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Bow Tie Analysis & The Matrix













Bow-Tie Health Risk Assessment, Management and Consequence Safeguards Health Health Diagnosis & **Work Processes** Elimination Substitution **Engineering** Organisational PPE **Health Incident** Consequences Generated Surveillance Treatment Restrictions Minimise HAVS **Exposure to Carpal Tunnel** Challenge **Health Risk Review Risk** Design Syndrome Mitigate o Assessment **Provide Access** Minimise Residual Health Health Screen Encourage Human/ to Treatment Present Right person Identify ill Health Asthma Machine PPE Suitable for for the Job Reporting COPD Assess Residual **Evaluate** Interphase the Task Risk Group **Health Risks Lung Cancer** Effectiveness of control Procedures that Offsite **Enclose and** Identify III Health **Analyse Health** Hazards reduces Manufacturing Segregate **Health Trends** Tinnitus Surveillance PPE Right for Identify **Exposure** exposure times **Incident Data Noise Induced** Plan/Schedule the Individual Vulnerable Supervise **Hearing Loss** Individuals to Compliance Deafness Identify Evaluate Storage, Control at Information **Health Hazard** Implement Weakness in Residual Risk Health Instruction Replacement Investigate Source Change and Remedial **Health Effects** Control Reassess Increased Training Maintenance Cause Automate work Action Fitness and Mortality & Process suitability Morbidity Awareness on Evaluate Adopt less **Review Health** hazardous Right Periodic Limitations of Effectiveness PPE Surveillance Cease High Risk process/ Equipment for Health of Control **Identify & Treat** Disability **Norkpla** task & Remove Outcomes Monitor substance the Job Medicals Health Incapacity Harmful Exposure for at Loss of Earning Deterioration Prevent Death & **Risk Individuals** Substances Strain on Occupational III **Health Service** Health **Exposure to Health Hazards Prevention Safeguards Compliance Checks Consequence Reducing Safeguards Encourage** Illness & Optimise Foster Positive Health Behaviour Regulatory Reporting Early Recovery Death **Health Risk Workplace Supervision** Risk Risk Detection Risk Fitness Health Procedure Keep at Prosecution **Awareness Exposure Monitoring** Surveillance¹ for illnesses Work Identification Evaluation Mitigation Assessment **Evaluation** Fines **Compliance Audit** Compliance & Injuries of Control Prevent Reputation Competency **Tool Box Talks** Deterioration Damage Houssein Peerally @Skanska UK

Potential Time Frame for Disease Manifestation – up to 40 Years









BOW TIE ANALYSIS?

What is it?

A system or toolkit developed in Australia in 1979 - then adapted by Royal Dutch Shell Group following the Alpha Piper disaster in 1988.

Bow tie analysis is a simple process for identifying where new or enhanced controls may be worthwhile.

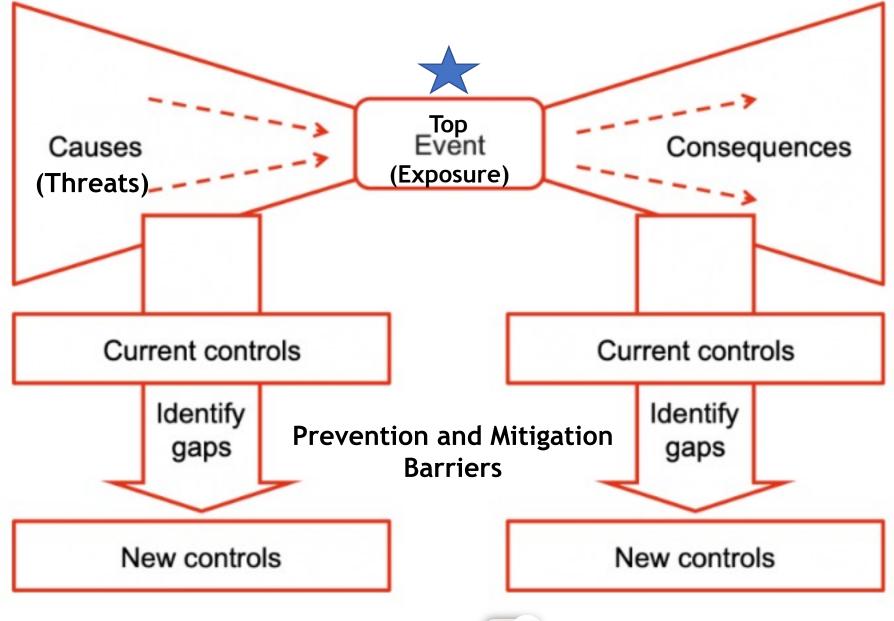
It is a core part of risk assessment, particularly where there is a high level of risk or where control effectiveness is assessed as low.









