

## What Makes a Safety Management System Fly \*(summarized from the 25 page version)

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### INITIATING CHANGE

- When initiating change remember “People support what they create”



#### Other guiding principles

Use real world approaches not theory

All paperwork must be succinct

Whatever is done in OHS must be based on a needs analysis

Need to get some runs on the board quickly

Concentrate on the things that give you the best bang for your buck

Aim for simplicity not complexity

Minimise the bureaucracy and bull-shit

Face to face communications should be used wherever possible

Be guided in what you do by taxonomies of Class 1 damage in your industry

As the facilitator of the process I will use the skills of appropriate self-disclosure and reflective listening

#### SAFETY BENCHMARKING

Over a 14 month period in 1994 -5 BHP Minerals carried out an extensive international safety benchmarking exercise with “best in safety class” companies throughout the world. Cost approx. \$25 Million.

25 locations throughout the world participated in the study. An approximate 100 page report on findings is available should anyone wish to refer to it.

The following were recurring themes in the world’s best safety performers.

**1. Executive management provides the impetus for safety performance. This means that senior management is not only committed to and supports safety, but that it insists on safety performance in a manner that is clearly understood and echoed at all levels.**

**2. Management focus is a key to quality safety performance.**

\*1 & 2 above were seen as key factors

3. Existence of a company-wide framework or systematic, standardised approach to safety. The approach has performance standards that receive regular internal and external audits.
4. Objectives are set and organisations work towards set targets for implementation of the objectives.
5. Safety personnel report in at the highest level in the organisations. They have mainly an advisory function. Management and supervision drives the safety program not the safety personnel.
- 6 Effective safety training targeted to identified needs at all levels. Induction training and detailed safety training for supervisors and managers was high on the priority list. Regular safety meetings were seen as important.
- 7 Active personal involvement of senior management personnel in the safety program.
- 8 Safety is considered in performance evaluations of all staff.
- 9 Regular, detailed audits of the safety management system.
- 10 Formal approaches to hazard identification and risk analysis, employees were fully involved in this.
- 11 Formal emergency response procedures that were practiced and audited.
- 12 The best in class addressed contractor safety before contractors were allowed on site, they pre-qualified them based on safety and made safety performance a contract condition. Contractors were expected to perform at the same safety level as permanent employees.
- 13 High on the list of the ways the best in class built safety awareness were management participation and leadership, dissemination of information, safety meetings and rewards or recognition of performance.
- 14 Safety is a condition of employment and dismissals occur for non-performance.
- 15 Well-managed rehabilitation programs are in place.
- 16 The best in class use medical examinations and testing to ensure fitness for duty.
- 17 There were E.A.P's in place.
- 18 There were off the job safety programs.
- 19 There was an emphasis on vehicle / plant maintenance and driver / operator training programs.
- 20 There were extensive PPE training, maintenance and audit programs.
- 21 Lock-out procedures were used instead of tag-out.
- 22 Best in class managers and supervisors respond positively to safety issues that are raised.
- 23 Best in class supervisors are responsible for safety auditing, investigating personal damage occurrences(accidents), planned job observations and training.
- 24 All levels in the organisation make decisions that reflect the philosophy "Safety first-Production will follow".

It is suggested Safety Management Systems be built around the above benchmarking findings.

Suggested MUST HAVES for a successful Safety Management System (some of the following interventions will work better in your organisation than others, the skill is in recognising and applying the best interventions for your particular organisation).

#### 1. Compliance with the Statute law

In Queensland a number of advisory standards are incorporated under the Workplace Health and Safety Act 1995. These standards provide worthwhile guidance for introduction of a successful Safety Management System.

#### 2. The Compliance with Common Law (in states where applicable)

There are four basic duties under common law :

- A) To provide and maintain competent staff.
- B) To provide and maintain a safe place of work.
- C) To provide and maintain safe plant and appliances.
- D) To provide and maintain a safe system of work \* ( a system means generally the way things are done)

The above duties contain few words but the meaning is quite significant. The employer really has to do everything reasonably and practically that he can do. Many would suggest he then has to go a few extra steps. Managers and supervisors really need to be trained in common law duties to fully realise the impact of this important area on how they manage safety.

### 3. Highly visible demonstrated commitment to health and safety on behalf of Senior Management

It is not unusual in companies with high profile safety management systems for senior and middle management personnel to spend over 30% of their time directly on OHS issues. Key personnel conduct safety meetings, they personally participate in safety inspections in their area of responsibility, they have safety as a first high-profile agenda item of every meeting they conduct and they make it clear that they expect those below them to place a high priority on safety. It is not enough for top management to be committed to safety; it must be a clear and high profile demonstration of commitment - you get the performance you demonstrate you expect. This is one area where positive action by management can have an overwhelming influence on the culture of the organisation. (Refer to the paper "Safety culture & how to improve it" by this author) A detailed Safety Responsibilities / Accountabilities matrix for management and supervision is appropriate.

### 4. Safety Committee

There should be a senior management safety committee to develop policy and an employee safety committee to recommend safety policy to the management committee and to implement policy agreed to by the management committee. Safety committees are much maligned. Safety committee members must be trained for their role and well supported by management.

### 5. Safety Meetings

Regular safety meetings coordinated by the supervisor are an ideal medium to transfer safety messages (studies have shown the significant effect supervisor communications can have on the workgroup).

