

## ENHANCING SAFETY CULTURE THROUGH EFFECTIVE COMMUNICATION

ANGELICA M. VECCHIO-SADUS

CSIRO Minerals, Box 312 Clayton South VIC, Australia 3169

Tel.: +61-3-9545-8679; fax: +61-3-9562-8919

E-mail address: [angelica.vecchio-sadus@csiro.au](mailto:angelica.vecchio-sadus@csiro.au) (A.M. Vecchio-Sadus)

**Abstract** - Safety communication comes in varying forms including policies and procedures, performance statistics, hazard and incident reports, workplace inductions, risk assessments, and training. Effective communication mechanisms are critical to engage staff in safety activities, to gain cooperation and support, and to maintain a positive safety culture. These mechanisms need to complement the practical and technical safety strategies. Clear and constructive safety communication can improve knowledge and understanding that prevents at-risk behaviours and enhances safe work practices. A case study is used to illustrate how an organisation responded to a decrease in injury performance with a variety of safety communication techniques.

**Keywords:** Safety culture; safety communication; risk; training; behaviour

### 1. INTRODUCTION

Communication allows people, tasks, processes and systems to interact purposively and co-operatively to achieve health, safety and environment (HSE) objectives. The way we communicate about safety will influence whether or not people will understand and participate in the safety process, and the language we use will often determine whether the process is accepted or rejected. Merely training people to work safely will often not be sufficient. It may be necessary to provide forms of motivation and publicity to encourage them to take responsibility for their own health and safety, and that of others. The methods used will need to create an atmosphere that promotes safe behaviour, and reminds and reinforces the benefits for employees and the organisation of working safely.

HSE practitioners spend a high proportion of the day communicating by telephone, email, written instructions, responding to technical and non-technical queries from employees and HSE colleagues, and making presentations to staff and senior management. This can be more challenging when dealing with multiple clients, multiple sites and multiple safety cultures.

The process of safety communication is like traffic on a road. You need to plan the route to your destination, respond to signals and signs, take a different route if your path is blocked, modify your approach according to the conditions (motivation, culture, status, etc.), and slow down when required. The meaning of our communication is just not what the sender thinks it is – it relies on the response from the recipient. It takes time and effort to perfect the techniques that help us to convey our safety messages effectively.

This paper addresses communication culture, safety communication tools, communication styles, and presents a case study on how safety communication was used to respond to a decrease in injury performance.

### 2. SAFETY AND COMMUNICATION CULTURE

The United Kingdom Health and Safety Executive (Booth, 1993) has described safety culture as: "...the product of individual and group values, attitudes, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation's health and safety programmes. Organisations

with a positive safety culture are characterised by communications founded on mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventive measure.”

Communication and consultation at work is integral to achieving a safe work environment by giving and receiving information about hazards and risk controls, influencing attitudes and behaviours, and building commitment and ownership. Table 1 gives a summary of the communication elements that provide the practical strategies to achieve a positive safety culture (Geller, 1998; Standards Australia, 2001; Reason, 2002; Comcare, 2004; Vecchio-Sadus & Griffiths, 2004; Hopkins, 2005).

In a system of open and two-way communication, management provides employees with relevant information on hazards and risks associated with the organisation’s operations to build understanding on how to work safely. They listen and act on the concerns of employees. People will contribute more effectively in an environment that provides a framework for consultation and communication that creates the conditions where individuals are encouraged and prepared to report hazards, incidents and near-misses. Involving employees in decisions about changes and responding to their concerns helps to establish common goals between management and employees, and motivates them to work safely. Staff involvement in the HSE decision-making process is a characteristic of a positive safety culture and has also been recognised as being fundamental to the successful implementation and sustainability of a HSE Management System (Standards Australia, 2001).

