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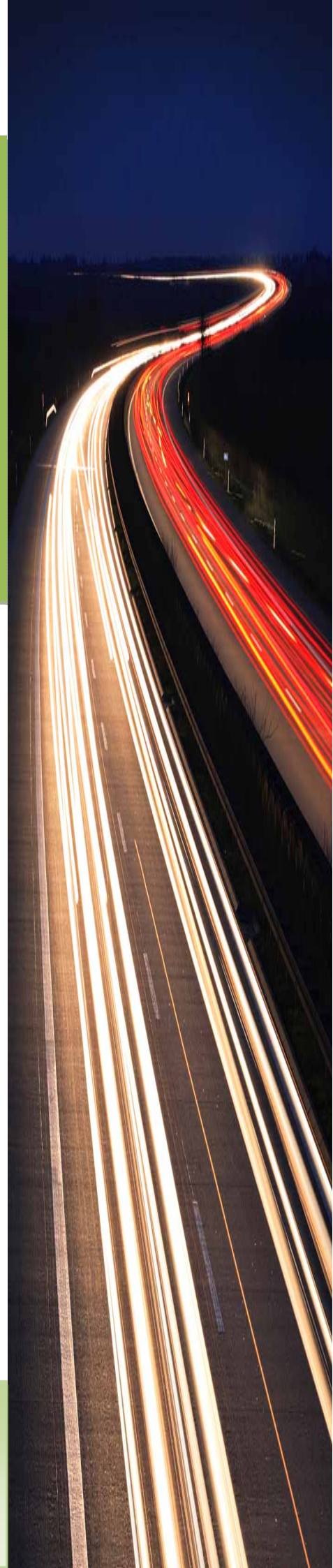
Illuminations

Special Edition on

Safety in Organisations



| November 2010 Edition



About *Illuminations*

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Illuminations is an initiative of the College of Organisational Psychologists and is aimed at creating awareness of the value and contributions being made by organisational psychologists to organisations and business across Australia and globally. Organisational psychology is the science of people at work. Organisational psychologists analyse organisations and their people, and devise strategies to recruit, motivate, develop, change and inspire.

Organisational psychologists work with organisations, teams and individual employees to improve their performance and increase effectiveness and productivity in the workplace. They strive to enhance people's wellbeing by improving their experience at work. Drawing on a scientific approach based on psychological research and tested strategies, organisational psychologists are able to provide methods produce measurable, replicable and often more cost-effective results.

In the workplace, organisational psychologists can play a number of critical roles generally associated with employee performance, including Organisational Development (OD) Manager, Human Resource (HR) Manager, HR Consultant, Personnel Director, Learning and Development Manager, Trainer, OD Consultant, and Researcher.

Organisational psychology covers a broad range of disciplines including industrial and organisational psychology (I/O psychology), work psychology, occupational psychology, personnel psychology, human resource management and development, ergonomics, human factors, vocational psychology, managerial psychology, coaching, and consumer psychology.

Illuminations presents evidence-based articles which showcase some of the work that organisational psychologists in field are engaged in. Through a wide range of articles that include psychological test reviews, research insights, and case studies, *Illuminations* hopes to provide our readers with some practical tools and frameworks to help inform organisational practices around managing human behaviour at work.

A Note to Our Readers

Illuminations is a quarterly e-Magazine that is freely available for circulation. The publication does not aim to promote the authors or contributors. As a not-for-profit publication, it relies on the enthusiasm and contributions of organisational psychology practitioners in the field. The views expressed within the articles should be considered the authors' and not necessarily those of the Australian Psychological Society or the College of Organisational Psychologists.

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Welcome to the first public edition of *Illuminations*!

The College of Organisational Psychologists (COP) proudly presents this special edition on Safety in Organisations to kick off our quarterly publication cycle. "SAFETY IS NO ACCIDENT" is a common catch phrase which HR professionals in particular, use to build safety consciousness in organisations. Although some industries are more prone to safety hazards and risks than others, basic OH&S standards are applicable to all industries and form one of the fundamental obligations employers have towards their employees. Work related injury and disease was estimated by Safe Work Australia cost our economy somewhere in the order of \$56 billion in 2008-2009 alone. The case for workplace safety does not get much stronger! Unfortunately though, safety is still one of those areas where organisations are still primarily reactive. It is traditionally taken for granted until workplace incidents force employers to rethink their approach.

The biggest risk to workplace safety as I see it is in fact the very regulations that are put in place to safeguard. Don't get me wrong – OH&S regulations are necessary for ensuring a consistent approach to maintaining safety standards across all organisations. The risk however arises around the manner in which organisations often choose to translate these regulations into practice.

For example, several organisations have a tick-in-the-box approach to safety through which they put in place the necessary processes and frameworks to meet the minimum compliance standards as required by the law. However, safety is not just about having the right processes. Safety involves people – real, dynamic and diverse people who even at the best of times, are capable of making mistakes. Putting a policy in place is not sufficient to foster workplace safety. People in the organisation have to be aware of, understand, value and live the safety behaviours for the policy to truly come to life. This is where organisational psychology can make a significant contribution by drawing on empirical evidence around human behaviour and safety.

There is a common perception that the only aspect of safety that organisational psychologists work with is in managing psychological safety. In reality however, there are several organisational psychologists in the field who work in partnership with HR professionals to effectively embed a physical safety culture among employees. This edition of *Illuminations* deliberately steers clear off the issues around managing psychological safety (lets face it... we could dedicate an entire edition to that!). Instead we chose to highlight the interesting work that organisational psychologists are doing within the physical safety management space.