### 6. Safety as part of performance appraisal

During the performance appraisal of supervisory and management personnel an initial and high emphasis must be placed on safety. The focus should not be on what personal damage occurrences (accidents), have occurred in the supervisor's workgroup, rather it should be on what he/she has done to introduce excellent safety programs.

### 7. Supervisors and employees must be trained and held accountable for safety

Subjects such as compliance with statute law, compliance with common law principles, hazard identification, risk management, hazard control, personal damage occurrences (accidents) investigation, and job safety analysis should be regarded as the basic skills and the knowledge for supervisors (their "tool-kit" of safety skills).

### 8. Risk Assessment

Notwithstanding the popularity of risk assessment techniques there are some limitations to the techniques that need to be realised. I have always been of the view that what you do to control risk as a result of a risk assessment exercise is more important than the risk rating. Placing too much emphasis on comparison of risk ratings will lead to inappropriate priorities. The reality is that without an excellent system of Class 1 personal damage occurrence data in Australia estimates of probability and consequence in risk assessment exercises are often subjective. A lot of the risk analysis in industry consists of slightly informed guesswork from stakeholders, the term "consignorance" applies (what happens when you combine ignorance with consensus) (Source- Geoff McDonald) The lack of a National Class 1 data base is an impediment to progress.

### 9. Incident investigation

Formal incident investigation models e.g. “Analysis Reference Tree Trunk”, “Tripod” should be used to guide observations. Once personal damage occurrence investigations are carried out there must be formal methods of auditing the success of implementing recommendations. Despite its popularity root cause analysis has major limitations. After detailed accident investigations it is surprising how many organizations never actually get around to implementing the recommendations.

#### 10. Safety Inspections

Safety checklists tailored to the hazards of the area being inspected must be developed. Involvement of the workforce in actually carrying out the inspections is suggested.

#### 11. Good housekeeping

Good housekeeping encourages better housekeeping, improves morale and generally makes for a better work environment. Good housekeeping is a place for everything and everything in its place.

#### 12. Comprehensive induction program

Induction training must be tailored to the risks of the work environment. Essential subjects in the induction program e.g. isolation procedures can be revised on an annual basis through the safety meeting program. Refresher training on induction subjects must be tailored to employee needs not conducted because of stipulations for regular re-training.

#### 13. Goals

Peter Drucker is reported to have said “What gets measured gets done” Zero disabling injuries is a worthwhile annual goal.

#### 14. Auditing

Organisations that are successful at Occupational Health and Safety have regular comprehensive internal and external audits. Standards must be developed for the safety management system e.g. Visitor safety, contractor safety, compliance with statute law, use of personal protective equipment, management commitment, hazard identification/risk assessment, safe working procedures, loss prevention & control, employee involvement, emergency procedures, accident investigation, education/communication, inspections, health & fitness, injury management, etc and compliance with these standards must be audited. A quality assurance approach where NCR (Non-compliance reports) are issued is recommended. Auditors must receive training by authoritative training professionals, comprehensive auditing guidelines must be developed and formal processes introduced to follow-up on audit recommendations. A criticism of safety audits is that they are usually not based on an examination of serious personal damage occurrences (accidents) experience. After detailed audits it is surprising how many organizations never actually get around to implementing the recommendations.

What ever paperwork you produce, be succinct. Auditing documentation tends to get unwieldy and difficult to use in practice. Only the very dedicated or very bored are going to wade through pages and pages of auditing documentation.

Need to audit against a standard, maybe A.S./ N.Z.S 4801, Tri-Safe, internal standards of OHS excellence, Zero Harm principles or a commercial Safety Management System or a combination of the foregoing. There should be guidance on the requirements of implementing whatever standard is used for the audit.

Need a set of guidelines for the auditors to use. These must be communicated to the sites to be audited. Duties of the audit team leader, audit team composition and duties of audit team members must be outlined.

A set of audit questions needs to be developed. eg. if you were interested in auditing management commitment to safety questions could include-Give examples of how management demonstrates its commitment to safety, Explain how managers build employees safety awareness, Give examples of how management participates in safety meetings, inspections, reviews and accident investigations,

Explain how managers hold staff accountable for achievement of safety targets and performance, Explain how performance appraisals include a meaningful consideration of safety attitudes and performance, Explain how management strives for safety best-practice.

A method of rating findings must be used eg.

5 Excellence recognised externally and internally.

4 The commitment of all personnel is demonstrated by behaviour, the approach is seen as a way of life.

3 Progress audited and review systems implemented, improvements planned and commenced, all supervisors commitment demonstrated by behaviour.

2 Actions well established, deficiencies identified, managers commitment demonstrated by behaviour.

1 Defined actions commenced, communications with all employees commenced, roles and responsibilities defined.

0 Some actions commenced, policy objectives defined

Need an opening meeting with stakeholders, including senior management. The auditing process must be explained.

Need a closing meeting with stakeholders, including senior management to discuss findings and allow rebuttal. Some organisations like to have all supervisors and health & safety representatives at this meeting.

Need a written report with a concise management summary. There should be no surprises in the written report as major findings have been discussed at the closing meeting. The written report should provide suggestions for addressing non-conformances and a suggested timetable for implementation.

A physical inspection of the workplace will identify safety system deficiencies.

Need to examine the safety “paper trail”. Safety committee meetings and follow-up actions, safety meeting minutes and follow-up actions, personal damage occurrence (“accident”) investigation reports and follow-up actions, safety inspections and follow-up actions, safety audits and follow-up actions, safety induction records, general safety training records and so on.

