

54<sup>th</sup> Canadian Chemical Engineering  
**CONFERENCE**  
**Calgary – October 2004**

**Subject: “Methods to Improve Safety and Risk Management Practices and Programs”**

**This topic can apply to both ‘in house’ and consultant personnel. We are often asked to review and improve a company, department or groups’ safety and risk management practices and programs. This request usually comes from senior management after a serious downgrading event has recently occurred. This could include harm to people, environment, assets and production or each one singly. This request is not for the investigation of the incident itself, but a thorough review, with recommendations on how to improve future results.**

**There are some pitfalls for the unwary reviewer/consultant. However, there are some effective methods to improve safety and risk management practices. Some successful programs have produced long term and first class results.**

**This paper will detail ways on how to avoid the above pitfalls and practical methods to provide long lasting first class results for the improved program.**

**(Paper Presentation Tuesday, October 5, 2004 – 11:15 AM)**

**Industrial Prof. Laird Wilson, P. Eng.  
and  
Ron L. Holland – Business Professional**

This is an overview that will lend insight to our background and to the professional services we are able provide. It helps to answer such questions as:

- **Who are we?**
- **What do we do?**
- **How do we operate?**

Laird Wilson, P. Eng., is Adjunct Industrial Professor at the University of Alberta. He was the Program Director for the Industrial Safety and Loss Management Program, which he founded in 1987. Laird has been in industry for over thirty years and has consulted around the world. He is the principal author of a landmark book entitled "Industrial Safety and Risk Management". [ University of Alberta Press - 2003]  
[ See Resume` for additional details]

Ronald L. Holland has over twenty-five years experience in human resource dynamics and risk management work. 'Ron' has consulted in the areas of Fault-tree Analysis and Risk Assessment for a wide clientele, local and international.  
[ See Resume` for additional details]

This well experienced partnership has peer-group liaisons with other experts and accredited organizations to assist it, as is appropriate, to the diverse Industrial Safety and Risk Management needs and wants of our clients.





We bring an 'integrated approach' to all aspects of the Industrial Safety and Risk Management process. We do our work in an experienced manner; at all levels. We are able to deliver first-class results that are timely, practical and cost effective.



# ***industrial safety & Risk management***

***This is defined as the integrated approach to the Management of the continuous reduction of risk to People, Environment, Assets, and Production in the industrial setting. Those who benefit from this risk reduction are company personnel, associated contractors, and the public at large.***

*File:Wilson DefinitionPEAP*

<b><i>Loss management</i></b>		( Courtesy ISLMP )
	people	Occupational Health Injury
	environment	Air, Water, Land Working
	assets	Hardware “ Software ”
	production	Sporadic Interruptions Chronic Interru

For:

- ✓ Company Personnel
- ✓ Contractors/Subcontractors

✓ Public at large



## Typical Integrated Safety and Risk Management Framework ...

### The 12 Elements of the Framework

1. Management leadership, commitment, and accountability
2. Continuous improvement to safety and loss management culture; including due diligence
3. Risk assessment and risk management
4. Personnel – behavioral observation, training, stewardship , including voluntary compliance
5. Facilities design, construction, and startup
6. Process and facility data and documentation
7. Operations and maintenance methods and performance
8. Management of change
9. Contractor relationships and stewardship
10. Incident investigation, analysis and applied lessons
11. Community awareness and emergency preparedness
12. Pace and dedication to continuous improvement