The articles cover a wide range of applications of organisational psychology in the safety space including use of psychometric assessments for selecting staff in high risk organisations, an objective assessment of some of the safety assessment tools available in the market, taking a systems approach to preventing accidents, building a safety leadership culture and driving and fostering a sustainable, positive safety climate. Organisational psychology can help across a whole spectrum, from selecting individuals who are less likely to be prone to risky behaviour, to setting up systems which can minimise the risk to begin with. We hope that this edition provides those in the field with some interesting and useful insights around how safety in organisations could be taken beyond being compliance driven to being embedding into the way things are done!

I would like to extend a special note of thanks to my wonderful *Illuminations* team – Emma Shannon, Kim Pluess, Peter Murphy, Arti Appannah, and Alexandra Stillwell, who have been the secret behind the terrific content that sits within this publication. I would also like to thank the dedicated members of the COP National Committee for External Communications who have been the driving force behind making this publication a reality.

Diya Dey
Editor

Safety Selection Tools

The application of safety-oriented psychometric tools can assist with not only assuring a low-risk recruitment decision; they can also help to keep the regulators at bay.

Every year accidents in the workplace create devastating effects for individuals, families and organisations alike. Not only are the people affected often left with physical, emotional, psychological and financial injury, but the organisations involved incur significant cost, both for their bottom line and reputation. Tragically, many of these events could have been avoided. Accidents are typically the result of individuals unintentionally engaging in unsafe work behaviour. The lack of intent is what defines an accident, sometimes resulting from a lack of awareness of what may be a hazardous situation.

So how can accidents be avoided if the people involved aren't even aware of a potential hazard? The extent to which an individual may or may not engage in unsafe behaviour (consciously or otherwise) can be predicted through the use of organisational psychometric assessments as part of the recruitment and selection process. Although there are ways of developing this awareness in existing staff (e.g. through coaching and workplace promotions), screening for unsafe tendencies before an individual is hired is the most effective way of ensuring a low-risk workforce. On the job, these tendencies may be reinforced through promotion of a safety climate in the workplace and rewarding safe behaviour.

The value of safety psychometrics in recruitment and selection

In recent years more and more organisations have turned to formal tests to assist the selection process. Rather than relying solely on written applications and interviews which typically risk some form of bias, psychometric tests offer independent and scientific assessment of a candidate's knowledge, skill, attitude and behaviour. By reducing the subjectivity of a selection process, and increasing the focus on objective and role-specific competence appraisal, psychometric tests help to ensure a solid match between candidate and job. A point of difference for psychometric tests is that they can illustrate with a high degree of accuracy and reliability how a candidate is likely to behave across a range of situations.

Whilst this level of information is important for most roles, it offers particular value for safety-critical environments where it is crucial that staff take precautions and respond appropriately in a crisis situation. These 'high reliability' industries, ranging from mining, transport, emergency services and energy, typically face significant hazards on a daily basis. Even though these hazards may be unlikely to eventuate, the significant consequence of these risks demands the attention of industry executives and regulators alike.

The use of psychometric tests during the selection process for ‘high reliability’ roles provides assurance that the right people are being appointed to these positions. That is, they provide a highly accurate means to identify ‘high risk’ individuals, or persons who are inherently more likely to take risks and disregard safety messages, regulations and protocols. Screening these individuals out of the process pre-hire not only provides peace of mind for industry executives, the availability of scientific evidence regarding an individual’s suitability for a role may also appease auditors and regulators who want to know that appropriate checks are in place. It also provides a fair and equitable assessment of a number of candidates’ potential suitability for a role to enable sound comparison.

Things to look for in your safety selection tool:

- What are the qualities you are looking for in the ideal candidate? It is important to be clear about how you need the successful applicant to behave before choosing the assessment.
- Who is behind the tool? Many assessments out in the market are not designed by psychologists and may not have the scientific validity behind them to ensure applicants do not ‘fake’ their results.
- What is the position level for which the tool is designed? Some tools are designed for entry level roles and may not be appropriate for executive-level positions.
- Do you wish to use the results for just selection purposes, or also to assist with professional development with existing staff? Tools differ in their application.
- Ask the consultancy about the norm groups used for the safety selection tool. It is important to ensure that the applicants’ results are compared with norm groups that are similar to the role being recruited.

Safety selection tools – what are your options?

As the need for safety-oriented psychometric tools has grown in recent years, the market has responded accordingly. The majority of organisational psychologists and talent consultancies these days offer at least one safety-oriented psychometric assessment to aid the selection process. However, those of us who are a little less well-initiated in this expanding field may seek some answers before adopting a safety tool, for example: “What should I be looking for in a safety tool?”, “When do I need to use a safety assessment?”, and “How much should I pay?”.

Table 1 illustrates three safety selection tools that are currently available in the marketplace. Whilst there are many others available and this list is not intended to be exhaustive, this summary profiles the features you might typically find in a safety tool and how these have been applied across a range of industries.