Need to question managers, supervisors and workers about their perception of the Safety Management System. Tri-Safe has a good set of questions that can be tailored to an organisation. It may be deemed appropriate to develop a questionnaire to be put to a cross-section of managers, supervisors and workers at meetings.

If you give a low rating from the audit be prepared for criticism and “push-back” from the site that was audited. No one likes to be told they are doing a poor job. It is essential that the guidelines to implement whatever standard you are auditing against are well publicised and agreed to beforehand as well as the auditing process agreed to. You need to have solid evidence to back up your assertions. If an organisation has a history of superficial safety audits they could be less than impressed by a change to a more searching audit format and subsequent lower ratings.

Be prepared for people to lie to you. Be prepared for people to genuinely think an issue was addressed when it was not. Ask for solid evidence to back up people’s assertions.

## 15. Critical Incident Recall

Critical incidents (near misses) occur regularly in organisations but are not routinely reported for a number of quite valid reasons. Critical incidents must be surfaced through an organised process. Critical incident interviewers and observers must be trained and they should spend some time in the organisation identifying critical incidents. Exploring why critical incidents occur will provide significant insight to guide the safety management system (Refer to the paper “Practical Application of the Critical Incident Recall Process” by this author

## 16. Emergency Response Plans

Despite our best efforts it is possible that personal damage occurrences (accidents/incidents) will occur. It is essential to have plans to manage specific incidents. Incidents that require emergency response plans include

- Injury
- Fire
- Explosion
- Bomb threat
- Electrical outage
- Oil/fuel/chemical spill
- Gas leak
- Earth wall failure
- Radiation emergency
- Natural disaster
- Missing person

Emergency response plans should include provisions for Critical Incident Stress Debriefing. The plans should be regularly practiced and audited.

## 17. Safety Learning

Every task that needs to be done by people must be done

- Safely
- Effectively
- At the right cost
- At the right quality
- In the right quantity

With appropriate consideration for people, for the community and for the Environment  
(Competency-Based Learning)

Detailed task analysis must take place to recognise the safety competencies required to perform all tasks (including supervisory) where gaps exist between required competencies and current competencies appropriate training may be the most appropriate solution. After people attend learning exercises the supervisor should develop a plan, in association with the trainee to implement the lessons learnt.

## 18. Quality Assurance

Utilise the advantages of a Quality Assurance approach to OHS without succumbing to the blind unthinking devotion to the Quality movement that is evident with some Quality Assurance practitioners. Quality Assurance can add some rigor to a safety management system provided it is not over-done

## 19. Behavior -based Safety Programs

This is a relatively new technique in Australia, but may be a useful addition to the range of OHS "tools". Caution is urged with the use of these techniques in isolation, they are but one tool and cannot be seen as the one and only answer to an organisations safety problems. Behaviour based programs are most effective when used in conjunction with engineering solutions. Colleagues in BHP report considerable success with Dupont behavior-based programs.

## 20. Group Approaches

There are ranges of group approaches that can successfully be used in improving safety. Well led, motivated and well researched groups can have tremendous synergy that will enhance your safety management system. The force-field analysis technique is particularly appropriate to use when commencing an OHS change project.

## 21. Safety Procedures

The commonest mistake the author has seen with safety management systems is the development of extensive safety procedures that the workers do not know about, care about or use. The procedures sit on the supervisor's bookcase or a computer program and are rarely referred to. The job safety analysis technique must be used to develop safe working procedures and involvement of the workforce is crucial. If your safe working procedures are over 2 pages in length worry about whether they will ever be used. Use flow-charts, pictures and diagrams in your safe working procedures and base them on a very basic level of English. The K.I.S.S. principles applies..

## 22. Commercial Safety Management Systems

There are a number of home-grown and international safety management systems commercially available in Australia and these can have an impact on your safety management system BUT you must be conscious of the need to specifically tailor these programs to your organisation's specific identified needs

# COMMUNICATION

- Nothing is more central to an organisations effectiveness than its ability to transmit accurate, relevant, and understandable information among its members.



## 23. Communications

From the author's studies of Management of Organisational Change he adopts a communications and management philosophy that "People Support What They Create"

While with B.H.P. the author worked with Professor T.J. Larkin of Harvard University analysing safety communications in the company. There were 3 main messages to come out of this research-  
Use face-to-face communications,

Use the supervisor to communicate and

Frame messages relevant to the immediate work area.

With written communications the author aims to be succinct, have an appropriate structure and utilise management summaries with major reports. He uses photographs, diagrams, flow-charts etc. to illustrate main points. Important written communications must always be followed up by a face-

to-face meeting. The BHP guideline for general correspondence is that if it takes more than 2 pages to write it is too much for busy people to write and read. The world of safety is famous for well-meaning, ponderous, glossy publications that no one really knows about, cares about or uses. Safety communications are also famous for the use of “weasel-words”. “Weasel-words” promise a lot but deliver little.

Action and Experiential learning models must be used for communicating learning as opposed to lecture style presentations.

Professor T.J. Larkin says “If it is not face-to-face it is not communication”.

#### 24. Building Trust

Introducing OHS change inevitably upsets the established order in organizations and forces people to question their existing role in the organization. Often people will be asked to do something that is different from the norm and to do that which they do not agree with. Persons introducing and leading OHS change must ensure they are trusted by those they are seeking to join them in the OHS change journey. Appropriate self-disclosure is an excellent technique for building relationships.

#### 25. Fleet safety programs

Organisations such as Qld University of Technology are developing state of the art fleet safety programs that may be of interest to fleet owners.

