HUMAN FACTORS

BRIEFING NOTE No. 10

Communications

Information can be passed from one person to another by word of mouth, in writing or by using signs (e.g. hand signals) or pictures (diagrams, photographs etc.) by computer displays and presentations. In all cases, the information should be complete and accurate, and given to the right person in the right form at the right time. Feedback should be given to the person who makes the first communication so that it's clear that the message was received and is understood. In particular, there should be good communications at shift handover.

Why communications?

Poor communications, especially at shift handover, has been identified as a key contributor to a number of significant accidents including Piper Alpha, Grangemouth, Texas City and Buncefield. The UK Health and Safety Executive (HSE) has produced guidance aimed at improving communications during shift handover (Reference 1) and has also researched shift handovers in 16 offshore companies. The findings illustrate a number of problems with communications in general. The study found that, in relation to shift handover, some companies:

1. Failed to clearly define responsibilities and information needs.
2. Did not provide adequate training or written guidance.
3. Carried out little or no monitoring or auditing of handovers.
4. Omitted shift handover in their safety case.
5. Had accidents that involved miscommunications at shift handover concerning, for example, maintenance or plant status.

Has your company had any of these problems?

If the answer to any of the following questions is 'Yes', then you should take action!	Yes	No
1. Are there lots of problems with intercoms, phones, radios or other hardware, e.g. poor sound quality, badly located, lots of 'dead zones' or background noise?		
2. Are logbooks, noticeboards, permit to work records etc. badly kept (either through negligence or because they are badly designed)?		
3. Are noticeboards, leaflets and other written materials full of mainly useless or out-of-date information?		
4. Do colleagues or managers use unsuitable methods of communication – e.g. pass complicated instructions by word of mouth that would be better put in writing?		
5. Are shift handovers very often rushed with the minimum of information exchanged?		
6. Could work be better planned (but isn't) so that there is no need to hand over a job from one shift to another?		
7. Have the workforce generally had little or no training in communications skills e.g. use of phonetic alphabet, good practices e.g always confirming information or have they had training but it was poor?		
8. Are communications no better during higher-risk periods of working such as start-ups and emergencies?		
9. Are 'vertical' communications – to/from management – poor? e.g. managers give mixed messages, workforce can't easily pass information to management, or it is passed but not acknowledged, etc.		
10. Are employees often surprised by information given by management – things they had no idea about before some 'bombshell' is dropped?		
11. Do employees regularly raise communication (or other) problems but the company does not seem to act on this?		

What should my company do about it?

It is clear that accurate and timely communications are important for safety and efficiency in work. Much of human factors is about communications: to perform a specific task, an operator will need to know what to do. Part of the process of selecting personnel is an interview in which existing skills and experience will be discussed. This is a communication process exploring the skills and knowledge that potential employees and contractors already have. When work starts, specific issues about each job should be described in toolbox talks and in the procedures used. Both should emphasise health and safety issues. Training is a form of communication. First, it involves finding out what training is required, then passing new information to personnel to improve their skills and knowledge. Displays, signs and labels in the workplace communicate factual and safety information. Many operators will need to use radios, phones or intercoms to contact others. Problems arising will need to be communicated via a reporting system. All of these are communication issues: they are also human factors issues and your company should have a clear strategy for every form of communication it provides.

Improving communications

- Method of communication – choose the best method of communicating; for example, give safety messages or critical task details face to face, e.g. in toolbox talks, rather than via e-mail or notices. In some cases it may not be possible, so when providing information to (e.g.) teams in remote locations via radio, take additional precautions to ensure messages are understood, such as using the 'phonetic alphabet' – Alpha, Bravo etc. Be aware of those with reading difficulties or whose first language may be different to the message sender's.
- Content of the message – make sure the message is clear and not mixed, that the receiver knows what is expected of them and when.
- Target the message – ensure that the information reaches everyone it needs to – employees, contractors, mobile teams, crews that change their membership from time to time, etc.