Table 1 – Summary of 3 sample safety selection tools currently available

	Dependability & Safety Instrument (DSI)	Onetest Work Safety Assessment (OWSA)	Hogan Safety Report
Assessment provider	SHL Australia	Onetest	Hogan Assessment Systems (via Peter Berry Consultancy)
Features	A short screening tool to assess if an individual's disposition is productive, reliable and safe. Originally developed for operational staff or non-supervisory staff, but may be used for a broad range of jobs and roles.	Identifies the degree of risk associated with safety behaviour and attitudes for each candidate. 3 report options: Position Report (multiple candidate comparison); Individual Report (for employer); Candidate Feedback Report (for candidate).	Predicts accidents and other counter-productive work behaviours (e.g. driving violations, accidents, unexcused work absences)
Time to complete test	7 minutes	10 minutes	15 minutes
Candidate qualities measured	<ul style="list-style-type: none"> ▪ Compliance with policies and procedures ▪ Coping with pressures ▪ Being reliable ▪ Being confident and delivering 	<ul style="list-style-type: none"> ▪ Safety control ▪ Risk aversion ▪ Stress management ▪ Drug aversion ▪ Attitudes toward violence 	<ul style="list-style-type: none"> ▪ Compliance ▪ Strong ▪ Cheerful ▪ Vigilant ▪ Cautious ▪ Trainable
Norm groups	Available on request	Employed Adults (8,000 people, primarily non-indigenous Australians) Industry Group (7 industries ranging from 135-2330 people in each) Company Specific Benchmark (current employees of an organisation)	5,785 cases from a broad range of entry-level jobs, job families and languages. By starting with a large database of over 12,000 cases, Hogan applied a series of 'filters' to ensure balanced representation across job families, industries and languages.
Price per applicant¹	\$25	\$150	\$45-90
Good for ...	<ul style="list-style-type: none"> ▪ Front-line operational roles. ▪ Recruitment and selection. 	<ul style="list-style-type: none"> ▪ Organisations seeking specific comparison groups. ▪ Recruitment and selection. 	<ul style="list-style-type: none"> ▪ Entry-level positions ▪ Recruitment and selection purposes pre-hire ▪ Development purposes post-hire / for existing staff.
Not suitable for ...	Executive positions where a more in-depth understanding of capabilities and attributes are needed.	Development purposes for existing staff	Executive positions

¹ Excludes GST.

Case Studies: Impact of Safety Selection Tools

Selection tool	Client Industry	Purpose
Dependability and Safety Instrument (DSI)	Aviation / passenger transport	Assessing safety-consciousness of apprentice aircraft maintenance engineers

The DSI was administered to 72 apprentice aircraft maintenance engineers employed at Qantas. In addition to asking employees to complete the DSI, each employee's performance was assessed by their manager against several performance measures including overall job performance, safety (accident proneness), and reliability. Employees' scores on the DSI were then compared with their manager's ratings to determine whether the questionnaire predicted workplace behaviours related to effective performance.

Those who scored in the top 30% on the DSI were found to be more than twice as likely to be rated as above average on overall job performance by their manager. 93% of high scorers on the DSI were also rated by managers as above average performers when it comes to safety, compared to 44% of low scorers on the DSI.

Therefore the results indicate that people who score in the top 30% of the DSI are more than twice as likely to be rated by managers as above average on safety, than those scoring in the bottom 30%. In addition, the results also showed the DSI to be a good indicator of employee reliability, and an employee's tendency to be confident in delivering on the job.

Selection tool	Client Industry	Purpose
Onetest Work Safety Assessment (OWSA)	Heavy machinery	Evaluate predictive value of the safety selection tool

Hiring managers in a heavy machinery company were sceptical about the validity of safety selection tools such as the OWSA. Some 'high risk' candidates were hired, contrary to senior management expectations and Onetest recommendations. Three years after the introduction of the OWSA, an impact study of 1,243 employees was commissioned to determine how effectively the assessment predicted safety incidents.

Employees were categorised into two groups based on their scores in the OWSA:

- ✎ High Risk – safety scores below the 20th percentile
- ✎ Low Risk – safety scores equal to or above the 20th percentile.

This study clearly demonstrated that the 81 'high risk' employees:

- ✎ Received average work cover payments of \$1,643, over 4 times higher than 'low risk'
- ✎ Received an average of 4.38 paid leave days, over 6 times more than 'low risk'.

Had this organisation not employed the 81 people identified as ‘high risk’, they would have saved \$101,620 on workcover claims and nearly 300 paid leave days. This would have significantly improved the company’s profitability. These clear findings resulted in the establishment of new hiring policies and procedures requiring candidates who score in the bottom 20% on this assessment to be excluded from the selection process.

Selection tool	Client Industry	Purpose
Hogan Safety Report	Manufacturing	Reducing workers’ compensation claims

Peter Berry Consultancy, an Australian distributor of Hogan Assessments, worked with assembly workers from a small manufacturing company to identify the personality characteristics related to workers’ compensation claims filed over a two-year period. Assembly workers build small appliances by tightening bolts, aligning components, and connecting electrical wires. Using the Hogan Safety Report, the results found that

employees who tend to be easily distracted (low Vigilant) and take unnecessary risks (low Cautious) were more likely to have filed workers’ compensation claims in the past two years compared to employees who tend to stay focused (high Vigilant) and evaluate risks (high Cautious).



Additionally, 63% of individuals with below average safety scores filed a workers’ compensation claim, compared to only 28% of those workers with above average safety scores. For this manufacturing organization, using the Hogan Safety Report to hire only those individuals with above average safety scores would have resulted in a 40% decrease in workers’ compensation claims.

Emma Shannon

Emma Shannon is a registered Organisational Psychologist with over eight years of experience spanning change management, program management, group facilitation, psychometric assessment and organisational development. She is the Manager Investment Control with the TransLink Transit Authority, a statutory authority which coordinates and delivers public transport services in South East Queensland. Emma applies psychological solutions to roll out a whole-of-organisation approach to program and project management in a way that achieves lasting behaviour and culture change. In her spare time she performs contract work to prepare psychometric reports and deliver assessment centres for recruitment and selection purposes ... and contributes to the Illuminations magazine!