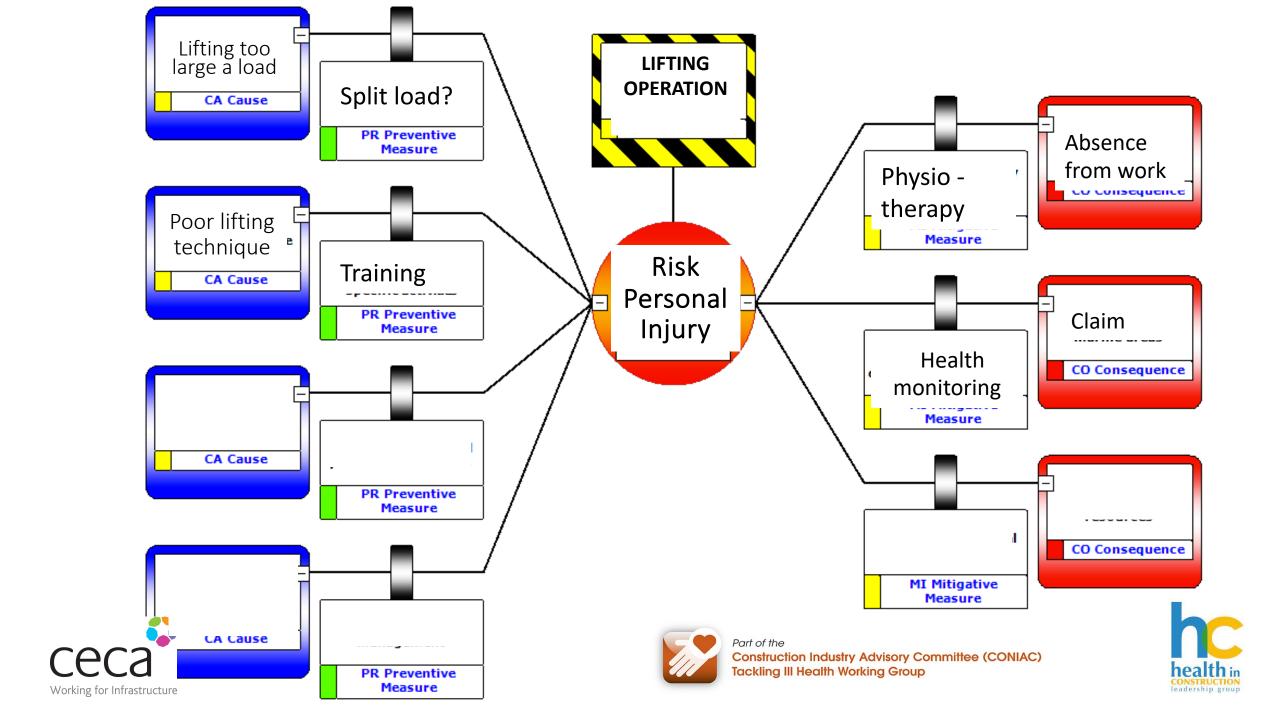












With thanks to Houssain Perrally & Skanska

https://www.linkedin.com/in/houssein-peerally-8b88ab36/

Also help available via:-

GOV.UK - https://www.gov.uk/government/news/bowtie-a-visual-tool-to-keep-an-overview-of-risk-management-practices

RSSB - https://www.rssb.co.uk/safety-and-health/guidance-and-good-practice/bowties/using-bowtie-analysis









Occupational Health Risk Management Maturity Matrix - Example

CATEGORY	TYPICAL SUB-CATEGORY (not exhaustive!)	LEVEL 0 – AWARE	LEVEL 1 - COMMITTED	LEVEL 2 - ESTABLISHED	LEVEL 3 - ADVANCED	SCORE
COMPANY	Leadership					
	Competence					
	Auditing					
PEOPLE	Assessments					
	Drug & Alcohol					
	Attendance management					
RISK MANAGEMENT	Hazard Identification					
	Health risk management					
	Health surveillance					
WELLBEING	Mental Health					
	Wellbeing Activities					









Also help available via:-

Cross Rail - https://learninglegacy.crossrail.co.uk/wp-content/uploads/2017/09/HS08-01_OH-Maturity-matrix-2015-17.pdf

HS2 JV - https://learninglegacy.hs2.org.uk/document/health-safety-improvement-safety-culture-management/

CECA - Costain Health Maturity Matrix









What ACTIONS will you take away with you today?







