requires the fitting of roll over or tip over protective structures to work equipment where the risks justify this. The use of mini mobile equipment and small tractors is ever increasing and a previous HSE research project 'Methods for optimising the effectiveness of ROPS' (Ref. 4237/R36.088 – published as Contract Research Report [425](#)) showed that although there are 52 different standards for ROPS on a wide variety of vehicles, there are no design or test standards for ROPS on small mobile work equipment. This prevents ROPS being fitted under PUWER to many small workplace vehicles, including small tractors, although drivers are at risk of injury due to the likelihood of roll over. There is a need to develop consistent criteria for small workplace vehicle/small tractor ROPS, taking account of current good practice developed for other vehicles.

This work will develop a test method to show the feasibility of combining ROPS requirements from different standards and will identify criteria that can be used for the design of ROPS for mini mobile equipment and mini tractors

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### □ FATIGUE OFFSHORE – PHASE 3

(Contractor: Cardiff University)

Fatigue in offshore workers and effect on collision risk, fire and explosion is of concern to HSE and the offshore industry. Previous research has shown that a significant proportion of offshore workers feel that their working hours and shift patterns lead to fatigue and are detrimental to their health and safety. Rotating shift patterns, long work hours and poor sleep are all associated with fatigue.

This project, funded in collaboration with the Maritime and Coastguard Agency, extends previous and ongoing research, which has investigated offshore oil support shipping, the offshore oil industry, ferries, near-sea tankers, semi-submersibles and shore-based maintenance staff. The research will examine a wider range of shipping, such as fishing and short-sea vessels, long haul tankers container ships and cruise ships and also aims to increase knowledge of the interface between ships and installations/ports. As part of the work, surveys will be carried out to investigate the effects of fatigue on workers' perception of risk of collision and other aspects of risk perception (such as fire/explosion risk). Offshore rescue will be investigated, with greater focus on the impact of fatigue on tasks done by non-mariners (medical personnel, coastguards, etc). This will be linked to task analysis of jobs to assess the risk from fatigue. The project will also consider development of fatigue and after effects of tours of duty at sea on fatigue during leave.

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### □ EVALUATION OF THE RISK EDUCATION WEBSITE FOR SECONDARY-AGED STUDENTS

(Contractor: University of York)

HSE has worked collaboratively with the Chemical Industry Education Centre in the development of their risk education website for 11 to 18 year olds at [www.risk-ed.org](http://www.risk-ed.org), which has been part of HSE's response to action point 33 of Revitalising Health and Safety, to 'include more extensive coverage of risk concepts and health and safety in school curricula'. The website is aimed at raising awareness of risk issues, improving understanding of statistics in comparing risks and allowing practical application of risk management skills through discussion of case studies. Websites are popular as a means of passing on information, and this site provides a useful opportunity to assess the value of the internet in meeting project aims.

The evaluation exercise will assess changes in the perceptions of young people towards risk. A questionnaire will be added to the website to enable 'snap shot' samples of views to be collected. These will help to provide a baseline, and over time may provide evidence of changes in general perception. A focus group study will compare the perceptions of students using the website as part of their studies with those of students who have not visited the website or who have come across the website by chance. The evaluation exercise will contribute towards a better understanding of students' perceptions of risk and will help to determine suitable material for presentation via the website.

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## □ EXAMPLES OF RECENTLY COMPLETED PROJECTS

### □ THE PROMOTION OF HUMAN FACTORS IN THE ONSHORE AND OFFSHORE HAZARDOUS INDUSTRIES

(Contractor: Greenstreet Berman Ltd)

Human performance has long been recognised as a major contributor to risk in hazardous industries, underlying most major accidents. Because of this, HSE has aimed to increase the level of application of human factors in the onshore and offshore oil and gas hazardous industries. This research project has explored duty holders awareness and attitudes towards human factors and how best to promote human factors to achieve a higher uptake. The results of this study have reinforced the need for HSE to promote human factors. The results also justify the current range of promotional work being carried out. The current level of awareness and understanding of human factors was found to be low and further educational and awareness-raising work was required. Human factors were often regarded as common sense and as ill defined by duty holders. If the aim is to change practice, it remains necessary to demonstrate that human factors entail more than the application of intuitive ideas. The study findings have indicated that industry does look to HSE to provide the lead on human factors issues and expects HSE to provide appropriate information and guidance. The general reaction to HSE work is positive with a simple request for HSE to do more. There was need to create a distinct human factors 'brand' that distinguishes HSE advice and requirements from common sense and so conveys the message that there is scope for improvement in duty holders' practices.