Selecting for Safety in the Mining Industry

Safety Selection at Locher Human Resources:

Locher Human Resources have designed and delivered a number of assessment processes to assist organisation's gather objective information about their candidates' abilities and behaviours in accordance to the competencies of the role. The Psychological Services team at Locher apply their empirical knowledge to assist managers and recruiters from a number of industries identify suitable candidates for job fit. In recent years, Locher has become more involved with the recruitment and development processes in the mining industry where safety is a big prerogative. The success rate of their safety selection process has been significant in reducing incident rates and increasing manager satisfaction with employees. Over the years, they have increased their presence at various mine sites nationally and are aiming to extend their services internationally.

The Safety Imperative in the Mining Industry

The critical competencies required for a role and the organisation's core values drive the choice and design of the assessment batteries used in a recruitment process. In the mining industry safety behaviours and attitudes are of paramount concern to reduce the number of critical incidents and safety breaches in the workplace. For these clients, selecting safe personnel is a risk management process that can save time, money and other resources such as training needs.

The Selecting for Safety Process

In order to gather robust information about the safety behaviour and attitudes of candidates, Locher have utilised a comprehensive assessment approach which provides insight into a person's capability and suitability to the applied role. This includes:

- **Safety assessment tools** like the Hogan Safety Report provided insight into the candidate's preferred behavioural style and safety orientation
- **Ability tests** like the SHL ability assessments
- **Experiential group activities** that determine a candidate's potential performance when placed into a comparable high risk working environment
- **Traditional methods of recruitment** including interviews and reference checks

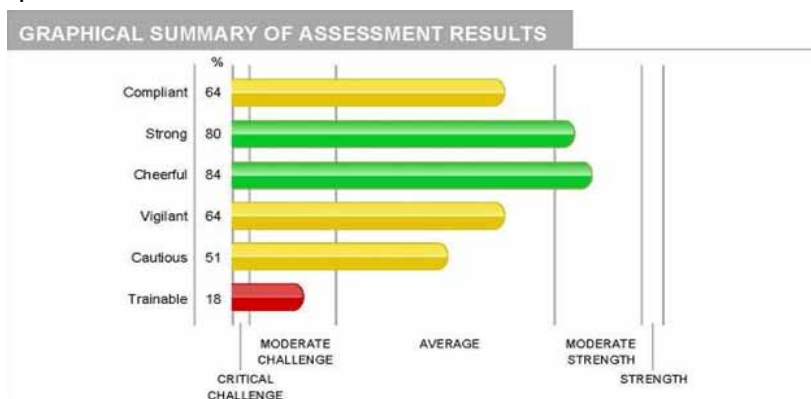
Safety is a difficult concept to measure without objective tools. The thorough assessment process offered to clients provide them with an objective, evidence based decision making framework to select candidates ideal for a high risk environment.

Information gathered from this process provides recruitment panels with accurate and objective information about safety behaviours which could not be obtained from a standalone interview process. Clients in the mining industry have found this combination of assessments to be invaluable in profiling a candidate's capacity to learn and apply new information and skills to successfully perform in the designated role.

Finding the Ideal Candidate Profile Using Safety Profiles

Using the Hogan Safety Report, Locher identifies candidates who are best suited for roles in a high risk environment like the mining industry. Some of the key characteristics which are relevant for safety assessments are:

- **Individual traits like being vigilant, conscientious, cautious and compliant** are highly desirable in a safety assessment. These personal traits are especially attractive to mining sites, as they narrow down the applicant pool by identifying those who are more likely to maintain safety standards.
- **Capacity to remain calm under pressure** is another key focal point. Candidates who are more likely to maintain composure when placed under high pressure situations are less likely to make mistakes
- **Trainability** measured by the tool has been especially important throughout the psychometric assessment process as it provided an insight into a candidate's attitude and discipline towards developing new skills through mentoring and training programs. We found that this trait is increasingly valued for the high risk roles. Among candidates with years of industry experience, trainability along with ability results has significantly screened out candidates who are less likely to adjust to new values and processes.



A Sample Graph from the Hogan Safety Report

Using Experiential Activities in Safety Assessments

To measure behavioural traits, experiential activities are designed for candidates to participate in during the Assessment Centres. These activities provide us with insights into how the candidate is likely to react and interact with others when placed into high pressure and high stress situations.

Activities are designed in collaboration with work site personnel to ensure the exercises simulate the environment and provide opportunities for these critical

behaviours to be observed. These activities also provide insights into team interactions, problem solving skills and demonstrated safety behaviour.

Evidence obtained from the experiential activities enable an objective assessment of each candidate by the panellists involved in the Assessment Centre. By collating the information gathered throughout the day, an objective selection of candidates could be made by the organisation to determine who would proceed to the next stage of the recruitment process. Additionally, data also allows assessors to develop further questions for reference checking particularly if concerns were highlighted at the final meeting.

Accuracy and Reliability of Safety Selection Process

Clients are often surprised with the reliability and accuracy of the results obtained through the assessment processes. It enables the panel to identify candidates with potential who, while having achieved the predetermined benchmark, may have been overlooked had the assessment process not been in place. The assessment process also helps uncover underlying attitudes and behaviours experienced personnel may have regarding the requisite competencies and values of the organisation.