*( Courtesy of ISLMP )*

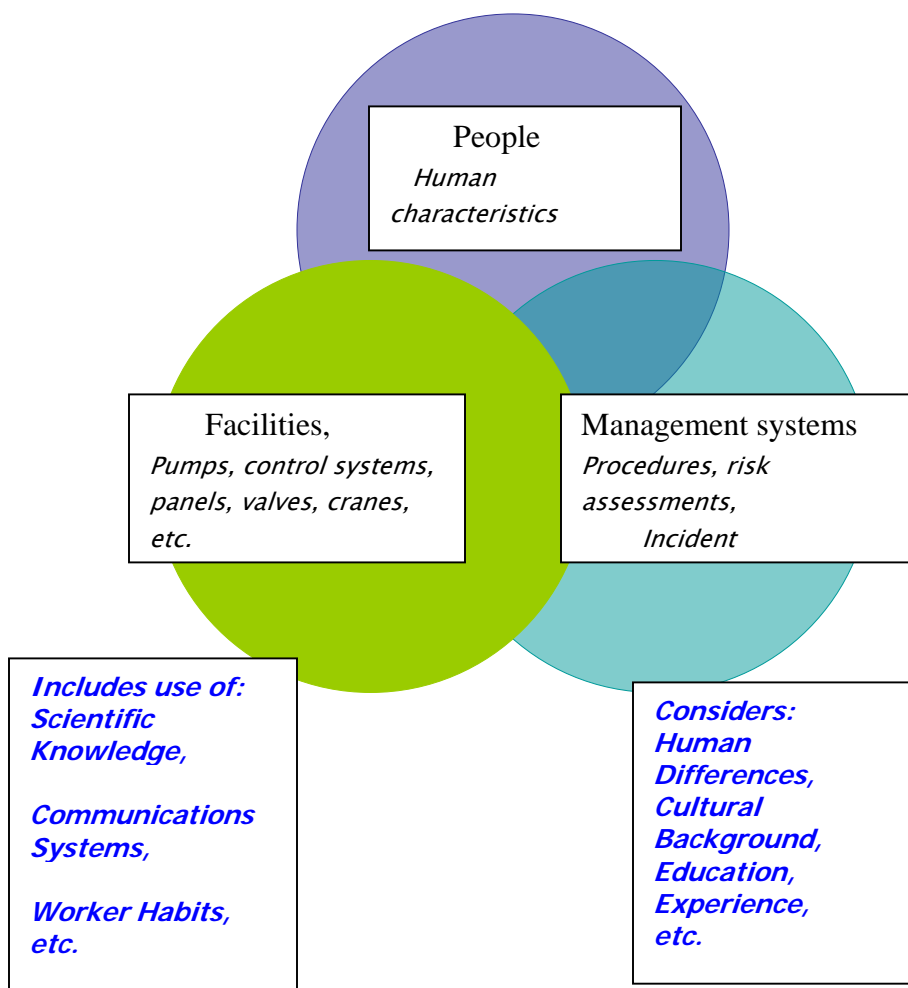


## ***BEST OF INDUSTRY PRACTICES IN CREATION AND CONTINUOUS IMPROVEMENT OF SAFETY AND LOSS MANAGEMENT CULTURE***

- ***Recognition and practice of the integrated approach to Safety and Loss Management – People, Environment, Assets and Production***
- ***Consistency of leadership and Demonstration by Example – practices more important than program***
- ***Inclusion of all employees in the program/practices with active stewardship and appraisal system***
- ***Capitalize on existing strengths within the organization with continuous building of frameworks/programs – Avoid completely new “flavour of the year” approaches***
- ***Risk Assessment on changes in organization, procedures, practices, facilities, etc. – Risk mitigation and acceptance levels***
- ***Continuous emphasis on the proactive approach***
- ***Safety and Loss Management must be integrated into all company activities and work, at all levels of responsibility***
- ***Incident investigation, particularly near miss, with strong emphasis on voluntary reporting and compliance***
- ***Treatment of contractors/ sub contractors as example to own employees – valuable source of objective “views”***
- ***Commitment to Action Plans Stewardship***
- ***Overall organization dedication and positive climate is key to first class results***

(Courtesy ISLMP)