This review of past experience and survey of current opinion has indicated that the application of human factors is driven by major accident safety concerns and regulatory expectations. Whilst the wish to avoid the cost associated with a major accident is an obvious motivation, it has been difficult to find any evidence of human factors being applied for the sake of productivity or other commercial or productivity reasons. Accordingly, it was concluded that the 'message' and 'brand' should draw on the idea of 'human factors for major accident prevention', associated with the values of corporate responsibility and a credible set of safety claims.

The report from this study has combined the lessons learned from other examples of shifts in safety management thinking with survey respondents' suggestions to identify methods for increasing and maintaining duty holders' awareness, understanding and motivation to apply human factors. The report has been published in HSE's Research Report series as [RR149](#)

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### □ CULTURAL INFLUENCES ON HEALTH AND SAFETY ATTITUDES AND BEHAVIOUR IN SMALL BUSINESSES

(Contractor: Middlesex University Business School)

The work carried out on this study sought to identify the role of cultural influences on health and safety attitudes and behaviours in small and micro-enterprises and to look at related issues concerning channels of communication and the role of HSE.

The main cultural influence on health and safety attitudes and behaviour in small businesses was found to be the organisational culture that typifies many such enterprises, reflecting less formal approaches to management, the preference of owner/managers for autonomy and the closeness of employer/employee relations in small businesses. With regard to some ethnic minority businesses, ethnic background can be an important second order influence in some cases. Other influences identified relate to previous management experience, educational/skill levels and gender. However, all these influences need to be understood in the context of the resource constraints faced by small businesses and the key role of a number of external influences. As for authoritative and credible channels of communication by which health and safety messages can be disseminated, it was concluded that health and safety inspectors themselves were currently the most commonly used and preferred source of information and advice for most small businesses. As far as other conduits are concerned, in some areas/communities, ethnic minority intermediaries can help the dissemination process with ethnic minority businesses, provided that resources are made available to facilitate this. Sector-based associations appear to have great potential for more widespread influence with such enterprises, although to achieve this associations need to become more inclusive in terms of ethnic diversity and the size range of businesses making up their membership.

The report from this work has been published as [RR150](#) in HSE's Research Report series.

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## □ EXAMPLES OF RECENTLY COMPLETED PROJECTS

### □ BEST PRACTICE IN REHABILITATING EMPLOYEES FOLLOWING ABSENCE DUE TO WORK-RELATED STRESS

(Contractor: Institute for Employment Studies)

There are various approaches to reducing and managing work-related stress and although prevention is often seen as the priority, it is essential that preventative approaches be accompanied by rehabilitation, especially when preventative actions and standards are being researched and developed. This project was commissioned: to identify current organisational practices of job retention and vocational rehabilitation after a period of ill-health stemming from work related stress; to review evidence of their effectiveness; and to select and describe examples that match the evidence-based practices identified using case studies from different organisations. Rehabilitation typically starts with contact between the employee and the organisation at the beginning of the employee's absence and ends with the employee's full return to work. For each stage, a report of what is known from the literature followed by examples of good practice from case study organisations has been provided. The elements of best current practice involve: 1) early contact with the employee – many organisations interviewed contacted employees in the first week of absence to offer general support and the organisation's concern. Intervention and treatment were not discussed at this stage; 2) early health assessment – experts suggest that by two weeks absence, it is possible to tell if the individual will recover spontaneously. By four weeks, the intervention or treatment should start with referral to occupational health (or equivalent) for a health assessment; 3) quality of the health assessment – the main issue for organisations was the specificity of the diagnosis or assessment, which had to be accurate and the physician needed to be sympathetic and supportive. Referral for treatment must be appropriate, based on the identified need of the employee; 4) developing an agreed rehabilitation plan – employee involvement is critical and the plan should be developed and initiated at the appropriate time for the employee; 5) therapeutic interventions – most organisations visited offered therapy as part of rehabilitation following stress-related illness. There is growing evidence about the efficacy of therapy and it is important for organisations to understand how best to implement and manage their use; 6) flexible return to work options – a key factor in rehabilitation. Workers who have been absent from work through illness will achieve their former functional level more quickly if allowed to return to work gradually; and 7) work adaptation and adjustments - constructive and positive ways of assisting an individual back to work. There were clear examples from the case study organisations. Organisations were supportive of the success of these approaches. The report produced from this work has been published in HSE's Research Report series as [RR138](#).

