

Safety Management Systems: Pitfalls & Lessons Dr Geoff Dell

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SMS: THE REAL FINANCIAL BENEFIT

MUARC, WIM, Ord Minnett - Top 53 Safety System Validated Stocks



Source: Larsson, Mather and Dell (2007), "To Influence Corporate OH&S performance through the financial market", International Journal of Risk Assessment and Management Vol 7, No. 2 pp263-271

Improvements in Safety Performance



Source: Hudson P. (2010), "Rethinking Safety: It's not Rocket Science, It's Much Harder", 2010 Wigglesworth Memorial Lecture, Safety Institute of Australia College of Fellows, Melbourne



SOME SYSTEMS FAIL SPECTACULARLY

1983	HLOBANE COLLIERY ¹	4 STARS	68 Dead
1986	KINROSS MINE ¹	5 STARS	177 Dead
1993	MIDDELBULT COLLIERY ¹	5 STARS	53 Dead
2006	SAGO MINE ²	Ind. Cert'd	12 Dead
2006	TEXAS CITY REFINERY²	Ind. Cert'd	15 Dead

From:

¹Leon (1995) Commission of Inquiry into Safety and Health in the Mining Industry, Report to the President of South Africa, Braamfontein

²Wikpedia (2010), Texas City Refinery Explosion, http://en.wikipedia.org/wiki/Texas_City_Refinery_ explosion & Sago Mine Disaster, http://en.wikipedia.org/wiki/Sago_Mine_disaster

Pitfall 1: Denial

Results in:

SMS not being fully and effectively implemented and operated
Important Issues not getting on to corporate radar
Potentially High risks treated in cursory manner
Eventual embarrassing, costly and long lasting consequences





Pitfall 2: SMS Not A Panacea



Pitfall 3: SMS not focused on delivery of well known defences RISK MANAGEMENT AND THE SINKING OF THE LARGEST OFFSHORE OIL PLATFORM

March 2001

Pitfall 4: Not Everyone Having the same understanding of the SMS

COURTESY OF: PAT HUMISTON







What were the risk analysis failures?

- RA tool limitations
- Poor RA training of trainers
- Flow-on lack of trainer knowledge
- Flawed training of RA participants
- Misunderstanding of RA application
- Poor RA decisions
- Poorly controlled of catastrophic consequence hazard
- Low risk scores led to false sense of security
- RA outcomes not applied or not taken seriously
- Changed controls without revised RA
- Personnel not informed of changes in risk

Pitfall 7: POOR UNDERSTANDING OF BASE PRINCIPLES

WHAT IS RISK?

The simplest AS4360:2001 compliant definition of risk is:

RISK=CONSEQUENCEX**LIKELIHOOD**(OF AN INCIDENT OR
HARM OCCURRING)(OF AN INCIDENT OR
HARM OCCURRING)

The terms "risk" and "hazard" are NOT interchangeable

Limitations & Misuse of Risk Models

COMMON RISK MATRIX

	Consequence					
Likelihood	1	2	3	4	5	
	Insignificant	Minor	Moderate	Major	Catastrophic	
A Almost Certain						
B Likely						
C Possible						
D Unlikely						
E Rare						
				T		
Risk Level:	Low	- Mode	rate H	ligh	Extreme	

Additional controls reduce likelihood only, not both likelihood & consequence

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HAZARD = ENERGY



DINAH SHERIDAN, our "cover girl" this issue, is really pleased with her Hawkins and kindly posed for this picture specially for Silver Lining-stars in their sphere!

A HAWKINS SAVES YOUR WEALTH

HAZARD CATEGORIES:

Physical ie Noise, temp, light, radiation, etc
Chemical ie Hazard /dangerous goods, spills
Mechanical ie Plant (crush, entanglement, hit, cut)
Ergonomic ie Manual handling, OOS
Slips/trips/falls ie Falls from height / same level
Confined space ie Vessels, pits, tanks
Biological ie Hep A, HIV
Psychological ie Stress, violence
Fire / Explosion ie Gas, petrol, combustible
Electrical ie Power point, cables
Some categories may require detailed assessments

NO ENERGY = NO CAPACITY TO CAUSE HARM

Pitfall 8: People have different inherent risk acceptance traits

BIG-BOYS,COM



THE MHF SOLUTION

SAFETY CASE APPROACH



Esso Longford Safety Case material provided courtesy of Mr Allan Hollands, Former General Manager, Longford Plants, ESSO Aust Pty Ltd



SYSTEMATICALLY DEVELOPED AND VALIDATED WHOLE OF OPERATION HAZARD CONTROL DEFINITION

SIMILARITIES TO CASA SMS MODEL



AUDITING THE SMS

- IS THE SMS COMPLIANT?
- DOES THE SMS ADDRESS THE EXPECTED ISSUES?



- DOES THE SMS HAVE THE FEATURES EXPECTED?
- ARE YOU LOOKING FOR & FIXING WEAKNESSES IN YOUR OPERATION?
- ARE YOU DOING WHAT YOU SAID YOU WOULD DO?
- DO YOU BENCHMARK AGAINST "BEST PRACTICE?
- IS YOUR SMS ADEQUATELY RESOURCED?
- DOES EVERYONE IN YOUR BUSINESS UNDERSTAND YOUR SMS?

ARE YOUR SMS INFORMATION COMMUNICATION LINES OPEN AND OPERATING?





THE SYSTEMS OF SAFETY MANAGEMENT REQUIRED TO DELIVER SAFE AIRCRAFT OPERATIONS ARE COMPLEX

Thank You **Questions?**