## *Human Factors Model*

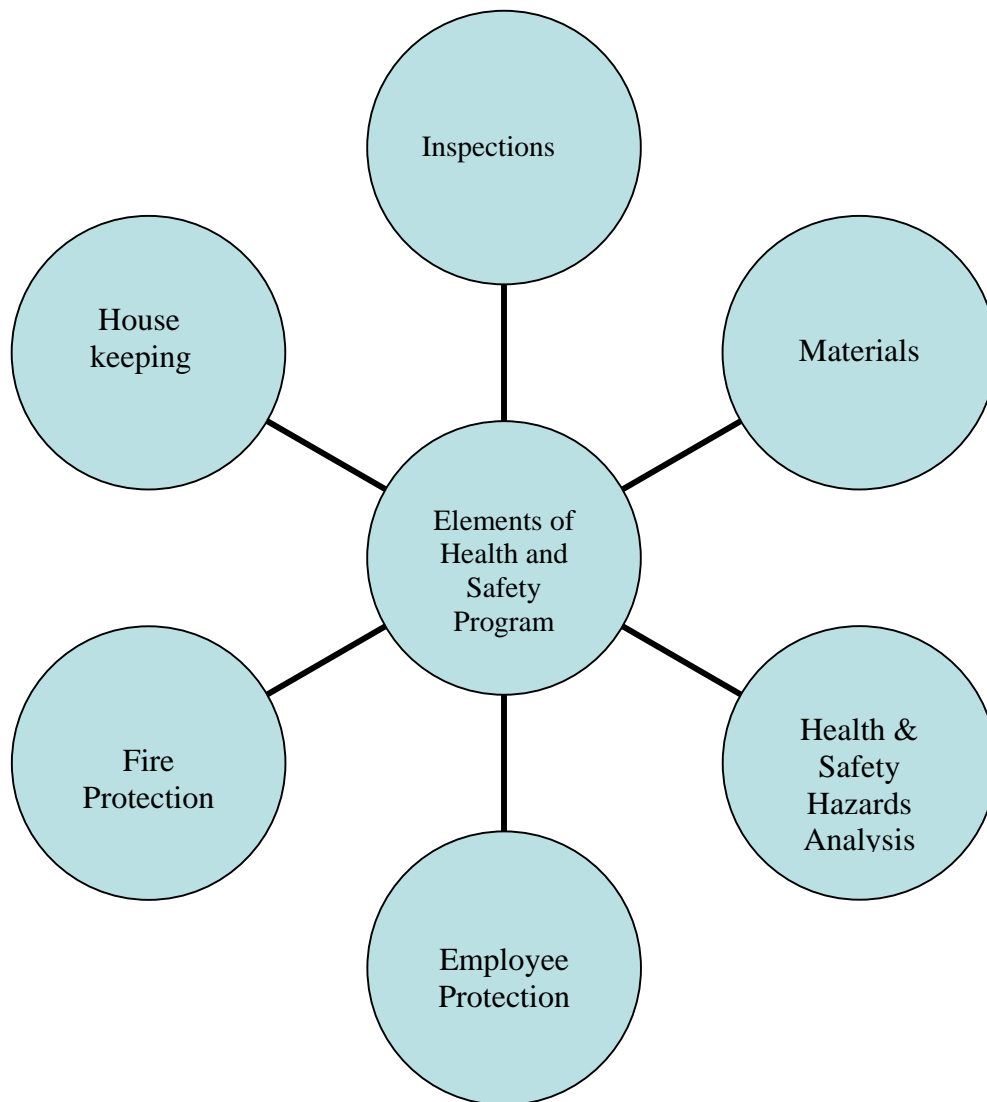


*“ In human factors it is important that management set the right*

*atmosphere and continually provide a positive influence on it'.( 'Industrial Safety and Risk Management'- Wilson and McCutcheon - pp71 )*

*- Credit to Daneve Mc Affer*

### ***Small Company Program Elements***





### *Worker Accountability*

### *Its Dimension and Impact:*

In every facet of the workplace there is direct correlation between “worker accountability” and Safety/Risk Management.

Is dependent upon personal willingness to accept responsibility.

The parameters of accountability must be carefully defined, properly communicated and appropriately understood.

All levels; from the ‘top-dog’, to the ‘newest hire’, are part of this important equation.

Managers/Supervisors and Contractors share the leadership responsibility to ensure that everyone is appropriately accountable.

Today, owners, managers, contractors, and every employee can be held accountable to policy, statute, regulation and rules relative to working safely and minimizing risk. (Individually and collectively. Jointly and severally.)

True accountability respects an “integrated approach”.

Continuous Improvement and the Pursuit of Excellence is seldom achieved in an organization that lacks an effective ‘chain of command’ or the essential elements of accountability at all levels.



Workplaces with a 'best of industry' history, that includes a stable safety/risk management track-record, utilize an integrated and a long-term approach to achieve consistent and measurable results.

Voluntary Compliance makes individual and/or collective accountability more effective because it fosters safety and lowers risks for all stakeholders.

First-class accountability is built on trust and deep commitment to:  
**(People, Environment, Assets, Production )** PEAP



Personal **Strengths/Weakness** that effect Safety/Risk Management ...