#### 26. Well-Being programs

With an increasing realization of the importance of employee health to productivity many organisations are introducing Employee Wellness Programs. Many aspects of these programs have an excellent return from investment for the employer. The employer has to be careful where he invests his resources eg subsidized gym membership may be very popular with those who already go to a gym but may not encourage many new people to attend a gym. Lifestyle education programs appear to be beneficial.

#### 27. Contractor safety programs

Australian business is out-sourcing more and more work. Contractors must develop and submit detailed Safety Management Plans including details on how they are going to carry out their work safely as part of the tendering process. This information must be pre-qualified as part of letting tenders. A contractors safety handbook and induction training program may be required.

#### 28. OHS Policy

A dynamic policy statement that is freely distributed throughout the organisation, actually known by employees and actually referred to when making decisions about safety is required. What the policy says will happen must happen in the real world or cynicism will reign supreme. Traditional safety policies may be better replaced with statements of beliefs or values about safety that can be used as a basis of decision-making.

#### 29. Role of the safety professional

Shortsighted companies think they employ safety people and these people will look after safety. The more progressive companies often do not have many dedicated OHS personnel, management and supervisors are so well trained and effective in safety that few dedicated safety personnel are required. Safety personnel should report to the senior officer so the function has some chance of being perceived as being of importance. The danger when you have too many safety people is that line management gets the safety people to manage safety not themselves. Safety is a line management function and safety personnel should be seen as specialist adviser

### 30. Focus on Class 1 Damage

A method of classifying personal damage that seems appropriate is the following-

CLASS 1-Damage that permanently alters a persons life e.g. death, paraplegia, amputation of a leg, severe psychological damage.

CLASS 2- Damage that temporarily alters a person's life e.g. fractured leg that repairs with no lasting impediment, deep laceration that has no underlying tissue damage and repairs without significant scarring

CLASS 3 inconveniences a person's life(Geoff McDonald)

The report of the Industry Commission 1995 indicates that safety in Australia is fundamentally a class 1 problem (87% of occurrences were class 2 with 18% of cost, 13% of occurrences were class 1 with 82% of cost. Most safety management systems in Australian industry focus on lost time accidents within the organisation. Better returns for effort will be gained by focusing on Class 1 damage in the companies industry or Australia-wide. We must lobby for government to improve methods of collecting, disseminating and analysing personal damage occurrence (accident) data. Collection of personal damage occurrence (accident) data on an industry-wide basis is essential. Taxonomies of industry personal damage occurrences will be of value in managing Class 1 personal damage.

### 31. Benchmarking

In a previous position the author was involved in implementing the findings of an international benchmarking exercise with 25 "best in safety class" companies throughout the world. Such studies, well organised and researched, can provide significant insight into how to improve your safety management system. In Australia it is suggested benchmarking with major chemical, petro-chemical, mining and aviation companies will receive the best return. The BHP Benchmarking study mentioned previously illustrates the important role of senior management in the safety management system. The National Occupational Health & Safety Commission has an interesting paper on Safety Benchmarking on their web-site.

## LEADERSHIP

- Failures in leadership are invariably failures in CHARACTER rather than Competence
- General Norman Schwarzkopf



### 32. Leadership

Excellent safety management systems demand excellent safety leadership.(Refer to the "OHS Leadership" paper by this author)

Safety management often requires unpopular decisions by leaders, do not shrink from demanding high safety standards from all those around you, take positive action with those who do not meet expectations.

Krause describes what excellent safety leadership looks like

***Vision***

The most senior executive must “ see” what safety excellence looks like. The leader must convey his vision in a compelling manner through action.

***Credibility***

When an excellent safety leader says something others believe it and do not question his motives.

***Collaboration***

Collaboration encompasses working well with others, encouraging input, helping others, expressing confidence in others support others decisions and gaining commitment.

***Feedback & Recognition***

An excellent safety leader provides effective feedback and recognises people for their accomplishments.

***Accountability***

An excellent safety leader gives workers a fair appraisal of safety efforts and results, clearly communicates people’s roles in safety and fosters the sense that people are responsible for the level of safety in their organisational unit.

***Communication***

As a great communicator the leader encourages people to deliver honest, complete information about safety (even if unfavourable) ,keeps people informed and communicates frequently and effectively up, down and across the organisation.

***Values safety***

An excellent safety leader acts to support safety values and principles. He leads by example and clearly communicates that safe behaviour is expected.

***Action-oriented***

An excellent safety leader is proactive rather than reactive in addressing safety issues. He gives timely, considered responses to safety concerns, demonstrates a sense of personal energy and urgency to achieve safety results and demonstrates a performance driven focus by delivering results with speed and excellence.

33. Claims Management

Speedy and efficient claims processing and review of claims experience is important as is timely injury management. Rehabilitation programs can significantly reduce the period employees are on workers compensation. Early intervention, good communications between relevant parties, accurate functional capacity assessment, sensitive case management and a willingness to identify meaningful alternate duties seem to be the keys to success with rehabilitation.

34. Employee Assistance Programmes (EAP)

Employees bring a whole range of problems to work that impact significantly on their ability to work safely & efficiently. EAP’s have proven their worth in many companies. It is suggested safety personnel and human resource management personnel have basic skills in counseling, in particular the skills of reflective listening are very appropriate.