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### □ EFFECTS OF ADJACENT OBJECTS ON WIND PRESSURE FIELDS AROUND BUILDINGS

(Contractor: Building Research Establishment)

This work has been undertaken to help develop guidance in BS5440 for the siting of open flue terminals for natural draught domestic gas boilers. The work aimed to investigate the effects of adjacent structures and topographical features on wind pressure around dwellings and to identify scenarios where the likelihood of flue flow reversal was high. A combination of wind tunnel testing and computational modelling has been used. The results show that for a standard domestic dwelling with a 45° pitch roof, the maximum positive pressure on the roof occurs when an adjacent structure is directly downwind. The magnitude of the pressure is dependant on the height and width of the structure and its distance from the dwelling. The maximum pressure experienced by a flue terminal located above a 45° pitch roof may exceed that for the isolated dwelling by up to 60% when a very tall or wide structure, such as an embankment, is located close to the dwelling. For a 30° pitch roof, the percentage increase in maximum roof pressure with an adjacent structure present, relative to the isolated dwelling, is much greater than for the 45° pitch roof. However, the magnitude of the maximum pressures remains lower for the 30° pitch roof than for the 45° pitch roof. The increased risk of flue flow reversal due to the presence of an adjacent structure is greater for the 30° pitch roof relative to the isolated dwelling case, although the absolute risk for the 45° pitch roof is still greater. For 45° and 30° pitch roof dwellings located in 3- and 9-house terraces, the ridge vent pressures were negative for most wind directions. For the 45° pitch roof, when positive pressures occur on the upwind side of the ridge (0° and 30° wind direction), much greater negative pressures occur on the downwind side, thus the net wind effect will enhance ventilation from the flue terminal. The results from this work have been published as [RR157](#) in HSE's Research Report series.

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## □ EXAMPLES OF RECENTLY COMPLETED PROJECTS

### □ EFFECTS OF PRESCRIBED MEDICATION ON PERFORMANCE IN THE WORKING POPULATION

(Contractor: Brunel University and Loughborough University)

The prevalence of depression and anxiety has increased sharply in recent years leading to extensive use of medication. Little existing information was available on how the symptoms of anxiety and depression and the medication for these conditions impacted on health and safety at work. The aims of this study were: to examine the relationship between psychological morbidity, prescribed medication and work performance in different groups of workers; to investigate the relationship between prescribed medication and self reported incidence of accidents and near miss experiences; to explore the issue of mental health amongst employees from the employer's perspective; and to review the implications for advice that should be given to workers and employers.

The research used focus groups with sufferers to collect data on the personal experiences of mental health problems and the impact of psychotropic drugs. Focus groups were also conducted with staff in human resource, personnel, occupational health and health and safety departments, to explore the organisational perspectives on mental health in the workplace. As part of the validation process, the results were presented to an expert panel comprising trade union representatives, researchers and practitioners in occupational medicine, health and clinical psychology, health and safety and psychiatry.

Workers found it difficult to distinguish between the effects of their medication and the symptoms of anxiety and depression. Both the symptoms and the medication were reported to impair work performance. Participants described a variety of accidents and near misses that they attributed to their condition or to the side effects of the medication. Those workers who took part in this research that had responsibility for others at work, such as teachers, health care workers and managers, appeared to present a particular risk to safety in the workplace.

Non-compliance with medication was common due to unpleasant side effects, lack of improvement in symptoms or because the medication initially made them feel worse. Employees were largely ill prepared for their medication regime and would have welcomed more information from their doctors.

Drawing on the evidence collected, the report produced from this work, published as [RR57](#) in HSE's Research Report series, makes recommendations for the prevention and management of anxiety and depression in the workplace and outlines areas for improvement in health care.