**Table 1 - Safety culture communication elements (Geller, 1998; Standards Australia, 2001; Reason, 2002; Comcare, 2004; Vecchio-Sadus & Griffiths, 2004; Hopkins, 2005)**

Safety Culture Element	Requirement	Communication Element
Putting in place methods for controlling hazards	<ul style="list-style-type: none"> <li>• Everyone shows support</li> </ul>	<ul style="list-style-type: none"> <li>• Displaying rules and procedures to remind everyone to work safely</li> </ul>
Management commitment to minimising risks in the operations, and complying with all relevant health and safety legislation	<ul style="list-style-type: none"> <li>• Accept responsibility for HSE</li> <li>• Become involved in HSE</li> <li>• Provide resources</li> <li>• Change attitude to risk</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrating the employer’s personal commitment, values and expectations</li> <li>• Supervising and monitoring work performance</li> </ul>
Employees contribute most effectively in an organisational culture based on trust and cooperation	<ul style="list-style-type: none"> <li>• Atmosphere of trust, encouragement and reward in terms of HSE</li> </ul>	<ul style="list-style-type: none"> <li>• Assessing competency and providing revision of training when required</li> <li>• Providing feedback on HSE</li> <li>• Motivating staff</li> <li>• Recognising and rewarding achievement</li> </ul>
Employees must be provided with the necessary information and training to broaden their knowledge and to gain new skills to behave and operate safely	<ul style="list-style-type: none"> <li>• Willingness and competence to implement reforms and changes</li> </ul>	<ul style="list-style-type: none"> <li>• Providing instructions on how to work safely with equipment, tools, materials and processes</li> </ul>
Employees contribute most effectively in an environment that provides a framework for consultation and communication	<ul style="list-style-type: none"> <li>• Individuals encouraged and prepared to report errors and near-misses</li> </ul>	<ul style="list-style-type: none"> <li>• Meeting to discuss HSE issues such as hazard and incident reports, risk assessments and operating procedures</li> </ul>

## 2.1. Types of communication

There are many examples of technical strategies for safety communication. The most commonly used methods for internal communication include presentations to senior management, staff and HSE Committees, team meetings, emails, videos, noticeboards, newsletters, poster displays and signage. Methods of external communication include annual reports, publications, telephone enquiries, and submissions to government on changes to legislation. It is important that information is presented in a manner that recipients can understand

(Vecchio-Sadus & Griffiths, 2004). We also need to acknowledge that different approaches are required for different organisations and situations (e.g., access to computers, non-English speaking background).

### ***2.1.1. HSE mission statement, policy and strategic plan***

A HSE mission statement and policy will assist to define and communicate the direction of the safety process and will provide a reference for making HSE decisions. A HSE strategic plan can communicate the objectives and priorities that are aligned with the overall business plan.

### ***2.1.2. HSE statistics***

An organisation can communicate its performance through graphs of lost time, medical treatments, workers compensation rates, severity and incident rates, and positive performance indicators. These are used to facilitate continual improvement and enhance the accountability of line management for meeting an organisation's HSE objectives.

### ***2.1.3. Safety induction***

Information can be provided through HSE practitioners and supervisors on site rules and requirements, emergency procedures and incident reporting to enable new employees, visitors and contractors to carry out their duties in a safe manner from the moment they come on site.

### ***2.1.4. Risk assessment***

Anyone can be at risk without realising it. Some hazards such as heat, chemicals and moving parts communicate an immediate threat of injury. However, the risk cannot always be perceived, e.g., carbon monoxide is highly toxic and has no smell. A risk assessment can help identify workplace hazards that pose a risk to people and the environment, assess the magnitude of those risks, and apply controls to mitigate risk.

### ***2.1.5. Manuals, checklists and operating procedures***

An organisation's safety manual consolidates the rules and requirements for working safely. Checklists can be used as 'checking tools' (e.g., inspection checklists) or guideline tools (e.g., operating checklists) to help prevent incidents and miscommunications, increase hazard reporting, better operate equipment, and make informed decisions about operation. Maintenance logbooks provide a historical profile of plant and machinery. Operating procedures provide advice on acceptable/safe work practices. The lock-out or tag-out of faulty equipment or work in progress can communicate potential danger.

### ***2.1.6. Hazards, incidents and near-misses***

Communicating the results of a hazard or incident investigation demonstrates management commitment in identifying and addressing underlying causes to prevent a recurrence. The involvement of employees in suggesting strategies to prevent a recurrence encourages ownership of the solution(s) and a desire to implement the recommendations. It is important to have on-going campaigns to encourage the reporting of incident and injuries as many employees will not report for fear of recrimination. This may be the case in some professions where injuries are regarded as part of the job. Reporting near-misses ensures remedial actions are implemented prior to an incident causing injury or ill health. Safety alerts draw attention to issues that may require immediate attention.