35. Engineering Change

The author’s experience in Occupational Health and Safety has lead him to believe the engineering approach was not used enough in the companies he worked for, there are so many cases where making positive engineering changes (putting a non-slip coating on a smooth steel-trowelled concrete walkway) are so much more reliable than truck loads of exhorting people to be careful

(walk slowly on that concrete when it is wet from rain) The good thing about engineering controls is they do not come to work tired, sick, hungover, drunk, stoned, physically and mentally unsuited to their work, unmotivated, distracted by personal problems, untrained or for some other reason not really thinking.

Both the engineering and behavioral approaches have their strengths and weaknesses, the wise manager uses the strengths of each without succumbing to the weaknesses. Keep in your mind the aim of our safety efforts is positive change for the future.

### 36. Management of Low Probability/High Consequence Risk

How often have we heard in regard to a high consequence risk “We have been doing it that way for 20 years and not had a problem” Disasters like the Moura explosion and the Longford disaster prove that plans must be put in place to manage low probability/high consequence risks. Focus groups experienced in operation of these risks will provide significant insight into management of these risks. Formal risk management approaches as outlined in the paper “The Hazard Management Process” by this author are essential. The December 2001 issue of “Safety in Australia” contains useful advice on managing this type of risk.

Steps required include-

- Identify the hazards in discrete business activities
- Assess risk using probability & consequence
- Develop controls for pre-event, continuing and post-event (9 box model)
- Identify the person responsible for making the control happens
- Identify competencies for the person who makes the control happen
- Establish triggers in management of hazards
- Send Hazard Management Plans out for validation
- Develop OHS Standards and Procedures

<b>9BOX MODEL</b>	<b>P Prevention</b>	<b>Monitoring</b>	<b>Contingency</b>
Eqpt, / Engineering			
Procedures			
Skills/Competencies			

The 9 box model says for the control of major hazards you must have equipment./engineering controls, safe working procedures and the appropriate skills / competencies. There must be prevention controls, controls to monitor the effectiveness of the prevention controls and contingency controls if the main controls are not effective. The aim is to fill the whole 9 boxes with as many controls as possible.

Organisations with Major Hazard Facilities bring a new dimension to management of OHS.

### 37 Zero Harm

Zero Harm is best introduced by a set of principles designed to achieve this objective eg.

The safety of our people is a value that is not compromised

Safety excellence is recognized as good business

Leaders at all levels are safety role models

Effective safety leadership is a pre-requisite for promotion

People are aware of the hazards and risks of their employment and act accordingly

Compliance with safety standards and procedures is absolute

At risk behaviors are not acceptable and are addressed when observed(Source-BHP Billiton)

### 38 Safety Incentives

Heresy and rumor says safety incentive schemes based on accident experience work. Despite wide reading on this topic the author has identified no robust empirical studies that prove this assertion (there is no shortage of emotional reports, with a poor statistical basis that indicate incentives work.) Public recognition from the boss for a job well done will always be appropriate. A recognition scheme that involves the good safety things that are being done is more appropriate than basing safety awards on accident statistics.

### 39 Terminology

Probably the best example of a lack of scientific discipline in OHS lies in the terminology “accident”

The term “accident” implies carelessness (whatever that means), lack of ability to control its causation, an inability to foresee and prevent and a personal failure. How can we make meaningful progress on a major cost to Australian industry if we persist with such, sloppy, unscientific terminology? The term “accident” affects how the general population perceives damaging occurrences and the people who suffer the personal damage, inferring the event is “an act of god” or similar event beyond the control and understanding of mere mortals. (Geoff McDonald)

The term “accident” is best replaced by the term “personal damage occurrence”. Instead of talking about “permanent disability” we should be talking about “life-altering personal damage”

There is a poor understanding in the community of the reasons why personal damage occurs. We are quick to make the assumption that the worker was careless, when one examines personal damage carefully one will also identify a range of work system factors that contributed to the personal damage as well. Most of these work system factors are the responsibility of the employer at both common and statute law. Blaming workers for their careless behavior is an emotionally appealing approach that is usually not all that productive in the bigger picture of preventing personal damage at work

People talk about “accident” “causes” (another emotionally laden term) Investigating personal damage occurrences thoroughly will reveal at least 30 “essential factors” (an essential factor is one without which the final personal damage could not have occurred)

### 40 Complexity

Many organizations have safety standards, special emphasis programs, policy and safe working procedures that are very thorough and detailed. Unfortunately in the quest for thoroughness the number of words becomes immense and difficult to decipher. It ends up being an immense task for even the most dedicated to wade their way through the paperwork There is room for succinct summaries of major approaches. OHS professionals should not be judged by the number of words they create.

### 41 Lost Time Injury Frequency Rate

The Lost Time Injury Frequency Rate impedes progress in safety

The Lost Time Injury Frequency Rate is the principal measure of safety performance in many companies in Australia. The definition of L.T.I.F.R. is the number of Lost Time Injuries multiplied by 1 million divided by the number of manhours worked in the reporting period

A Lost Time Injury is a work injury or disease where the injured party has at least 1 complete day or shift off work. Note that a fatality and a cut where a person has 1 complete day off work count the same in Lost Time Injury terms.

The following are my reasons why the L.T.I.F.R. impedes progress in safety.

The L.T.I.F.R. is subject to manipulation

Some safety people cheat like hell with their L.T.I.F.R. statistics encouraged by managers with an eye to keep their key performance indicators looking good. The more the pressure to keep K.P.I.'s looking good the more creative the accounting. If the same ingenuity was displayed in preventing incidents as is displayed in cooking the books we would be in great shape. All this makes inter-company comparisons of L.T.I.F.R. statistics less in value.