In many situations, candidates who looked suitable on paper and at interview did not profile or demonstrate the required safety attitudes and behaviours the organisation sought. Furthermore, as human judgment comes with high risks of error caused by biases and stereotypes, the process for these clients has also increased their awareness that a variety of screening activities are necessary to identify ideal candidates.

The success rates of the psychometric assessment processes that were utilised have been extremely positive. For one large mining organisation, all of the candidates who were selected through the assessment centre passed the probationary periods with no concerns. Additionally, one hundred percent of the selected candidates chose to continue employment with the organisation. The process was also cost effective for the organisation as no resignations or dismissals occurred in the probationary period. All of the evidence gathered throughout the process ensured that safety was objectively assessed while also providing them with multiple benefits such as saving the organisation costs, materials and human resources.

For further enquiries regarding the Locher assessment process, please contact our Psychology Team on (08) 8201 1109.

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Safety Climate: Fostering a positive safety climate in high reliability organisations

Organisations are responsible for the health and safety of their workers. Achieving safety is much more challenging in some industries and occupations than others. An organisation with a high level of inherent risk or danger or detrimental consequence and/or operational complexity is sometimes called a high-reliability organisation (HRO).

The literature on HROs suggest a positive shift that moves away from a preoccupation with incidents of failure/catastrophe to uncovering organisational systems and management processes which can ensure that accidents are prevented.

The 5 key principles that define HROs include:

- Recognition that safety is a primary objective instead of being preoccupied with the risks of failure
- Simplification of complexity and keeping things simple
- Understanding of the challenges of operations at the 'sharp end'(eg, the pilot, driver, soldier, machine operator) and communicating that to the management and policy developers at the 'blunt end'
- Driving a commitment to building resilience within the system to enable adaptability and the ability to 'bounce back' from setbacks and failure
- Respect for (safety) expertise

These HRO principles have led to an emphasis on factors such as a proactive culture, well-defined organisational roles and structures, genuine learning from mistakes, rigorous training, and integrated processes across the various areas and levels of an organisation.

Building a Safety Culture

A safety culture is the product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation's health and safety management" (Advisory Committee on the Safety of Nuclear Installations). The diagram below highlights some of the key elements required for building and transforming a safety culture.



Figure 1: Key Elements for a Safety Culture Transformation
(adapted from Patankar & Sabin, 2010)

It is generally accepted that a state of safety culture exists in every organisation or industry although it is rarely well understood. Any large organisation is likely to have a number of safety subcultures that the literature often defines using complex classifications (e.g. - secretive, blaming, reporting, just, and generative). More often than not, this only serves to complicate the leadership's ability to understand the organisation's culture. Simply put, the dominant state of safety culture can often be described as either positive or negative.

***A positive safety culture is associated with intrinsic interest in safety on the part of workers and motivation both to comply with safety standards and requirements and to participate in safety initiatives.
But how does a manager know that such a culture exists?
And how does one implement cultural change if it does not?***

Interest in safety culture is also associated with the need to transform “the way people do business” to more desirable - and safety-friendly – states. Safety culture is a relatively new area of research so our understanding of safety culture is still evolving, as are the tools used to assess it. For example, a recent focus in the literature on safety culture has been the role of leadership in influencing and establishing a positive safety climate.

Measuring Safety Climate or Culture?

Although a safety culture is highly desirable in HROs, it can be quite complex to understand and measure accurately. Hence, psychologists prefer using safety climate assessments which provide a snapshot of the perceptions of the state of safety in an organisation at any given time. It is considered to be a temporal measure, subject to situational changes.

While culture is regarded as quite stable, climate is considered relatively dynamic. Nevertheless, climate is considered easier to measure because it comprises those elements - attitudes, perceptions, opinions and behaviours – that psychologists and sociologists have been measuring for decades.

Fundamental Dimensions of Safety Climate

A review of popular safety climate assessment tools identifies the following dimensions as being fundamental to establishing a safety climate:

- Management’s commitment to safety.** Management must be perceived to place a high priority on safety, and communicate and act upon safety issues effectively. This dimension consistently emerges as the most important factor in the development of an effective safety climate.
- Communication.** A positive safety culture requires effective channels for top-down, bottom-up and horizontal communication on safety matters.
- Supervisor support.** Supervisors need to place a high priority on safety, respond to safety concerns, provide support and encouragement for workers who comply with safety procedures and participate in safety activities.
- Safety responsibility.** Workers’ attitudes toward safety are underpinned by their sense of individual responsibility and the culture within the work environment.
- Resources.** A lack of resources, such as tools and equipment, has been identified as one of the main safety issues across most HROs.
- Training.** Lack of knowledge usually ranks very highly in safety incidents.
- Workload.** Workload should not exceed employees’ capacity to perform their tasks safely. High workloads have been found to be linked with a decline in safety performance in all industries, as production or efficiency concerns take precedence over safety.

Safety culture cannot be assessed by safety climate measures alone but these measures have been used successfully in many industries to monitor levels of safety awareness and attitudes towards safety in the workforce. Climate surveys are easily administered, the resulting data are quantitative, benchmarks can be established, and feedback can be provided to management and the workforce. These characteristics make surveys a potent agent for change in safety culture. Safety climate is also considered the logical measure for determining the effectiveness of safety interventions because of its temporal nature. While the safety culture underpins safety climate, safety climate is much easier to measure. James Reason, a pioneer in this field, likened measuring safety climate to taking the temperature of the organisation (Reason, 1997). Safety climate change is the first step to establishing a safety culture.