### ***2.1.7. Training***

Training is conducted to respond to gaps in knowledge (proactive approach), to target high-risk groups or areas (reactive approach), and to adjust perception of risk. Programs that work well are applicable to lifestyles both at and away from the workplace, e.g., personal fitness, hygiene, cancer awareness, workplace stress. To instil positive attitudes and behaviours toward HSE, proactive programs must be designed with staff's needs in mind. Training in safe work methods should involve raising employee's awareness of their true values towards health and safety. For example, employees may believe that they value cutting corners to get to a meal break because they have not consciously considered their more long-term values. Long-term values include being able to work without injury so they can continue to provide for their family. An effective tool is to ask employees to consider what they truly value more, overriding a machine guard to finish the job earlier (at the risk of being severely injured) or working safely to be able to continue to provide for their family.

### **2.1.8. HSE Website**

With a vast amount of information available, it is essential that the critical information on HSE is readily accessed and understood. A HSE Intranet can provide a 'one-stop shop' that includes the safety manual, policies and fact sheets. The resources must always be available to keep the workforce informed so they are better able to respond to changing risk and to prevent incidents and injuries. For a HSE website to be effective, people need to know of its existence, they need to be motivated to access the information, and the information needs to be updated regularly.

### **2.1.9. Brochures, posters and videos**

A wide variety of publications on HSE matters are available. They can range from simple instructional leaflets on particular topics such as safe lifting, electrical safety, personal fitness, through to general items such as checklists and guides to legislation, and sources of further information to more detailed reports, books, etc. Small instructional leaflets can be suitable for general distribution and should be printed matter in several languages if the workforce is multicultural. All publications should be studied for suitability before distribution. It is possible to communicate HSE through an organisation's in-house newsletter. Posters can overcome language problems through the use of illustrations and symbols. To maintain attention, posters should be kept on a special display board (not cluttered with other notices) and changed at frequent intervals.

There are a wide variety of videos and films to raise awareness in the general health and safety area. Several are available as training packages with accompanying manuals. An advantage with videos is that facilities are readily available to make screening easy. The advent of DVD video allows greater portability of the material as it can be viewed on a computer. This eliminates the requirement for a video player. Although there are a number of excellent international training videos with a universal appeal, employees are likely to better identify with the subject illustrated in local versions as there is a greater acceptance of material where the narration is in the native tongue (also makes it easier to understand the accent). To have the maximum impact, videos and films on HSE should convey a sense of reality. However, those with strong emotional aspects or shock value may prove ineffective as the viewers may regard these tactics as far removed from the reality of their own lives and not perceive the situation as being applicable to them. It may add value to follow a video or film with a slide presentation illustrating local examples or to structure a discussion to make it relevant to the particular workplace.

### **2.1.10. Safety Week**

A safety week aims to promote a happier and healthier workplace by raising the level of awareness amongst employees, and demonstrating commitment from management. Such events provide an excellent opportunity to showcase health and safety at its best, and it's where creative activities can be offered (Health & Safety Executive, 2001a; Vecchio-Sadus, 2001). Activities can include seminars, videos, an evacuation drill, health checks (e.g., cholesterol test, blood pressure check, hearing test, etc.), a catered function, a trade show, and a promotional competition. Safety promotional items given out can include pamphlets. Competitions can include safety crosswords, hazard spotting activities, and devising a safety slogan.

### **2.1.11. Public report**

Many companies report on HSE in annual reports or publish a separate annual HSE report that illustrates the range of activities and initiatives undertaken along with a review of performance standards achieved. Reporting HSE in an annual report helps to demonstrate an organisation's commitment, achievements in workplace safety and employee welfare, and a systematic approach to HSE risk management (Health & Safety Executive, 2001b).

### **2.1.12 HSE Conferences**

HSE conferences provide an opportunity to share broad information on HSE and case studies from different organisations. They provide a forum for meeting with other HSE professionals and managers.

## **3. COMMUNICATION STRATEGIES**

### **3.1. Barriers to effective communication**

We communicate in safety to advise, inform, assist, train, learn, direct, warn, seek help, gain respect, acknowledge, reassure, motivate, question and complain. Communication of a threat or benefit is generally absorbed better. Barriers to effective communication can include lack of information or knowledge, lack of

attention to detail, not explaining priorities or goals clearly, selective listening, lack of empathy, self-image, status prejudice, accents, differing perception of risk, failure to explore alternative solutions, mind made up/preconceived ideas, poor judgement, and losing patience/allowing decisions to become emotional (Cole, 2000). Barriers can also occur in the form of communication. For example, the extensive use of email may desensitise some people to safety messages.