I am reminded of one mine I used to deal with who drove L.T.I.F.R. down so they won the inter-mine (out of 7 mines) safety award yet had significantly higher workers compensation costs per employee and a number of compensation days off cases that never made it onto the L.T.I.F.R. statistics (the vagueness of the Australian Standard for Recording and Measuring Work Injury Experience was exploited, very easy to do, particularly for back injuries).

Then there was the mine that won a prestigious Queensland government mining industry safety award and a taxi full of "walking wounded" turned up just as the award for no lost time injuries for the year was being presented. The award was subsequently withdrawn.

Ponderous deliberations

Safety people spend inordinate periods of time obtaining rulings on what to count and how to count it from bodies such as the Australian Standards Association. Often answers obtained are imprecise and the decisions are left to personal opinion. One is reminded of a sporting analogy where it is more important to play the game than keep the score.

Measuring failure

Most measures in management are of achievements rather than failures such as the number of Lost Time Accidents. There is a ground swell in the safety movement talking about Positive Performance Measures in safety (refer to the National Occupational Health & Safety Commission and the Minerals Council of Australia web-sites for a discussion on this topic) It is relatively simple to develop measures of what you are doing right in safety as opposed to using outcome measures such as L.T.I.F.R. Positive performance measures can be used to gauge the success of your safety actions.

Great L.T.I.F.R., pity about the fatalities

I have personal experience with a company that aggressively drove down L.T.I.F.R. to a fraction of its original rate in a space of about 2 years yet killed 11 people in one incident.

The Lost Time Injury Frequency Rate predominates discussions about safety performance. How can a company be proud of a decrease of L.T.I.F.R. from 60 to 10 if there have been 2 fatalities and 1 case of paraplegia amongst the lost time injuries? The L.T.I.F.R. trivialises serious personal damage and is a totally inappropriate measure of safety performance.

6 Accident Ratio Studies Mis-direct Efforts

My grandmother used to say "Look after the pence and the pounds will look after themselves" In the world of traditional safety there seems to be similar thinking that if you prevent minor damage you will automatically prevent major damage. Accident ratio studies (insisting on set ratios between near misses, minor accidents and serious accidents) are prominent and accepted unthinkingly. The much-quoted "Iceberg Theory" in relation to safety does not stand up to scrutiny in the real world! The "Iceberg Theory" is fine if used for statistical description but it cannot be relied upon for statistical inference. (Geoff McDonald)

The result of the "Iceberg Theory" focus is a furious effort to eliminate lost time injuries in the belief that all major incidents will be eliminated in the process. Certainly there are minor incidents that have the potential to result in more extensive damage( and we should learn from them) ,but personal experience tells me the majority of minor damage incidents do not have this potential. It is a matter of looking at the energy that was available to be exchanged in the incident. The common

cold cannot develop into cancer, similarly many minor injuries will never develop into serious personal damage.

The concept that preventing the minor incidents will automatically prevent the major ones seems to me to be fundamentally flawed.

All organisations have limited resources to devote to safety, it seems more efficient to prevent one incident resulting in paraplegia than to prevent 20 incidents where people have a couple of days off work (some will say this comment is **heresy**)

Somewhere in the push to reduce L.T.I's, reduce the L.T.I.F.R. and consequently achieve good ratings in safety programme audits the focus on serious personal damage tends to be lost.

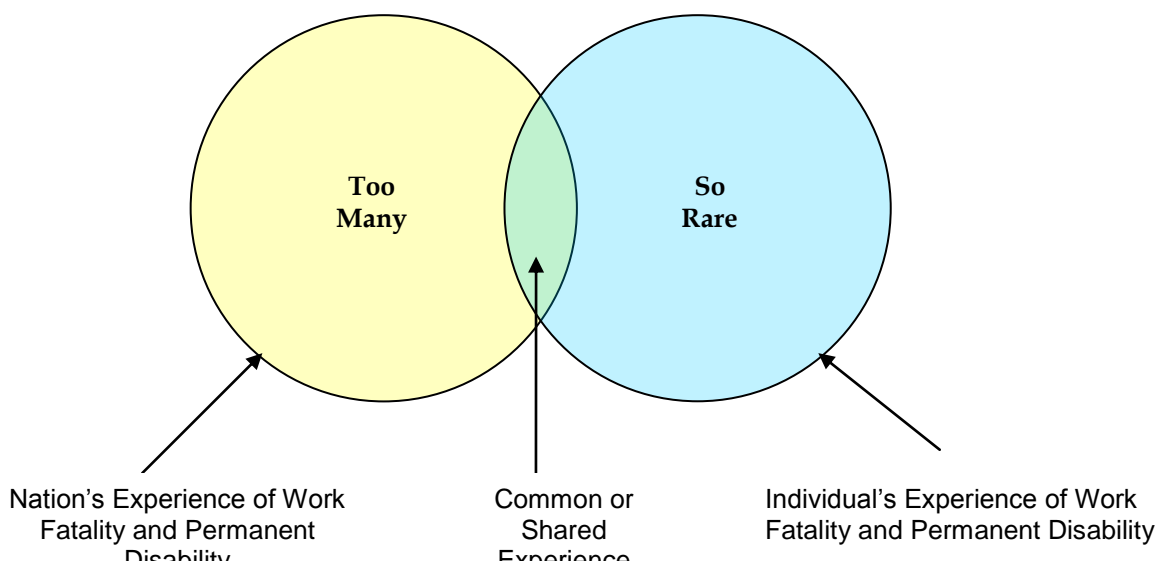
Reducing the L.T.I.F.R. is as much about introducing rehabilitation programmes and making the place an enjoyable place to work as it is about reduction of personal damage

**In my view a concentration on the Lost Time Injury Frequency Rate has hijacked the Australian safety profession for far too long.**

#### 42 The Two Mandorlas

Mandorla is the Italian word for almonds, in common usage it describes the overlapping area of two circles. In safety there are two important Mandorlas. (Geoff McDonald) One, the Paradox Mandorla, represents the situation that there are far too many fatalities and permanent disabilities but these occurrences are so rare in an individual's experience that individuals lack both the motivation to make changes and the knowledge of what changes to make.