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## □ PROJECT LISTING

### NEWLY COMMISSIONED PROJECTS: JULY – SEPTEMBER 2003

Project No	Project Title	Project Officer
<b>Block 1 - Priority Programmes</b>		
R32.104	Tower crane stability.	Ms D Kahlon (Tel: 0207 717 6174). <a href="mailto:debo.kahlon@hse.gsi.gov.uk">debo.kahlon@hse.gsi.gov.uk</a>
Z33.105	A technical guide to the selection and use of fall prevention and protection methods when working at height – extension to include safety decking.	Mr A East. Tel: 0207 556 2196 <a href="mailto:andrew.east@hse.gsi.gov.uk">andrew.east@hse.gsi.gov.uk</a>
R33.114	Revision of body size criteria in standards protecting people who work at height	Mr M Holden. Tel: 0151 951 3725 <a href="mailto:martin.holden@hse.gsi.gov.uk">martin.holden@hse.gsi.gov.uk</a>
R33.115	Peer review of analysis of specialist group reports on causes of construction site accidents	Ms D Kahlon (Tel: 0207 717 6174). <a href="mailto:debo.kahlon@hse.gsi.gov.uk">debo.kahlon@hse.gsi.gov.uk</a>
R36.195	Roll-over protective structures standards and operator protection on small vehicles	Mr G Male. Tel 0151 951 4034 <a href="mailto:gil.male@hse.gsi.gov.uk">gil.male@hse.gsi.gov.uk</a>
R36.196	Mathematical modelling of the stability of passenger-carrying, tandem seat All Terrain Vehicles (ATVs)	Ms D Kahlon (Tel: 0207 717 6174). <a href="mailto:debo.kahlon@hse.gsi.gov.uk">debo.kahlon@hse.gsi.gov.uk</a>
R54.091	Personnel today- Work-related stress survey	Dr C Mackay. Tel: 0151 951 4565 <a href="mailto:colin.mackay@hse.gsi.gov.uk">colin.mackay@hse.gsi.gov.uk</a>
R55.104	Developing practical solutions for reducing musculoskeletal disorders in construction trades	Ms D Kahlon (Tel: 0207 717 6174). <a href="mailto:debo.kahlon@hse.gsi.gov.uk">debo.kahlon@hse.gsi.gov.uk</a>
R55.105	Risk perception in relation to musculoskeletal disorders	Ms D Brown. Tel: 0207 717 6037 <a href="mailto:dorothy.brown@hse.gsi.gov.uk">dorothy.brown@hse.gsi.gov.uk</a>
R64.096	Workplace transport problems – Data collecting and mining	Ms D Kahlon (Tel: 0207 717 6174). <a href="mailto:debo.kahlon@hse.gsi.gov.uk">debo.kahlon@hse.gsi.gov.uk</a>
R67.160	Slip and trip human factors intervention study in the food retail sector	Ms D Kahlon (Tel: 0207 717 6174). <a href="mailto:debo.kahlon@hse.gsi.gov.uk">debo.kahlon@hse.gsi.gov.uk</a>