We can improve our communication skills in the workplace by solving problems together. This challenge includes viewing each encounter as an opportunity to express more appreciation, and each argument as an opportunity to translate complaints into requests or solutions. As a problem-solver, the HSE practitioner needs to find constructive ways of resolving an issue without blaming others or making unilateral decisions affecting others. We need to communicate about safety with clarity, credibility and impact. We need to be able to make a point/claim, state a fact and provide evidence (prove it, show me how, give me an example) - *Why do I need to know? What do you mean?* With employees from non-English speaking backgrounds, understanding of a task may require demonstration of the activity: “Show me how this is done.”

Managers in any organisation deal with an enormous range of issues on a daily basis, and face the constant pressure of making decisions to ensure the viability of their business. They must establish priorities for dealing with these issues and take account of health and safety. When communicating about safety with managers, the communication preference will need to be concise, well thought out, in a logical sequence, and relate to their role. As managers have their own priorities and issues, the language used may need to provide examples and solutions that are outcome-focused, relate to risk assessment, provide cost and time-saving (where possible), and preserve or enhance health and wellbeing. Examples may need to draw upon personal reputation and value-adding to the organisation to motivate to managers to work safely and to support the safety initiatives.

### 3.2. Language and words

What matters more: what we intend to say or the actual response? The choice of language and words can have a profound influence on the outcome of safety communications. Choosing ‘positive’ words can draw different responses (Cole, 2000). For example:

Negative Phrase	Positive Phrase
<i>What’s the problem?</i>	<i>How can I help?</i>
<i>You should have....</i>	<i>From now on..... or Next time.....</i>
<i>You don’t understand</i>	<i>Let me run through that again</i>
<i>I’ve told you before not to.....</i>	<i>How about trying it this way</i>
<i>This will cost money</i>	<i>This is an investment in your health and wellbeing</i>

Feedback can be positive or negative, and can influence the quality and frequency of behaviour. Effective feedback is a valuable tool for influencing safe behaviour in the workplace. Feedback needs to be given with straightforward and objective words. Ambiguous and subjective language can be counterproductive. For example, statements like, "It seems you're unaware, careless or disorganized" only add resentment and lessen acceptance of the behavioural message (Geller, 1996). Saying an incident or injury was “bad luck” implies it cannot be prevented. This is contrary to the belief and expectation that workplace incidents are preventable by identifying and controlling risk.

### 3.3. Complaints and criticisms

The HSE practitioner can be faced with resistance to change in a work practice or in adopting a new procedure. Sayings that indicate frustration or lack of cooperation include:

<i>I’ve done it this way for donkey’s years and nothing’s gone wrong</i>	
<i>It won’t happen to me</i>	<i>We’ve tried that before</i>
<i>Accidents just happen</i>	<i>It won’t work</i>
<i>I have real / more important work to do</i>	<i>They won’t let us</i>
<i>I’m too busy to do it</i>	<i>You don’t understand</i>
<i>It’s not in my budget</i>	<i>Safety is just a passing fad</i>

No-one likes negative criticism and some people are more sensitive than others. When discussing errors or unsafe work practices, people will undoubtedly make excuses, however, communicate your point by showing the error and suggesting ways to prevent the mistake in future (Geller, 1996, 1998). Translate your (and other people's) complaints and criticisms into specific requests. To gain more cooperation from others, wherever possible use specific, positive language rather than generalisations, e.g., "why" or "somebody should." Help your listeners comply by explaining your requests with: "so that...", "it would help me to... if you would..." or "in order to..." Use non-judgmental, non-inflammatory language like: "I perceive..." or "it seems to me..." Reiterate that personal attacks and blame aren't constructive. Identify and reiterate common ground or common goals - focus on areas of agreement (Rivers, 2007).