**Figure 1 – Paradox Mandorla**

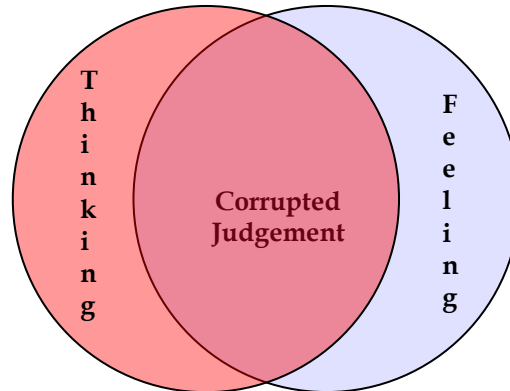


The second, the Judgement Mandorla, represents the thinking and the feeling function, both of which are used to make judgements which lead to action. The thinking function involves the linking up of ideas by means of a concept and/or the use of concepts to integrate new ideas into an already linked up set (constellated, organised group) of ideas. Thinking is concerned with "truth" which is necessary if the physical energies of the world are to be controlled to avoid damaging people. The feeling function uses sub-emotional feelings via values to make judgements of the form "like or dislike", "acceptable or not acceptable", and is essentially concerned with "goodness".

Feeling corrupts Thinking (eg. by using value laden terms) and Thinking corrupts Feeling (eg. by attempting to rationalise how you feel). Inappropriate judgements come from corrupting one

function with the other, or by using the wrong function, (eg. lack of factual information with which to think will lead to a feeling judgement).

**Figure 2 – Judgement Mandorla**



At present the Paradox Mandorla is very thin and the Judgement Mandorla is very fat. For effective and efficient safety at work The Paradox Mandorla needs to be fat and the Judgement Mandorla needs to be thin.

Thinking Judgements (truth) and Feeling Judgements (goodness) are both necessary, each in their own domain.

The use of the wrong function or the simultaneous use of both corrupts judgement and renders it counter productive. The large Mandorla represents the large amount of corrupted judgement which exists at present.(Geoff McDonald & Associates)

It would be instructive to examine the progress of other disciplines such as medicine in the context of this model, eg. With real progress based on understanding disease being based on environmental and constitutional conditions rather than “goodness” or “badness”

The discussion above once again emphasises the importance on basing actions on solid damaging occurrence information. At the moment many decisions on safety are based on the feeling function because we do not have solid factual data to guide the thinking function.

#### 43 Hazard Control Model

When developing controls for hazards the common wisdom is to apply the hierarchy of controls. It is the authors experience that applying Haddon’s 10 countermeasures will yield improved results Various hazard control strategies and models have been developed by safety professionals over the years. One of the most effective but still easiest to apply is that devised by American researcher Bill Haddon

Haddon’s model for hazard control is as follows:

<b>Countermeasure 1</b>	Prevent the marshalling of the form of energy in the first place. eg. Ripping seams - instead of blasting, substitution of radiation bin level sources with ultra-sonic level detectors, using water based cleaners rather than flammable solvents.
Countermeasure 2	Reduce the amount of energy marshaled. eg. Radiation – gauge source strength, explosive store licence requirements, control number of gas cylinders in an area
Countermeasure 3	Prevent the release of the energy. eg. handrails on work stations, isolating procedures, most interlock systems
Countermeasure 4	Modifying the rate or distribution of energy when it is released. eg. slope of ramps, frangible plugs in gas bottles, seat belts.
Countermeasure 5	Separate in space or time the energy being released from the susceptible person or structure. eg. minimum heights for powerlines, divided roads, blasting fuse.
Countermeasure 6	Interpose a material barrier to stop energy or to attenuate to acceptable levels. eg. electrical insulation, personal protective equipment, machinery guards, crash barriers
Countermeasure 7	Modify the contact surface by rounding or softening to minimise damage when energy contacts susceptible body. eg. round edges on furniture, building bumper bars, padded dashboards in cars.
Countermeasure 8	Strengthen the structure living or non-living that would otherwise be damaged by the energy exchange. eg. earthquake and fire resistant buildings, weightlifting.
Countermeasure 9	To move rapidly to detect and evaluate damage and to counter its continuation and extension. eg. sprinkler systems, emergency medical care, alarm systems of many types.
Countermeasure 10	Stabilisation of damage – long term rehabilitative and repair measure. eg. clean-up procedures, spill disposal, physiotherapy

#### Note

Generally the larger the amounts of energy involved in relation to the resistance of the structures at risk, the earlier in the countermeasure sequence must the strategy be selected. In many situations where preventative measures are being considered the application of more than one countermeasure may be appropriate.

Countermeasures may be ‘passive’ in that they require no action on the part of persons, or ‘active’ in the sense that they require some action or co-operation on the part of the persons, perhaps in association with a design related countermeasure (eg. seatbelts).

