March 2002

Presentation on "Accident Investigation" by Alan Craddock, HSE Strategy and Information Unit

The Chairman introduced Alan by saying that he was no stranger to BHSEA, having served for many years in the Construction sector team in the HSE Midland Region Office. Alan introduced his topic by saying that the HSE had been criticised in the past for inconsistencies in the way inspectors in different parts of the country had investigated accidents. His presentation would be talking about the package the HSE had developed to train inspectors to investigate.

He went on to say that Small and Medium Sized Enterprises (SMEs) were not good, generally, at identifying the **"Underlying Causes"** of accidents and there was a need to address this in the improved HSE package. He also mentioned that a recent **Labour Force Survey** had indicated that there could be as much as **40%** under-recording of accidents in certain categories. This all aggravated the poor quality of information being retrieved from the total population of accidents in the UK. He quoted the following figures from the HSE 2000/2001 Statistics for the UK: -

291 fatalities
27171 major injuries
130047 over 3 day
10046 dangerous occurrences (1999/2000)
2,515 reported diseases

Given this situation, it was important to the HSE, Alan added, for Inspectors to prioritise investigations and it was significant to know that accident incident rates had gone up in certain categories. Types of incident we investigate, he said, are: -

Fatality/major injuries/Amputations/Multiple fractures/ Burns

These were expanded to incorporate the Revitalising H & S priorities, which are: -

Falls from height,
Transport
Diseases
Incidents likely to generate serious public concern
Incidents likely to be a breach of the law
Incidents where there is significant potential for harm

He then listed the reasons that HSE investigated accidents were to: -

identify immediate and underlying causes.

ensure the dutyholder takes appropriate remedial action to prevent reoccurrence.
Evaluate compliance with the relevant statutory provisions;
take enforcement action if appropriate.
provide a training opportunity.
gather intelligence parts of HSE when new technology is involved or to increase knowledge of causes of sector-specific accidents.
probe management arrangements for the control of specific risk.
Influence the law and guidance
Analyse the training needs

From the business perspective the reasons to investigate were: -

Learn lessons
Prevent reoccurrence
Liability claims
Implicit legal "requirement"
Save costs
Efficiency

He added that the hidden costs of accidents had been researched by HSE some years ago and discovered that for every £1 of Direct Accident Cost there was a hidden cost that varied between £8 and £36, depending on the type of business. This gave rise to the "Iceberg" concept of true costs.

As far as the current law requiring incident investigation was concerned, the following were relevant: -

Health and Safety at Work etc Act 1974 – Sections 2 & 3
Management of Health and Safety at Work Regulations 1999 – Regs 3 & 5
NB.: Implicit duties in
Social Security (Claims & Payments) Regulations 1979
Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995
Safety Representatives & Safety Committees Regulations 1977

The HSE research had revealed a wide range of practices: -

Range of Practice varied from 'ad hoc' to 'systems' approaches
- Most at the 'ad hoc' end of the scale
- 'Systems' approaches more likely in large firms

Individual Investigator has major influence -even within 'systems' approaches
Majority of firms **not good** at getting to **underlying causes**
BUT
Firms believe they are good at investigation
Investigations typically involve a line manager and a health and safety specialist
There is little involvement of safety reps.

Alan commented that the GMB had found that involvement of Safety Reps. made a significant reduction in accidents, whilst other issues to tackle are: -

Isolation of investigation findings from revision of assessments
Lack of common 'model' or approach to investigation
Low level of competence in investigation
Complacency about skill level in firms

Alan went on to ask the provocative question, "what characteristics should your accident investigation have?"

•Policy Reflects culture?
- Does it “blame the individual” or are they organisational failures?
- How defensive is it?
- Purpose?
- Aimed at preventing the last accident?

•Scope?
- Collect & learn from all incidents

•Control
- Line management driven
- Performance standards set (key objectives)
- Accountability and transparency?

•Co-Operation
- High employee involvement?
- Design & Operation
- May involve “team” approach

•Measuring
- Check of operation of **'system v process'** criteria
- Check on **“quality”** of investigations

•Review
- Action on system improvements
- A follow up procedure to close out actions
- Analysis of data – common trends

•Communication
- Written system with clear process?
- Good structure of form leading to identification of both immediate & underlying causation?
- Proportionate involvement of managers
- Good records?
Sharing of lessons learned?

•Competence
- Good thorough training for investigators?
- Route for expert help?

- Implementation of recommendations?
- Good broad information collection- clear definitions of what to report & how
- prioritised **SMART** outcomes systematically implemented

Specific
Measurable
Agreed
Realistic
Timescale

Coding & Analysis

Measuring

–Check of operation of **'system vs process'** criteria
–Check on "quality" of investigations

Review

-Action on system improvements
-A follow up procedure to close out actions
- Analysis of data – common trends

Alan then went on to describe the use of HSG65, Successful Health and safety Management, as a framework for improved accident investigation to give: -

A shared HSE/'Industry language
Consistency with inspection of management measures
Flexibility – investigation of immediate and underlying causes

The broad scope of the investigation plan looks at: -

Content Analytical tools, choosing relevant law as standards, identifying causes, breaches, assessing adequacy of evidence.

Process Collecting information, Assembling and considering the evidence, comparing the findings with identifiable standards. This is an iterative process, repeating and refining itself until the optimum conclusions are found.

Feelings The thoughts of the Injured Person, Relatives, Witnesses, Dutyholders and Investigators are all important to consider, as much as what they feel in terms of bereavement, trauma/shock and stress.