### 3.4. Questioning

Closed questions (i.e., 'yes/no' answers) tend to inhibit a response whereas 'open' questions provide more information. In general, we ask 'how' questions about prospective/future actions and 'why' questions for retrospective/past actions. In HSE, 'how' questions are useful in seeking explanation of, say, a work procedure, and is less confronting than 'why' questions. In incident investigation, 'why' questions help to identify the underlying causes rather than blame the individual. In some circumstances, repeatedly asking 'why' will identify a 'chain of causes' for unsafe behaviour (Geller, 1998). The length and complexity of a 'chain of causes' will vary from one situation to another. As a general guide, asking 'why' no more than five times usually pinpoints the underlying issues requiring further investigation. For example:

---

Step 1. In the workplace

*Q: Why aren't you wearing any gloves?*

*A: Because they don't fit.*

*Q: Why don't you get a pair your size from the stores?*

*A: Because they only have one size.*

Step 2. In the stores

*Q: Why do we only have one size of glove?*

*A: Because no one has told me it's a problem.*

Step 3. In a team meeting

*Q: Why hasn't anyone reported a problem with glove sizes?*

*A: Because our suggestions are never taken up or acted upon.*

---

### 3.5. Basic communication tips

The following tips describe the elements of an effective communication exchange (Geller, 1996, 1998; Cole, 2000; Rivers, 2007).

1. *Think before you speak.* Say what you mean and mean what you say. Analyse what you plan to say and evaluate whether it sounds like what you mean. Responding mindfully rather than reacting emotionally requires self-knowledge and discipline and it allows us to communicate more effectively. Identify a 'keep calm' strategy for managing conflict.
2. *Mind your body language.* Body language, voice tone (how we say it) and words (what we say) can impact upon the effectiveness of our communications. Avoid the sarcastic eye rolling and listless sighs.
3. *Be effective in speaking to people and don't hide behind e-mails.* It's better to discuss sensitive matters or conflicts in person or at least by telephone. When emotions are involved, e-mail becomes a less-appropriate tool to communicate by. Use humour to creatively diffuse tension: "Those safety glasses on your head won't do much for protecting your hair." Listen first and acknowledge what you hear even if you don't agree with it before expressing your point of view.
4. *Keep it simple.* It's better to give brief and specific feedback messages over weeks or months than to give fewer but longer feedback sessions. Use language that can be understood and appreciated. Speaking concisely promotes interest and makes your message more listener-friendly.

5. *Put out a consistent message about your expectations.* Rather than combining both positive and negative feedback in one discussion or overloading a person with several behaviours to continue or to change, focus your advice on one area of performance.
6. *Provide support.* At-risk behaviour (e.g., incorrect lifting) should be followed immediately with supportive, corrective feedback to stop the behaviour and to decrease the chance of a recurrence. Give specific direction for improving the behaviour to make it safer. It is better to give constructive feedback on at-risk behaviour than no feedback.
7. *Reinforce the message.* Remind people to perform the upcoming task in a safe manner to increase the effectiveness of the message and to reduce the potential negative effect of catching a person making a mistake. Statements like "Remember to avoid twisting" or "Don't forget to use the handrail" come across as friendly and caring reminders.
8. *Express appreciation.* Safe behaviour should be followed by positive feedback (or praise) to support that behaviour and to have it repeated. When you give positive statements watch for the use of 'but' which sends a negative (corrective) message. Mixed messages can weaken your feedback. Some people hear only the positive; some hear only the negative; and others dismiss both messages. Healthy working relationships need a core of mutual appreciation. Express more appreciation, encouragement and gratitude.
9. *Know your employees.* Giving good feedback requires current knowledge of the worker's abilities regarding a certain task. It also requires specific knowledge about the safe ways of performing the task. This is a key reason why the most effective feedback occurs within work teams. Corrective feedback is often perceived as most genuine or informed when it occurs between co-workers on the same work team. It avoids the 'caught you out' perspective associated with a manager's attempts to correct at-risk behaviour. It helps build relationships with staff.
10. *Set an example.* At-risk behaviour is sometimes performed by experienced workers who know how to do the job safely but they have developed poor habits or are just taking short-cuts. In these situations, give brief corrective feedback as a reminder to be safe and to set the right example for others. Line managers need to set an example of safe work behaviour.

#### **4. CASE STUDY ON SAFETY COMMUNICATION AT CSIRO MINERALS, AUSTRALIA**

CSIRO (Commonwealth Scientific and Industrial Research Organisation) is a national science agency employing over 6,600 scientists, engineers, technicians, and administrative staff on 57 sites across Australia. CSIRO is divided into 19 scientific Divisions supported by enterprise functions such as finance, property management, public relations, information technology, legal and human resources. CSIRO has an amazing diversity in research, and a complexity of safety hazards. Workplaces include chemical and engineering facilities, laboratories, process bays, pilot plants, field stations and offices. CSIRO faces many challenges in the delivery of HSE that are impacted upon by changeable work environments resulting from client needs and project risk. Efforts are required to address these demands and to keep a focus on HSE against competing work priorities.