Safety Climate Matters

It is now accepted that safety climate measures can help to predict safety behaviour. These findings appear to hold, irrespective of how it is measured (i.e., self-reported safety behaviour or objective measures of safety outcomes). Comparisons across 121 different studies confirmed that psychological climate, operationalised as individuals' perceptions of their work environment, does have significant relationships with work attitudes, motivation, and performance (Parker et al. 2003).

A study of health employees, here in Australia, found organisational climate factors such as leadership, professional interaction, decision making processes, and role clarity had a significant impact on perceptions of safety. A positive

safety climate increased self-reported compliance with safety regulations and procedures, and participation in safety-related activities.



As safety legislation evolves, there are increasing opportunities for organisations to meet the intent of such legislation. Through the use of targeted interventions, HROs can move away from just driving safety compliance to building a safety climate which is embedded into the values and the work ethic of the organisation.

- **Peter Murphy & Gerard Fogarty**

Peter left full time service as a psychologist in the Australian Defence Force in early 2010. He is a Fellow of the Australian Psychological Society, ACT COP Chair and holds adjunct positions at three Australian universities. Peter continues to support the Australian Defence Force as a Reserve consultant. Professional interests include operational leadership, applied human factors, aviation psychology, fatigue, performance and safety management, organisational climate interventions, strategic human resources, selection, and research in real-world settings. Qualifications span the areas of psychology, defence studies, international relations, human resource management, aviation human factors and accident investigation. He is busy in the start-up phase of a consulting practice.

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Accident Prevention: A systems approach

Serious accidents have serious and diverse consequences, as the Deepwater Horizon oil rig explosion clearly demonstrated earlier this year. The adage '**prevention is better than cure**' has rarely been more apparent. Such accidents spawn immense investigative efforts whose primary intent is the prevention of similar events in the future. Investigations are usually based upon formal models of accident causation. Reigning accident causation models can be characterised either as individual or systems approaches. Psychology can contribute important insights to both approaches.

The Individual (Reactive) Approach to Accident Prevention

- **Focus on individual errors** - The traditional approach to understanding the causes of accidents and safety incidents focus on individual errors or non-compliance to safety behaviours in the workplace
- **Attributes safety to individual tendencies** - This approach tends to view most unsafe behaviour as attributable to human tendencies or limitations such as forgetfulness, inattention, complacency, or incompetence.
- **Isolates safety from the context or system** - The individual approach isolates the person and the unsafe behaviour from the context or systems within which they occur (Reason, 1997).
- **Drives a culture of blame** – This approach tends to foster a culture of blame and punishment which from a preventive safety perspective are counterproductive as they fail to address the systemic roots of the safety issue

The individual approach has proven largely ineffectual as a means of accident prevention because errors are inevitable and part of the human condition. Even conscientious and dedicated professionals who usually do their jobs well are capable of making serious safety errors.

The Systems (Preventative) Approach to Accident Prevention

- **Focus on systemic faults** - The system approach to accident causation looks for the faulty systems within an organisation which is often the source of the error.
- **Assumes individual errors are to be expected** - It is based on the fundamental assumption that individuals are fallible and errors are to be expected, even among the best of professional.

- **Aims to improve the working conditions (as opposed to individual capability)** - This approach acknowledges the premise that the capabilities, limitations and preferences of the human worker cannot always be anticipated or modified effectively. We can however change the conditions under which humans work. By concentrating on the conditions under which individuals work, this approach tries to build defences to prevent unsafe behaviour and errors or to capture and thereby diminish their effects.
- **Errors are seen as consequences rather than causes** – Errors are viewed as consequences of systemic factors which allow, and possibly even compel unsafe behaviour by individuals and teams. For example, safety procedures may be well designed and documented but never enforced due to cultural and leadership deficiencies, or ignored because of high workloads.
- **Individuals seen as the final defensive layer** - The individual is recognised as the final adaptive filter or defensive layer that can recognise and recover from error.

Systemic Causes of Accidents

James Reason cites several systemic deficiencies or causes that predispose individuals to be susceptible to safety errors and accidents.

These include:

- Lack of management commitment to safety
- Unclear safety responsibilities
- Poor training in safety procedures
- Working conditions which are characterised by fatigue, time pressures, and low morale
- Inadequate job designs
- Conflicting goals and priorities (eg – pressures in meeting deadlines as opposed to following safety protocols)
- Poor management decisions

It is now axiomatic within safety management and research to look beyond the individual contributions to unsafe behaviours and to address the organisational contributions to human error. Organisational psychologists, with their strong conceptual foundations in organisational behaviour, are particularly well-placed to contribute to systems approaches to accident investigation.

- Peter Murphy

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Safety Management at the Sharp End

One of Australia's most experienced safety managers is **Lieutenant Colonel Martin Levey**. A trained psychologist, Martin currently oversees the safety management system within Army Aviation. His exposure to safety management began in an investigation role in 1996 when he was seconded to the Accident Investigation Team that examined the tragic collision of two Black Hawk helicopters outside Townsville. It was a sobering introduction to the field of safety prevention.

In accident investigations, a psychologist typically works with members of the Board of Inquiry, who were predominantly technical and operational specialists, to help them develop an understanding of the systems approach to the accident preventions. The Board is encouraged to explore the organisational antecedents of the accident, and many of the dozens of findings and recommendations were related to systemic issues. "One of the greatest challenges for psychologists undertaking accident investigation roles is to manage their clinical or supporting instincts to respond to the suffering and grief associated with such accidents, and to remember that their key task is to explore the possible human and organisational factors that contributed to the event" says Martin.