- Positive Attitudes/Actions/Compliance
- Mental Maturity relative to ISRM initiatives
- Strong 'Personal Integrity/Ethics Status' ( PIES )
- High 'Personal Cooperation Quotient' ( PCQ )
- Respect for People, Environment, Assets, Production ( PEAP )
- Appropriate and Stable Behavioral Patterns
- Satisfactory Physical/Emotional Fitness Profile
- Pace, Dedication and Consistency - Reliability
- Trusted and Dependable
  
- ✓ Negative Attitudes/Actions/Non-compliance
- ✓ Emotional Instability/Immaturity relative to ISMR initiatives
- ✓ Inappropriate Personal Habits/Traits
- ✓ Unstable Behavioral Patterns/Actions
- ✓ Low Regard for People, Environment, Assets, Production

- ✓ Chronic Substance Abuse/Addiction
- ✓ Lack of Personal Principles
- ✓ Frequent Absenteeism
- ✓ Inconsistent Performance – Unreliability

In matters of Safety/Risk Management, it is imperative that we ‘accentuate the positive and eliminate the negative’ if we want to achieve ‘Best of Industry’ status.

® Ron L. Holland



### Adaptability to Change



In matters of Safety/Risk Management (SRM) just how we are ‘able to cope with change’ (anticipated or unexpected) can have bench-mark impact upon the continuing results and down-stream consequence. It is important to understand that ‘plowing new ground’, or improving present furrows of endeavor, is largely dependant upon the ‘latitude of one’s attitude’. It is not always easy to move from present and familiar conditions to untried territory. Succinctly stated, ”your feet are slow to go where your head has not already traveled”.

Generally speaking, there is a reluctance to leave the ‘status quo’. There is also a learning curve associated with change. It takes determined effort to ensure one does not falter in mid-stream as we pursue changes in self, or in systems. Some are faster learners than are others. Often, we must cultivate the ability to adapt to the variable circumstances that are encountered in the process of ‘change’. Patience in self and in others can help to make it happen more smoothly. Being able to ‘*bend with the wind*’ can make a significant difference as we acclimatize to new conditions and priorities. Being too bogged down in the ‘rigid ruts of traditional protocol’ can sometimes jeopardize safety and the appropriate management of risk. When we are asked about how we got into such a dilemma we often rationalize the situation by lamely saying, ‘we’ve always done it this way’. Finding ‘our own best way’ through the maze of change is done more effectively by means of an over-arching strategy that includes “team-concept” and insightful stewardship. In other words, ‘we seldom successfully face the change experience alone’

Constructive change is forged in the crucible of creative thinking, thorough planning and prudent implementation. In this regard the PIERR principle is robustly viable ... **Plan, Implement, Evaluate, Revise/Recycle**. It is valuable to recognize that “the change process is never cast in stone”.

The willingness and capacity to conceive fresh ideas and to harness innovative concepts is vital in adapting one's thinking and action[s] to working more safely and the reduction of risk[s]. In a rapidly changing world this complex scenario for meaningful change is made even more formidable! At the same time it is crucial to overall progress. Common sense strongly suggests we must be attentive to the reality that any change initiative must include 'the integrated approach to industrial safety and risk management'. If we ignore, or omit, any of the elements of a first-class SRM program we can easily 'throw the baby out with the bath-water'. Long-term safety, risk management and health objectives that are achievable are vital to continuous improvement and must be securely in place. Positive change can do much to minimize incident/accident and reduce risks to people, environment, assets and production (PEAP).