HSE in CSIRO is communicated by:

- A HSE Management System.
- HSE strategic plan, HSE improvement plan, health and wellbeing strategy, and musculoskeletal management strategy.
- All new policies and procedures are released with a communication plan.
- All CSIRO managers and supervisors attend compulsory training to enable them to fulfil their role and responsibilities in relation to HSE. The course covers legislation and HSE procedures, risk assessment, and incident reporting.
- An extensive HSE website that includes policy forms (e.g. incident report, risk assessment), policy information, and general awareness topics.
- HSE performance measurement.
- Audits and inspections of the workplace.

- A HSE annual report and an annual CSIRO HSE Conference.
- Recognising and rewarding individual and group achievement through the annual CSIRO HSE and Environment Achievement Awards. The winners are presented with a framed certificate, and a cash prize. The certificates are proudly displayed in the workplace.
- The HSE network is over 400-strong comprising HSE Managers, HSE Officers, fire wardens, first-aiders, Health and Safety Representatives, HSE Committee members, and specialist officers.

CSIRO Minerals is a scientific business unit with 300 employees on five sites across Australia. It delivers research and development to mineral processing and metal production industries. The HSE risk profile identifies moderate to high inherent risk from plant (equipment and machinery), high temperature, high pressure, chemicals and gases, live electrical equipment, and manual handling.

A review of injury performance in CSIRO Minerals in 2003-04 showed that most work-related injuries resulted from incorrect work practices and not the failure of any mechanical safety system. This led to high compensation claim numbers and costs, and lost time injury. An audit of the HSE Management system had found it to be robust on paper, however, it had not been audited against culture or behaviour.

In response, a safety communication campaign entitled 'Working Safely' was designed and implemented across the business. The Chief of CSIRO Minerals recorded a video message on working safely that was placed on the Intranet. There was also an email to all staff to reinforce the message that nothing is more important than working safely - safety always comes first. Team discussions took place in every work area and involved every employee in CSIRO Minerals. The key messages conveyed included:

- Work safely – if you think a colleague is unaware of a hazard, mention it to them – we can't remember everything – don't leave problems for others to fix
- Seek help – don't take risks – seek advice on a safer way of doing a task
- Provide feedback – continually during work, and
- Use employees from other work areas to discuss project setup and operation, i.e., 'buddy' system.

All CSIRO Minerals managers and supervisors attended a course to enhance their leadership to reinforce safe behaviours. The course and participant notes covered material on behavioural issues, effective communication, and examples of incidents from within the business. Two posters were designed to support the working safely campaign and included key take home messages gathered from discussions with senior management and employees. These posters continue to be used in developmental coaching. There was good employee uptake and enthusiasm for the campaign that reinforced and communicated the expectations for safe behaviour. Staff made a number of recommendations that were integrated into the HSE Management System.

The impact of the 'working safety' campaign coupled with early intervention strategies and a musculoskeletal management program resulted in improved injury statistics, no lost time injury, low compensation claim numbers and costs, improved cooperation and support, and increased participation in safety programs. Near-misses were reported by staff across most job classifications. Staff appeared to value the reporting near-misses as the key to long-term prevention of serious and fatal events. In addition, there was strong satisfaction with safety in the workplace as evidenced by the results of the annual staff survey. The CSIRO Insight Poll is a voluntary, confidential staff survey that contains 21 categories, one of which is 'working environment and safety' that has seven questions. In 2005, 84% of staff from CSIRO Minerals responded to the survey, hence, the sample size is significant. Table 2 shows that the 2005 CSIRO Insight Poll results for CSIRO Minerals exceeded the CSIRO average and Global Research & Development (R&D) norm in every question on working environment and safety. The results reflected positively on staff communication and consultation in HSE and the overall impact of preventative measures. CSIRO Minerals' communication processes are critical to achieving continuous improvement in HSE and to maintaining a positive safety culture. Campaigning strategies must remain foremost in the overall management of HSE.