## □ PROJECT LISTING

<b>NEWLY COMMISSIONED PROJECTS: JULY – SEPTEMBER 2003</b>		
<b>Project No</b>	<b>Project Title</b>	<b>Project Officer</b>
<b>Block 1 - Priority Programmes (cont.)</b>		
R67.161	Identifying human factors associated with slip and trip accidents	Ms D Kahlon (Tel: 0207 717 6174). debo.kahlon@hse.gsi.gov.uk
<b>Block 2 - Work in the Major Hazards industries</b>		
R31.091	Evaluation of test methods for characterising weldable martensitic stainless steels	Mr G Hughes. Tel: 0151 951 4005 graeme.hughes@hse.gsi.gov.uk
R32.101	Flow induced pulsation in flexible risers	Mr A Jackson. Tel: 0114 291 2453 alan.jackson@hse.gsi.gov.uk
R34.006	Metocean data network	Mr C Ransome. Tel: 0151 951 3866 charles.ransome@hse.gsi.gov.uk
R39.001	Extension of simplified explosion analysis methods – Phase 1	Mr D Shuter. Tel: 0114 291 2375 danny.shuter@hse.gsi.gov.uk
R67.165	Fatigue offshore – Phase III	Mr A Jackson. Tel: 0114 291 2453 alan.jackson@hse.gsi.gov.uk
R68.088	Safety assessment of supervision in the chemical industry	Mr A Jackson. Tel: 0114 291 2453 alan.jackson@hse.gsi.gov.uk
R72.089	Sensitivities and uncertainties in Transco's mains replacement prioritisation model and proposals for a network-based mains replacement programme	Mr T Small. Tel: 0114 291 2431 tim.small@hse.gsi.gov.uk
R72.090	Technical support for computer programme - MISHAP	Mr I Hirst. Tel: 0151 951 3526 ian.hirst@hse.gsi.gov.uk
<b>Block 3 - Compliance</b>		
R32.106	Development of computed radiography procedures to replace film based radiography for defect detection in welds and castings	Mr H Bainbridge. Tel: 0151 951 4651 harry.bainbridge@hse.gsi.gov.uk
R33.118	Publication of proceedings – Engineering and health in compressed air work, second international conference 2002	Mr R Schofield. Tel: 0151 951 4587 roger.schofield@hse.gsi.gov.uk
R51.246	Evaluating the effectiveness of legislation, technology and working methods for reducing occupational exposure in the foundry industry	Dr A Phillips. Tel: 0151 951 4753 andy.phillips@hse.gsi.gov.uk
R51.248	Development of statistical approaches to handling large occupational exposure data sets	Dr A Phillips. Tel: 0151 951 4753 andy.phillips@hse.gsi.gov.uk
R64.102	Building an evidence base for health and safety compliance – A literature review and evaluation of enforcement action	Ms C Elliott-Minty Tel: 01519514217 celia.elliott-minty@hse.gsi.gov.uk
R68.092	An evidence-based evaluation of how best to secure compliance with health and safety law	Ms C Elliott-Minty Tel: 01519514217 celia.elliott-minty@hse.gsi.gov.uk
<b>Block 4 - Mandatory Activities</b>		
R02.063	Investigations into concerns about BS EN 12874:2001 Flame arresters – Performance requirements, test methods and limit for use	Mr R Olsen. Tel: 0207 717 6243 rob.olsen@hse.gsi.gov.uk
R51.245	CHIP Database – Updates for the 29 <sup>th</sup> ATP of the Dangerous Substance Directive (DSD)	Mr D Fletcher. Tel: 0207 717 6004 david.fletcher@hse.gsi.gov.uk
R56.105	Further update of cancer incidence and cancer mortality in a cohort of semiconductor workers	Mr J Grant. Tel: 0207 717 6096 john.grant@hse.gsi.gov.uk
R63.068	Standards evaluation – Economic impact analysis	Mr A Meads. Tel: 0207 717 6296 andrew.meads@hse.gsi.gov.uk
R64.099	Evaluation of the risk education website for secondary-aged students	Mr R Olsen. Tel: 0207 717 6243 rob.olsen@hse.gsi.gov.uk
R73.027	Measuring compliance of the Employers' Liability (Compulsory Insurance) – ELCI – Act 1969	Mr J Grant. Tel: 0207 717 6096 john.grant@hse.gsi.gov.uk
<b>RECENTLY COMPLETED PROJECTS: JULY – SEPTEMBER 2003</b>		
<b>Project No</b>	<b>Project Title</b>	<b>Project Officer</b>
<b>Block 1 - Priority Programmes</b>		
R33.099	Better, easier, safer design through construction design and management (CDM)	Mr A Maitra. Tel: 0151 951 4634 hash.maitra@hse.gsi.gov.uk
R46.078	Generic modification of compressed oxygen self rescuers for use in compressed air tunnels between 1 and 3.5 bar.	Mr D Lamont. Tel: 0151 951 4818 donald.lamont@hse.gsi.gov.uk
R49.007	Work organisation approaches for ergonomic interventions	Mr T Shaw. Tel: 0151 951 4552 trevor.shaw@hse.gsi.gov.uk