Management responsibility

Management should ensure that it has control over all aspects of communications in the workplace, including shift handover, as well as issues that may affect communication between staff in the field (such as between a crane operator and a banksperson or supply boat and deck crew). If information is not being sent, received, understood or acted on, the company should investigate and remove any barriers to communication. To do this, management should have systems in place for monitoring and auditing communications.

Good communications

Management should ensure that all employees:

- Clearly understand the communication needs of all tasks they are required to carry out – whether normal operations, maintenance, fault or emergency tasks.
- Have easy access to good quality communications equipment.
- Where possible, are not prevented from communicating by excess background noise.
- Are not given or required to give unnecessary information.
- Have procedures and other supporting documents available to assist communications (e.g. logbooks and instructions for using systems).

CASE STUDY 1

Poor communications were a contributory cause in an explosion and fire at the Longford plant in Victoria, Australia:

"The supervisor of the plant…had become completely removed from day-to-day operations and was mostly concerned with administration. The production coordinator at the plant…who became involved in managing the crisis as it evolved during the morning did not explain what he was doing or why to the panel operator… The final explosion occurred when, over a crackling radio [the production coordinator] instructed [the panel operator] to open valve TC3. [The panel operator] heard him say PC3.

Source: University of South Australia, Corporate Social Responsibility Case Studies. http://www.unisa.edu.au/.

CASE STUDY 2

A refinery realised their shift handover practice required improvement and started a project to deliver this. They consulted widely with their workforce and developed an agreed behaviour standard for the conduct of shift handovers, and structured shift logs that contained the key information needed. Following roll out, they found significant improvement in the type and amount of information recorded in logbooks, and the conduct of handovers.

Source: Reference 2.

- Are trained in all communications procedures (e.g. terminology used, hand signals, how to use computer based information).
- Are able to contact supervisors or managers at any time ('open door' policy).
- Have the means to report problems and receive feedback in good time.
- See managers and supervisors on site demonstrating their commitment to work quality and safety.
- Are made aware that the company looks across different divisions and outside itself for new ideas.

Shift handovers

Management should ensure that:

- Clear procedures/written guidance are in place for shift handover describing the key information that should be exchanged and how this should be done (e.g. word of mouth, in writing or both).
- Handovers are not conducted under time pressure or other distractions.
- Handover procedures take into account higher risk periods, e.g. lengthy maintenance campaigns; after long periods of employee absence; where safety systems have been overridden; where operating conditions are unusual (such as start-up of normally continuously operating plant); during unscheduled maintenance; where safety-critical tasks are to continue under an existing permit to work.
- Employees are competent to use handover procedures.
- Handovers are face-to-face wherever possible allowing crews to question each other and reduce the possibility of misunderstandings.
- Where possible, tasks are scheduled to be completed within a shift so that there is no need for handover.
- Regular and thorough monitoring and auditing is conducted.
- Employees who conduct handovers are involved in the examination and improvement of the practices.
- Information from incidents and accidents due to shift handover problems is brought to the attention of employees.