***Program Implementation  
and Performance***

***Incidents Include Damage to:***



***People***



***Environment***



***Assets***

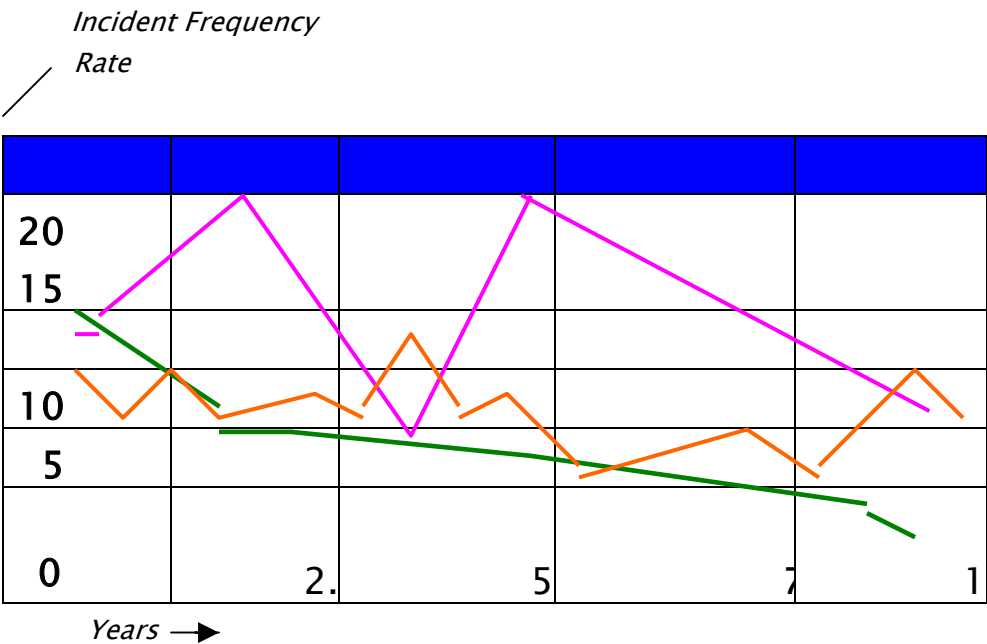


***Production***

***Typical Sinusoidal***

***Erratic Sinusoidal***

**Improvement**



(Courtesy ISLMP)

**Topic: Method for investigating Strengths/Improvement Areas in Safety and Risk Management through “The Integrated Approach”®**

**Safety and Risk Management Related To:**



**MANAGEMENT** Systems, Organization, Commitment, Direction Communication, etc.

**EMPLOYEE** Development, Placement, Training, Responsibilities, Commitment Direction etc.

**PRACTICES**, Procedures, Job Activities, Regulations, including investigations of incidents and applying the lessons learned, and so forth

To evaluate, improve and strengthen, overall Safety/Risk Management systems/performance, so that the risk to people, environment, assets and production (PEAP) will be alleviated or minimized to the greatest degree possible.

**EMERGENCY**, Preparedness, Simulations,  
Safety Support Systems, Protective  
Equipment

**FACILITIES**, Permanent & Temporary  
Constructions with emphasis on People

- In order to build an effective safety and risk management entity the above Categories/branches have been identified as key elements in the process
- Strengths Tree
- Improvement Tree
- The Safety and Risk Management System is only as good as its weakest link



## Working Safe, Sane and Smart ...

- ✓ Accent Positive Practice & Performance
- ✓ Be aware of the pitfalls of short-term improvement
- ✓ Think Long-Term ... NO 'flavor of month' tactics

- ✓ Gain insight/input from all levels of the organization
- ✓ Build upon existing strengths ... they are there!
- ✓ Avoid the tendency to 're-act' ... Pro-activity pays !
- ✓ Know that we are "on your side" to help; not hinder
- ✓ Don't "throw the baby out with the bath-water"
- ✓ Understand that "one size does NOT fit all" ...
- ✓ Plan, Implement, Evaluate, Revise, Re-cycle PIERR
- ✓ (Utilize essential elements as outlined in :
  1. Existing in-house Safety and Risk Management efforts ... don't "re-invent the wheel"
  2. Government Legislation, Regulations and Policy
  3. Consult "Industrial Safety & Risk Management", Laird Wilson, Doug McCutcheon, University Alberta Press



### **Key Points for Consideration:**

- **Don't under-estimate the pitfall of short-term improvement. It may come back to "bite you"**
- **Keep focused and vigilant on the "bigger picture"**
- **Seek to build/obtain a 'cross-sectional view' of the overall issues**
- **Avoid 'flavor of the month' Industrial Safety and Risk Management approaches/systems**

- **Choose courses of action that have substance and genuine staying power that is relevant**
- **Don't over-react to the latest incidents/near miss scenarios**
- **Refrain from any semblance of 'witch-hunt inquisition'**
- **Obtain/review ISRM data and on-site history – “accentuate the positive” – start with strengths and strive to reduce weakness, errors and omissions in an orderly fashion**
- **No reactive or 'fly-by-night' interview tactics. Keep things simple and straightforward**
- **Review the current ISRM practices and be careful NOT to 'throw the baby out with the bath water'**
- **Help all the stakeholders to realize the initiative is not an inquisition; but rather a are non-threatening and integrated part of a team building process.**