**Table 2 - 2005 CSIRO Insight Poll results**

Question	% Favourable Result		
	CSIRO Minerals	CSIRO average	Global R&D Norm
Corrective action is usually taken when unsafe conditions are identified	97	88	79
Overall, the physical working conditions at my location are satisfactory (e.g., ventilation, temperature, space to work)	91	82	69
Safety procedures in my project/work area are carefully observed, even if it means the work is slowed down	92	81	71
Staff in my project/work area are consulted when resolving safety issues in the workplace	91	81	not available
My project/work area is a safe place to work	97	92	91
The safety training/information I have received assists me to perform my role safely	91	86	not available
My immediate manager demonstrates strong commitment towards addressing safety issues in the work area	91	78	not available

## 5. CONCLUSION

The communication network provides a cohesive and supportive framework in which people and systems of work can interact purposively and co-operatively. Clear and constructive safety communication provides the mechanism by which knowledge and understanding can be improved to prevent at-risk behaviours and to enhance safety culture. This was illustrated by a case study that showed how an organisation responded to a decrease in its injury performance with a variety of safety communication techniques.

Effective communication mechanisms are critical to engage employees in safety activities and to gain cooperation and support to maintain a positive safety culture. These mechanisms need to complement the practical and technical safety strategies. Employees with effective communication skills are better able to provide corrective feedback for risky behaviours (thereby decreasing the probability of an injury) as well as rewarding feedback for safe behaviours (thereby increasing the likelihood of future behaviours being performed safely).

Visual cues and non-verbal communication contribute to behaviour. Staff will mirror the appropriate behaviours of managers and peers. A physical presence and action (i.e., meeting face-to-face) will have a longer-lasting impact on behaviour than sending an email or memo that may have unintended negative consequences.

To improve safety communication in the workplace:

- Define goals clearly in writing – written rules are easier to understand
- Identify appropriate lines of communication with managers and employees
- Respond to instructions or enquiries promptly and appropriately
- Develop effective questioning and speaking skills to gather and convey information
- Speak in the language of the person with whom you are communicating
- Increase your listening skills – essential in meeting staff's needs, and
- Give feedback – reinforce appropriate behaviour.

## REFERENCES

- Booth, R., 1993. *Safety culture: concept, measurement and training implications*. In: Proceedings of British Health and Safety Society Spring Conference: Safety Culture and the Management of Risk, 19-20 April, p. 5.
- Cole, K., 2000. *Crystal Clear Communication: Skills for understanding and being understood*, 2nd edition. Australia: Prentice Hall.
- Comcare, 2004. *Safe and Sound: A discussion paper on safety leadership in government workplaces*, Pub 35, August, Canberra, Australia.
- Health & Safety Executive, 2001a. *Evaluation of the European Week for Safety and Health 2000*. NPD Associates for the Health and Safety Executive UK, Contract Research Report 357/2001, Crown.
- Health & Safety Executive, 2001b. *Health and Safety in Annual Reports: Guidance from the Health and Safety Commission*, 2<sup>nd</sup> April, UK.
- Hopkins, A., 2005. *Safety, Culture and Risk: The organisational causes of disasters*. Australia: CCH Limited.
- Geller, E.S., 1996. *The Psychology of Safety: How to improve behaviours and attitudes on the job*. USA: CRC Press, Boca Raton.
- Geller, E.S., 1998. *Working Safe: How to help people actively care for health and safety*. USA: CRC Press, Boca Raton.
- Reason, J., 2002. *Managing the risk of organizational accidents*. Burlington, USA: Ashgate Publishing Ltd.
- Rivers, D., 2007. *The Seven Challenges: A Guide to Cooperative Communication Skills for Success at Home and at Work*, USA. Website at [http://www.newconversations.net/communication\\_skills\\_workbook\\_summary\\_and\\_toc.htm](http://www.newconversations.net/communication_skills_workbook_summary_and_toc.htm) . Accessed 15 May 2007.
- Standards Australia, 2001. *Australian/New Zealand Standard AS/NZS 4804 Occupational health and safety management systems – General guidelines on principles, systems and supporting techniques*. Sydney, Australia.
- Vecchio-Sadus, A.M., 2001. *Scientists and Safety: Turning Sceptics Into Believers*. In: Visions, Proceedings of the 9th Annual Conference of the Safety Institute of Australia (Queensland Division) and the Division of Workplace Health and Safety, Cairns Australia.
- Vecchio-Sadus, A.M., Griffiths S., 2004. Successful marketing strategies for enhancing safety culture. *Safety Science*, 42, 601-619.