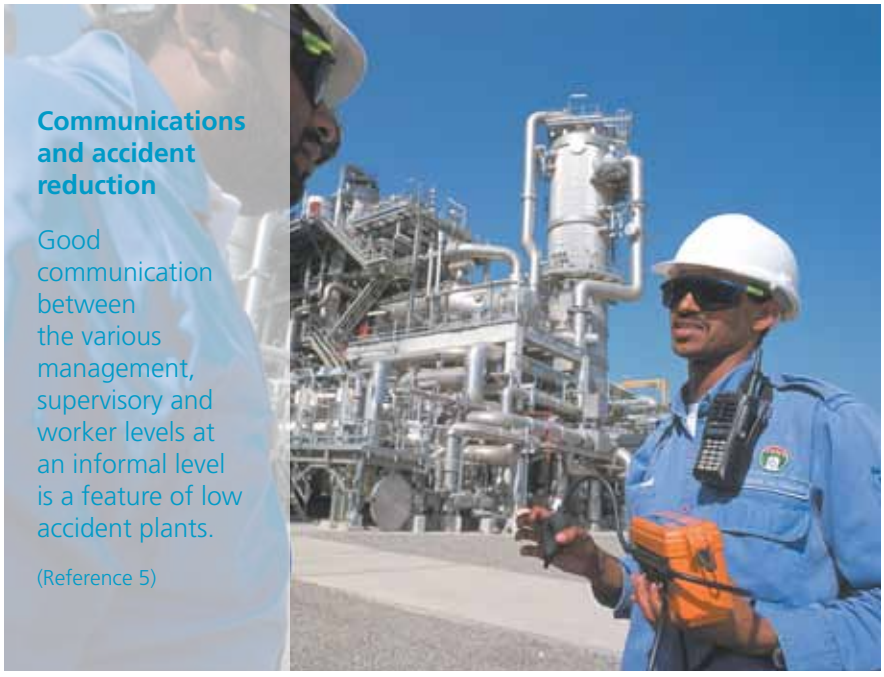
CASE STUDY 3

A construction company improved communications on site by:

- Establishing two-person teams that work in partnership over a long period, thus reducing the chance of misunderstanding.
- Allowing all site workers direct access to head office via company-supplied mobile phones.
- Managers visiting sites two-three times a week to monitor progress and listen to feedback.
- Training sessions in which teams can raise issues arising since the last meeting and agree actions.

Source: Reference 3

Reference 3 is also about participation, e.g. where the workforce is actively involved in safety matters such as risk assessments or incident investigations. Participation creates closer relationships and understanding between groups working towards a common goal, and good communications are a key to successful participation (see also Reference 4).



Communications and accident reduction

Good communication between the various management, supervisory and worker levels at an informal level is a feature of low accident plants.

(Reference 5)

Communications and participation benefits

- Builds trust between management and workforce.
- Improves: perception of hazards, motivation, working conditions and safety performance.
- Increases company loyalty.
- Induces a good team spirit.
- Improves productivity.
- Reduces staff turnover.

Source: Reference 3.

Measuring performance

Below is a sample of performance indicators that could potentially be used to monitor how effectively communications are being managed, divided into leading indicators (showing that a problem may occur in future) and lagging indicators (showing that there is currently a problem). See Briefing note 17 *Performance indicators* for more information on using performance indicators.

Leading indicators	Lagging indicators
Workforce perceived usefulness of information provided by: word of mouth, emails, posters, memos etc. Percentage of compliance with communication protocols (based on spot checks/sampling audits). Correct use of communications proformas (identify percentage of non-compliance via sampling). Percentage/number of shift handovers meeting required criteria*/number of errors found in handover process (quality checks based on sample auditing of handover process and review of logs).	Number of reported failures of communication systems. Accuracy and usefulness of shift logs. Number of reported end-of-tour or shift handover problems.

*Checks to include correct completion of handover documentation, quality of spoken handover, and acceptance of handover by incoming team.

References

1. HSE (1998), *National inspection project on shift handover*, Offshore Technology Report, OTO 98 160, HSE Books.
2. HSE (1999), *Reducing error and influencing behaviour*, HSG48, HSE Books.
3. HSE (2001), *Establishing effective communications and participation in the construction sector*, Research report 391/2001.
4. Energy Institute (2007), *Guidance on effective workforce involvement in health and safety*, http://www.energyinst.org/wfi.
5. HSE (1993), *Organising for safety*, 3rd report of ACSNI study group on human factors.

Further reading

- HSE (2001), *Effective supervisory safety leadership in the offshore oil and gas industry*, OTO Report 1999/065.
- HSE (2003), Briefing note 8 - *Safety critical communications*.
- HSE website, http://www.hse.gov.uk/humanfactors/topics/communications.htm.

For background information on this resource pack, please see Briefing note 1 *Introduction*.