Martin was a member of the five-member Board of Inquiry into another of Australia's major recent aviation accidents - the crash of a Royal Australian Navy Sea King helicopter on the Island of Nias in Indonesia during disaster relief operations. That task took 22 months to complete, including 100 days of hearing evidence from 170 witnesses, examining over 500 tendered exhibits, reviewing ten thousand pages of evidence, and contributing to the 2,000-page report.



The Sea King Accident Site

Martin recalls a good deal of tension between his normal role as a psychologist and that of essentially being one of a panel of “judges” in an inquiry. “The nature of the role means that there must be a distance between the members of the Board and those appearing before the Inquiry – friends and family of the victims, survivors of the tragedy, those who might be have an adverse finding made against them, as well as other dedicated members of the Defence Force.”

Given the complexity and importance of the role, Martin was acutely aware of the need for “refreshment” of his knowledge base, even in areas of psychology and human factors, so that he could be as well-informed as possible. To this end, he spent many evenings, after long days in the boardroom, delving into the books. “I also very quickly had to become credibly proficient in areas such as safety policy, maintenance and engineering procedures, and command and management systems in a different Service,” Martin recalls. “I could not comfortably provide psychological and human factors advice without knowing the context in detail. That context was the minutia of aviation maintenance procedure, safety systems policy and operational command and control.”

Today, Martin’s contribution to safety taps a third dimension of safety. As manager of safety systems, he is responsible for maintaining, monitoring, analysing and reporting on safety trends within Army aviation. He routinely conducts training related to safety and human performance to Defence aviation audiences. An important component of the safety reporting system is the ‘Safety-PULSE’ survey.

“The Safety-PULSE is a safety and command climate tool that is administered about every six months in all Army Aviation units. It measures issues related to safety leadership, reporting behaviour, pressures that might lead to noncompliance and so forth. The results are discussed with unit commanders in a central forum and I’m constantly amazed at the innovative ways that commanders put the information to use,” Martin observes.

It is clear from Martin’s broad experience that psychologists have several central roles to play in contemporary safety management. Whether it is as an investigator, expert adviser, systems manager, researcher, trainer, or internal consultant to senior management, the organisational psychologist is an integral part of ensuing safe and effective aviation operations.

Safety Culture at Allseas

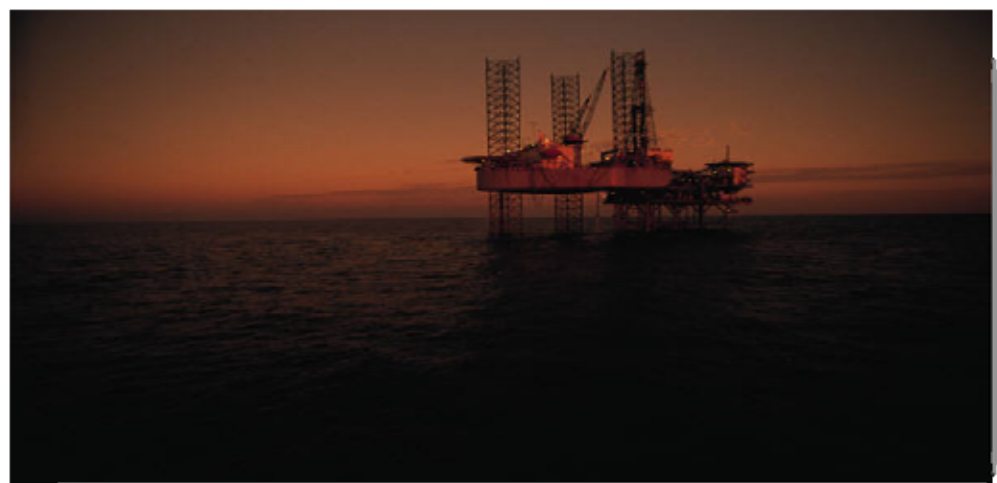
The following information was obtained from an interview conducted with John Carlton and Bryan Jenkins, Directors at Quorum Response Communicators. Quorum Response Communicators regularly utilise the tools and principles of organisational psychology and consult with organisational psychologists to ensure they deliver quality impact for their clients.

Company Overview

The three founders of Quorum come from a range of backgrounds, including aviation, communications and accounting. Together their core capabilities centre around improving organisational culture (particularly safety culture), leadership and communication. Quorum believes that any program that attempts to change an existing culture needs to start from the top. As John Carlton from Quorum says, "If it's not from the top down, the intervention won't work."

A 'typical' day at Quorum

For Quorum there is no such thing as 'business as usual'. As a flexible and responsive organisation, the Quorum consulting team travels extensively, both domestically and internationally to work with their varied client base. Their range of clients includes companies in the oil, gas, maritime and mining sectors as well as service organisations and local councils. Their current projects include group and one-on-one facilitations around behavioural based leadership in safety, communication and customer service delivery.



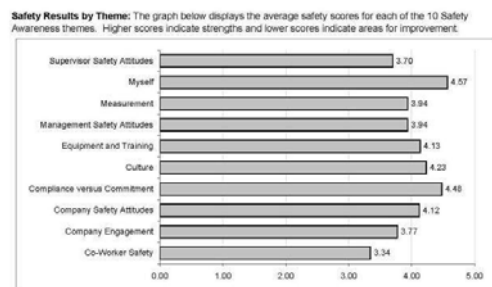
Safety Leadership Program at Allseas

Recently the Quorum team conducted an in-depth safety program for Allseas, a global offshore pipe lay and construction company. Allseas already promotes a ‘safety first’ culture and asked Quorum to work with their project team responsible for their Gorgon project work. The primary objective for Quorum was to ensure that all members of the new team had a consistent understanding and commitment to the Allseas’ safety goals and philosophy.