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<b>RECENTLY COMPLETED PROJECTS: JULY – SEPTEMBER 2003</b>		
<b>Project No</b>	<b>Project Title</b>	<b>Project Officer</b>
<b>Block 1 - Priority Programmes (cont.)</b>		
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
R54.087	To identify examples of best current practice in rehabilitating employees into work after a period of ill-health stemming from work related stress	Ms N Williams. Tel: 0207 717 6593. nina.williams@hse.gsi.gov.uk
R55.088	Evaluation of 'Back in Work' pilot projects	Ms J Ford. Tel: 0207 717 6673 jean.ford@hse.gsi.gov.uk
R64.069	Determining the incidence and risk factors for non-fatal childhood farm accidents and zoonoses in the UK	Mr G Walker. Tel: 0115 9712800 graeme.walker@hse.gsi.gov.uk
<b>Block 2 - Work in the Major Hazards Industries</b>		
R04.083	Fire compartmentation in chemical warehouses	Mr A Tyldesley. Tel: 0151 951 4769 alan.tyldesley@hse.gsi.gov.uk
R05.099	Guide to process intensification	Ms J Etchells. Tel: 0151 951 4764 janet.etchells@hse.gsi.gov.uk
R67.153	The promotion of human factors in the onshore and offshore hazardous industries	Mr P Mullins. Tel: 0151 951 3955 peter.mullins@hse.gsi.gov.uk
R72.074	Sensitivities and uncertainties in Transco's main replacement prioritisation model and proposals for a network based mains replacement programme	Mr T Small. Tel: 0114 291 2431 tim.small@hse.gsi.gov.uk
R72.078	Support for the computer programme - MISHAP	Mr I Hirst. Tel: 0151 951 3526 ian.hirst@hse.gsi.gov.uk
R75.037	Building wakes in density stratified boundary layers	Dr S Porter. Tel: 0151 951 4626 steve.porter@hse.gsi.gov.uk
3546	Studless chain corrosion fatigue – Joint industry project	Mr M English. Tel: 0207 717 6783 max.english@hse.gsi.gov.uk
3887	Assessment of valve failure – Identify and determine the common generic cause	Mr R Sharma. Tel: 0207 717 6925 ravi.sharma@hse.gsi.gov.uk
3954	The applicability of on-line monitoring for assurance of structural integrity	Mr A Stacey. Tel: 0207 717 6774 alex.stacey@hse.gsi.gov.uk
4006	Accident statistics for offshore fixed units on the UKCS	Mr E Young. Tel: 0207 717 6926 eoin.young@hse.gsi.gov.uk
4030	Accident statistics for offshore units on the UKCS	Mr D Tee. Tel: 0207 717 6923 david.tee@hse.gsi.gov.uk
3929	ISO 13819-6 Structural strength acceptance criteria	Mr W Jones. Tel: 0207 717 6796 wayne.jones@hse.gsi.gov.uk
4022	Reliability-based calibration of design code for suction anchors	Mr R Martland. Tel: 0151 951 3082 roland.martland@hse.gsi.gov.uk
<b>Block 3 - Compliance</b>		
R41.119	Carbon monoxide incident data 2001 -2002	Mr A Jones. Tel: 0151 951 3273 allyn.jones@hse.gsi.gov.uk
R41.120	Validation of ozone emission rate measurements in welding	Dr B Rajan. Tel: 0151 951 3318 bob.rajan@hse.gsi.gov.uk
R41.124	The effect on adjacent objects of the wind pressure field around buildings	Ms P Bradley. Tel: 0151 951 4202 penny.bradley@hse.gsi.gov.uk
R64.092	Development of an enforcement management model (EMM) training package suitable for use by Local Authorities	Mr A Plom. Tel: 0207 717 6493 alan.plom@hse.gsi.gov.uk
R32.090	Joint industry project – Phased array technology – A practical evaluation of the benefits	Mr G Hughes. Tel: 0151 951 4005 graeme.hughes@hse.gsi.gov.uk
<b>Block 4 - Mandatory Activities</b>		
R46.084	The application of automatic data capture technologies	Dr J McGuinness. Tel: 02077176414 john.mcguinness@hse.gsi.gov.uk
R51.133	Molecular mechanisms of glutathione-depleting neurotoxins	Mr R Cary. Tel: 0151 951 4820 richard.cary@hse.gsi.gov.uk
R51.200	Risk assessment for occupational dermal exposure to chemicals – Quantitative surveys	Dr B Rajan. Tel: 0151 951 3318 bob.rajan@hse.gsi.gov.uk
R51.226	Evaluation and further development of EASE Model - 2	Dr A Phillips. Tel: 0151 951 4753 andy.phillips@hse.gsi.gov.uk
R51.228	Research workshop: COSHH Essentials	Ms C Sullivan. Tel: 0207 717 6341 carol.sullivan@hse.gsi.gov.uk