*Passive' countermeasures tend to be more reliable in the long term. A short term solution to an immediate problem may require the adoption of an 'active' countermeasure eg. toolbox sessions on replacing guards over a mechanical hazard, the long term or 'passive' countermeasure might be the fitting of interlocks to the guard so that power is off when the guard is off.*

#### **Further reading**

Haddon, W 'On the escape of tigers an ecologic note – strategy options in reducing losses in energy damaged people and property' Technology Review Massachusetts Institute of Technology, 72;7, 44-53, 1970.

#### 44 Management systems

I am impressed by the I.S.O. Quality and Environment Management System Standards but would suggest A.S. 4801 Safety Management Systems is an inferior standard. Many corporate OHS Managers and operational managers have told me they have a robust Safety Management System because it complies with A.S. 4801. As far as I am concerned A.S.4801 is a minimalist approach to safety and I would hope a Safety Management System I have responsibility for far exceeds the requirements of A.S. 4801.

#### 45 Gut-feel instead of solid research

Much of the approaches to safety rely on gut-feel as to what seems good, rather than solid research. The extraordinary claims about the success of safety posters, safety newsletters, incentive schemes and behavior-based safety programs are prime examples. Solid research is necessary to establish the facts.

#### 46 Force-field analysis

This technique is particularly useful when seeking to review a Safety Management System

#### **Force-Field Analysis**

Force-field analysis(similar to S.W.O.T. analysis) is a simple, yet powerful technique, useful at the beginning of a project to define the nature of the beast you are dealing with. It is particularly useful when seeking to develop new Safety Management Systems.

A small group,6-8, stakeholders is required. Defining the scope of your deliberations is important- Put some boundaries around your discussions.

The process goes something like this-

1 Revise the brainstorming rules

#### **BRAINSTORMING RULES**

Say the first thing that pops into your mind

Do not be judgemental of your or others ideas

The wilder the idea the better the idea

Do not be constrained by convention

Think out of the square

Quantity not necessarily quality

Every person and every idea has equal worth

Build on the ideas put forward by others

Sometimes you may wish to have a fun exercise to practice the brainstorming technique to start with. One exercise I did had a number of OHS professionals one of whom ran a take-away shop as an extra business. We brainstormed how to increase the sales of fish & chips at "Buck's Greasy Spoon" (That was the name the group came up with for the take-away shop, the owner took this in his stride) One of your members may have a hobby or activity they are trying to improve and you can brainstorm how to help them improve. Main thing is light-hearted & not too serious.

2 Brainstorm an objective for the Safety Management System The objective may be zero harm, zero permanently disabling injuries, may reflect a number of positive performance measures, may include financial measures and so on. Caution is urged in using measures such as the Lost Time Injury Frequency Rate.

3 Brainstorm the promoting / facilitating forces acting towards the objective

4 Brainstorm the constraining / restraining forces acting against the objective

5 Develop an action plan to boost the facilitating / promoting forces and negate the constraining / restraining forces.

Discussion needs to be recorded on butchers paper, on a recording whiteboard or on the fly with a lap-top & data projector. One of the outcomes of the above discussion is that you will define a number of the things you are already doing in safety, in itself, not a bad thing to do.

#### 47 Get the right people

As with any aspect of management, OHS demands you have the right people. Motivated, caring and intelligent people, well led, can transform any organization. This will probably appear arrogant but I have to say many so-called OHS professionals I have worked with were idiots. Detailed procedures must be put in place to select, recruit and retain quality OHS people.

**Special note –Most of the work in this paper is the result of the author critically reflecting on a number of years of safety practice, some of the concepts expressed in this paper reflect the work of the author’s long-term adviser / mentor / coach on OHS matters, Geoff McDonald**

#### **Conclusion**

The above is quite a simple approach to OHS but detailed implementation of the above will achieve significant improvements. Listen to your people, make significant efforts to seek out their ideas on OHS, reduce the bull-dust that surrounds the safety effort, keep the lines of communication open, act upon good ideas, maintain a good sense of humor, show the troops you are fair-dinkum about safety, use the powerful influence front-line supervisors have on their employees and do not take yourself too seriously! Do not make the mistake of talking to workers about the company safety goals and mission, instead talk about the effects of safety in their immediate work environment. Do not think your safety efforts end when you have written a safe working procedure, procedural controls in isolation are notoriously ineffective.

Focus on “What is in it for me”

As a manager and a supervisor you need a personal action plan on how to manage safety and you need to regularly review progress on the action plan with a process and content expert.

Use Class 1 personal damage occurrences to guide your actions.

You cannot underestimate the power of excellent leadership in OHS.

**WHEN TALKING ABOUT SAFETY PLEASE REMEMBER THE FOLLOWING!**

# EXCELLENCE

- EXCELLENCE IS NO ACCIDENT



F.G. (George) Robotham,

Cert. IV in Workplace Training & Assessment, Dip. Frontline Mgt., Dip. Training & Assessment Systems, B. Ed. (Adult & Workplace Ed.) Grad. Cert. Management of Org. Change, Grad. Dip. Occupational Hazard Mgt.

C.F.S.I.A., M.A.S.S.E., C.A.H.R.I, M.A.I.T.D., Registered Safety Professional (Australia), J.P. (Qual.), Australian Defence Medal

George can be contacted on [fgrobotham@gmail.com](mailto:fgrobotham@gmail.com), he welcomes debate on the above (it would be indeed a boring world if everybody agreed with George)