Consistent with Quorum’s commitment to leadership ownership, **Step one** was to meet with the management team from Allseas to scope and design the safety program. These meetings ensured that the consulting and project management teams both had a shared vision of the intended safety program outcomes and deliverables.

Step two for the safety program was to better understand the make-up of the management team – it’s collective experience, strengths and potential opportunities to improve. To facilitate this step Quorum asked the project management team to complete two Leadership-focused personality inventories, the Hogan Personality Inventory (HPI) and the Hogan Development Survey (HDS), to better understand their individual strengths and their development opportunities. Each member of the project team was then given 1:1 feedback and coaching to interpret and discuss their results. During this session a personal plan outlining their personal goals and actions was developed and the benefit of which is maintained through ongoing individual performance reviews.

The personality profile results were also mapped collectively to develop a **leadership team profile**. In addition to helping the team get to know and understand each other very quickly, this group profile allowed the project team to highlight overall group strengths and importantly their development opportunities.



Step three was to use the ‘SafeSystems’ **safety climate survey** to measure the overall safety attitude of the project team as well as their attitudes towards key safety-related issues such as; communication, equipment & training, compliance versus commitment, culture, and employee engagement.

Together the **safety climate survey** results and the **leadership team profile** allow the Quorum team to verbalise the “Allseas Safety Culture”, to garner the buy in from all as to the culture and safety outcomes and to pinpoint critical risks and potential blind-spots that may affect the safety performance and reputation of Allseas. These insights and their subsequent recommendations will form the basis of the behavioural based safety programs as the project team grows in the future.

Where to from here?

Over the next 12 months the Allseas Gorgon project will expand from the current 15 member project management team to a project of over 700 employees and the Allseas Safety culture work done will assist them to hire and develop the right people for the project, ensuring they fit the ‘safety first’ culture at Allseas.

After conducting the initial safety diagnosis and individual debriefs, John Carlton from Quorum will conduct review sessions to ensure that Project team effectively address the key findings of the **leadership team profile**, the **personal plans** and the **safety climate survey** as well as the day to day challenges of running a major project.

The data already obtained from the **leadership team profile** and the **safety climate survey**, provides Quorum with a project benchmark. “This data will be an important ‘line in the sand’ for the project leadership team and will allow us to track changes in the safety culture across the life of the project” said John Carlton”.



For more information about Quorum Response Communicators please contact John Carlton (0418 204 496).

John Carlton

John is a corporate facilitator with 16 years experience in developing all facets of communication and skills of persuasion. He has worked extensively at all levels of executive and with an impressive list of firms across a very broad spectrum of industries, throughout Australia and Asia. His capacity to assess and evaluate the needs, and then to tailor a program that addresses the issues and ensures noticeable changes.

Byran Jenkins

Bryan Jenkins has extensive experience in the Management of Companies in the manufacturing and distribution arena throughout Australasia and South East Asia. Bryan has developed and presented training sessions to companies and individuals with particular emphasis on Strategic planning and the various business cycles associated with that. His vast business experience provides a pragmatic and hands on approach to the training strategies of Quorum Response.

Reflections on Practice: *Psych in the City*

I recently did some work with a team that routinely asked its members to do dangerous tasks. They had to defuse bombs or conduct sieges in the course of their daily work activities. Safety was on everyone's mind and agenda. They threw themselves into training, training and more training as a way to facilitate safe practice when the real event was being managed. It struck me though, that the most valuable attribute they had in the frontline of the safe performance of their duties was their sense of team camaraderie and support. Interestingly, this team was a highly functional oasis in the desert of their organisation.

Safety is not always top of mind in organisations that don't have obvious risks to manage, but in every organisation, people and their wellbeing should matter. Though many organisations espouse this as a fundamental principle or value, the rhetoric does not always match their practice. By taking a systems approach to managing safety, whether physical or psychological, it is easy to see that safety is a fundamental component of wellbeing. This in turn is fundamentally related to the culture and climate of organisations, leadership style and concern for employees.

So rather than see safety as an isolated issue, relating to high risk occupations, we need to remember that safety is present in every conversation we have with every employee in every organisation. Importantly safety should be present in our thoughts when we are recruiting and selecting individuals for roles and ensuring we employ the right selection tools will assist us in making good matches. Although it is good to understand what safety attitudes our leaders have, it is just as important to understand what skills they have in developing supportive relationships with their team members and fostering the team spirit, so evident in the team I worked closely with, as this ultimately has one of the biggest impacts on keeping people safe.

- Susan Crawford

Susan works as a Senior Consultant at the National Leadership Institute and is an experienced educator, organisational psychologist and consultant with broad experience across all business sectors. She brings with her a wealth of experience relating to organisational surveys, training and facilitation, team building, conflict resolution, executive coaching and career planning. Having worked in organisational development for many years, Susan has been focused on the provision of a range of consultancy services aimed at making workplaces happier, healthier places to be. She believes that one of the key ways of achieving this is by developing leaders, particularly in the areas of effective people management and building positive workplace cultures.

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- The *Illuminations* Editorial Team