## □ PROJECT LISTING

RECENTLY COMPLETED PROJECTS: JULY – SEPTEMBER 2003		
Project No	Project Title	Project Officer
<b>Block 4 - Mandatory Activities (cont.)</b>		
R52.132	Chronic health effects of exposure to biological agents	Dr M Woods. Tel: 0151 951 3256 mark.woods@hse.gsi.gov.uk
R53.182	Identification of factors leading to repetitive decompression illness (DCI) in compressed air tunnel workers in the UK	Mr D Lamont. Tel: 0151 951 4818 donald.lamont@hse.gsi.gov.uk
R56.095	Development of risk reduction strategies for the prevention of dermatitis in the UK printing industry	Ms S Peace. Tel: 01159 712800 samantha.peace@hse.gsi.gov.uk
R56.098	Questionnaire – predictors of asthma and occupational asthma	Dr R Rawbone. Tel: 0151 951 4555 roger.rawbone@hse.gsi.gov.uk
R62.091	Cultural influences on health and safety attitudes and behaviour in small firms	Ms P Nash. Tel: 0207 717 6494 pauline.nash@hse.gsi.gov.uk
R67.149	Performance effects of psychotropic drugs – Workers' views	Mr P Kelly. Tel: 0151 951 4070 peter.kelly@hse.gsi.gov.uk
R68.042	Health and safety management in business schools	Mr R Daniels. Tel: 0151 951 4147 richard.daniels@hse.gsi.gov.uk
R68.069	Health and safety responsibilities of company directors and management board members	Mr N Stone. Tel: 0207 717 6484 neal.stone@hse.gsi.gov.uk
R68.080	The provision of health and safety information through company accounts and other publicly available documents	Mr N Stone. Tel: 0207 717 6484 neal.stone@hse.gsi.gov.uk
R68.083	The relationship between the railway industry and HSE	Mr R Olsen. Tel: 0207 717 6243 rob.olsen@hse.gsi.gov.uk

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RR108	The performance capabilities of crews of daughter craft involved in offshore operations in the oil and gas industries
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RR114	Hand arm vibration syndrome – Underlying causes and risk control in the construction industry
RR115	Erosion in elbows in hydrocarbon production systems
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RR118	Nonlinear materials behaviour on strong vibration effects
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RR122	Cellular aspects of occupational asthma: Immunological studies in isocyanate exposed subjects
RR123	Use and effectiveness of mobile elevating work platforms (MEWPs) for tree work
RR124	Pulse pressure testing of 1/4 scale blast wall panels with connections
RR125	Evaluation of the implementation of the use of work equipment directive and the amending directive to the use of work equipment directive in the UK
RR126	A comparison of oxygen decompression tables for use in compressed air work
RR128	The safety implications for offshore maintenance of using proprietary management/scheduling software
RR129	Review of external stress corrosion cracking of 22% Cr duplex stainless steel
RR130	Bioaerosol risks at waste composting sites
RR132	Shiftwork and breast cancer: A critical appraisal
RR133	Beacons of excellence in stress prevention
RR134	The provision of health and safety information through company accounts, annual reports and other publicly available documents
RR135	Health and safety responsibilities of company directors and board members
RR136	Evaluation and further development of the EASE model 2.0
RR138	Best practice in rehabilitating employees following absence due to work-related stress
RR140	Evaluation of HSC's ACOP and guidance 'Legionnaires disease: Control of legionella bacteria in water systems
RR141	Risk assessment of inhaled particles using a physiologically-based mechanistic model
RR142	Development of a method for the in-vitro identification of contact allergens
RR144	The Worker Safety Advisor (WSA) pilot
RR148	The case for CDM: better, safer design – a pilot study
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RR155	Dose constraints for comforters and carers
RR156	Causal factors in construction accidents
RR157	The effect of adjacent buildings and topographical features on the wind pressure field around buildings
RR158	Development of risk reduction strategies for the prevention of dermatitis in the UK printing industry
RR159	Attitudes to safety culture among professional drivers and offshore workers
RR164	Questionnaire predictors of asthma and occupational asthma
RR165	Continued appraisal of domestic CO alarms

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