Investigations may be carried out at three levels, starting with **Level 3**, Immediate Causes. At this level it is essential to ask **WHAT?, WHEN?, WHERE?, WHO? AND HOW?** in order to discover as much detail as possible. Just as important, though, is the need to ask **WHY?** about **each one of them!** In this way it is possible to

discover crucial evidence about the other levels of investigation. At the end of this the investigator should be able to say if the **workplace precautions are adequate.**

The next level, **Level 2,** is concerned with the effects of: -

Inputs Design/construction, installation, procurement, recruitment, selection of contractors, acquisitions and information

Process Work operations, maintenance, plant and process change, foreseeable emergencies, decommission and demolition.

Outputs Product and service design, packaging and labelling, storage /transport, off-site risks, disposal and pollution control, divestments and information.

This stage helps us to determine **what keeps the workplace precautions in place.**

Level 1, considers the basic management task of **Policy, Organising, Planning/Implementing, Measuring Performance and Reviewing Performance**, which is the framework for Safety Management embraced by HSG65. Levels 1 & 2 concern themselves with the **Underlying Causes** and guide the investigator away from the pitfall of 'blaming the operatives', which is so often the case! The quality, or otherwise, of this system should reveal **how the workplace precautions and risk control measures came into existence – and whether it was good luck or good management!**

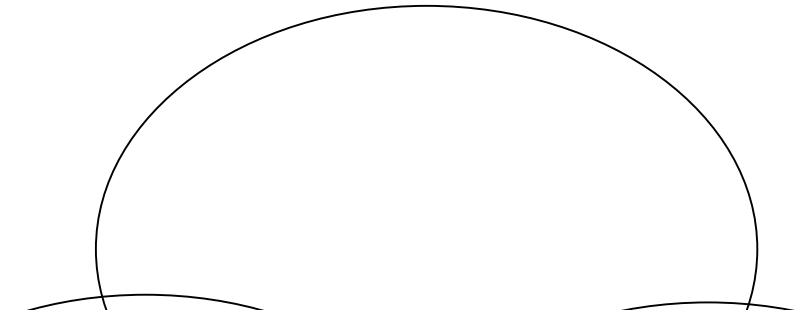
The factors which create good health and safety management are precisely those elements, which a good investigator should explore. HSG 65 stresses the **4Ps – Premises, Plant (and substances), Procedures and People as main resources to be examined.** Each one should be considered in turn and these questions should be asked: -

- Was it a significant factor? (Relevancy and/or adequate provision
- Adequate provision, but not used?
- Adequate provision not maintained?
- Adequate provision never made?

Regarding people, consideration should be made whether: -

- Behaviour was not significant
- The person was unsuitable
- Suitable person was not competent
- A suitable person did the wrong thing.

HSG 48, Reducing Error and Influencing Behaviour, looks in detail at the interlinked influences of Job, Organisation and Individual factors, as follows: -



Examples of Job Factors		
Premises	Plant & Substances	Procedures
Unpleasant working conditions, ergonomics, lighting, workspace, noise, heat.	Illogical design of equipment and instruments, heat.	High workload, missing or unclear instructions, constant interruptions or disturbances, shift work/shift handovers.

Alan concluded by saying that, in addition to the HSG48 and HSG65 already quoted, there was also some sector-specific guidance on the subject of good safety management.

Members' Questions

Brian Rostance of Linford Group asked if RIDDOR was not working, why not change it? Alan replied that it was more important to get the practice of good investigation improved as a matter of urgency, because it cured the problem at source.

Dalvinder Masaun of Sandwell Healthcare NHS Trust asked what Alan had meant when he mentioned **"performance standards".** Alan replied that there were certain **"should do"** actions, which HSE Inspectors were given, such as always contact an accident victim, as it reflects so much on the consequences of faults in the system.

Nick Higginson of GPU Power Engineering enquired about the TUC Protocol and what the HSE, Police and the Unions were doing about Corporate Manslaughter. Alan said that this was part of a very wide discussion with many parties and that the HM

Inspectors automatically thought of a possible manslaughter charge, following a fatal accident.

Mike Robertson of Costain asked about the very sensitive issue of the status of Safety Advisors' reports following an accident. Alan replied that there were three sources of information available to inspectors – Interviews, Observations and. Documents /Reports. Alan went on to say that reports were often produced with recommendations omitted, which restricted their value. He then commented on the case of Regina vs Howe where a report was used to plead mitigating circumstances.

Mark Hoare of Birmingham University asked When HSE investigations should start after the RIDDOR report was submitted. Alan stated that the performance standard would ask for a start within two weeks.

BHSEA Chairman, David Hughes, commented that it was important for any investigation to 'scratch below the surface', to be open about the causes and to ensure that effective remedial action was taken. As there were no other questions, he thanked Alan for a very comprehensive presentation and asked the members to show their appreciation.

Accident Investigation Research at Birmingham University

After the main meeting, **Celeste Jacinto of Birmingham University,** gave a short report on her research and asked for help with the next stage. The aim of this research project is to develop a structured methodology for the investigation and analysis of occupational accidents. The classification scheme of new variables will take into account the *harmonisation process* currently being carried out in all European Union (EU) countries. As a result, it is expected in the future, to gain a better understanding of accident causation mechanisms, which in turn will allow for the development of more efficient prevention strategies.

BHSEA Members were asked to help by providing a few case studies and participating in a couple of working sessions. The aim is to test the performance of a technique developed within the scope of this project. The case studies can be centred on either accidents or near misses that have occurred in your company recently – from the year 2000 to date. Please contact Celeste on Tel: 0121 – 414 4158; Fax: 0121 – 414 4152, or Email: mcj022@bham.ac.uk