The Application of HFACS in an OHS Reporting System

OR

How to Get a Job in the OHS Industry Using Your Aviation Experience!

Introduction

Who Am I?

My Background

Why you are sought after in the OHS world

Why everything is FOC.

Scope

The University SMS, Project Zero

Brief introduction to UniHIRTS (University Hazard and Incident Reporting and Tracking System)

Brief history of HFACS

Applying HFACS to UniHIRTS

The Results

Conclusion.

Michael Flannery
May 2010

Project Zero

Designed and developed to meet legislative requirements but based on aviation industry experience

Goals

zero harm…attributable to human factors within control of USQ,

zero breaches of…legislation,

zero hazards and safety related risks that are not recognised and managed…, and

zero unreported incidents…

Philosophy – all should leave in as good as if not better condition than when they arrived.

Project Zero (Cont)

12 Elements

1. Management commitment
2. Safety organisation structure
3. Risk management
4. Workplace health and safety procedures
5. Suppliers, contractors and purchasing controls
6. Incident and hazard management
7. Injury and illness management
8. Emergency management
9. Participation and consultation
10. Education and training
11. Wellbeing
12. Audit and survey

Project Zero (Cont)

Built-in audit tools, training packages, WMS, risk management system, etc

Packaged transportable system available FOC on the internet

Currently used by the QLD wine industry

System has been very successful within USQ (results later)

Click to edit Master text styles
Second level
- Third level
  - Fourth level
    - Fifth level

USQSafe Project Zero Tea Break Talk

Confined space

CONFINED SPACE

Facts:

Each year in Australia, people are killed in a wide range of confined spaces, from storage vessels, to complex industrial equipment. Many of these fatalities occur when attempting to rescue another person in a confined space. Additionally, people can be seriously injured from other hazards found within confined spaces.

Legislation:

WH&S Regulation 2008, Part 18 s248/249/250.

General Safety Tips

- managers/supervisors should always conduct a risk assessment to identify and control any hazards associated with entering a confined space in the particular situation. (use Risk Matrix Tool below)

- all applicable workers should be trained in confined space entry

1. Enter Consequence

Probability	Consequence				
	Insignificant No Injury 0-$5K	Minor First Aid $5K-$50K	Moderate Med Treatment $50K-$100K	Major Serious Injuries $100K-$250K	Catastrophic Death More than $250K
Almost Certain	M	H	E	E	E
Likely	M	H	H	E	E
Possible	L	M	H	H	H
Unlikely	L	L	M	M	M
Rare	L	L	L	L	L

2. Enter Probability

Recommended Action Guide

E=Extreme Risk – Task *MUST NOT* proceed

H=High Risk – Special Procedures Required (See USQSafe)

M=Moderate Risk – Work Method Statement Required

L=Low Risk – Use Routine Procedures

3. Find Action

Tea Break Talk

USQ Safe

Click to edit Master text styles

Second level

- Third level
  - Fourth level
    - Fifth level

University of Southern Queensland

AUDIT TOOL

Element 1.   Management Commitment

Policy	(circle response)	
1.1. Is the University Workplace Health and Safety policy displayed in a prominent place and is it available to all personnel within the work area?	Yes	No
1.2. Do management actions in this work area reflect the attributes of the policy?	Yes	No
1.3. Does management communicate the policy objectives to all employees and others at this workplace?	Yes	No
1.4. Does management evaluate the effectiveness of communicating the policy objectives by visiting training sessions, checking notice boards, attending health and safety meetings etc?	Yes	No
Provision of Information		
1.5. Does management provide relevant information at this workplace? for example: procedure manuals, maintenance manuals, procedures for high risk jobs, notice boards, MSDS reference manuals, group meetings	Yes	No

Action Plan Element 1

(Record the action required to address each "no" response in the space provided)

ACTION

BY WHOM   DATE FOR COMPLETION

ACTION

BY WHOM   DATE FOR COMPLETION

ACTION

BY WHOM   DATE FOR COMPLETION
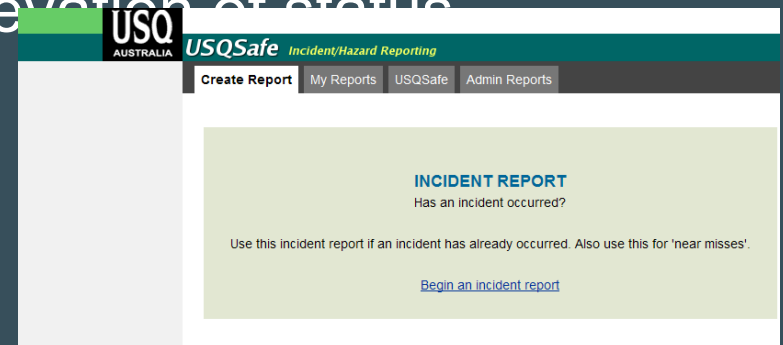
Project

UniHIRTS

University Hazard and Incident Reporting and Tracking System

Developed in-house

Web based (Java)

Hierarchical structure (based on business org structure)

Uses email for notifications and elevation of status

UniHIRTS (cont)

Tracks Actions and Recommendations

Closed loop (cannot close without resolution)

Risk management included

Interacts with PeopleSoft HR system

Investigation tool

HFACS

Report function.

http://139.86.38.131/usqsafe/faces/new_report.jsp

Google

File   Edit   View   Favorites   Tools   Help

Google   university swine faqs   Search   Bookmarks   Check   AutoFill   university   swine   faqs   bloo.f...

softonic   Go   Free TV   Games   ...MTV   News [826]   Gadgets   Disabled   12°C   E-mail Notifier

USQ Pandemic influenza information   Mirek's Free Windows Software   Staff Search   Create new report : USQ...   Page   Tools

USQ
AUSTRALIA

Contact Us | Search | About this Site

USQSafe *Incident/Hazard Reporting*

Create Report   My Reports   USQSafe   Admin Reports

INCIDENT REPORT
Has an incident occurred?

Use this incident report if an incident has already occurred. Also use this for 'near misses'.

Begin an incident report

HAZARD REPORT
Have you identified a hazardous situation?

Use this hazard report if you think an incident could occur in the future.

Begin a hazard report

USQSafe *Incident/Hazard Reporting*

Contact Us | Search | About this Site

| Create Report | **My Reports** | USQSafe | Admin Reports |

My reports

This 'My Reports' page will only show reports:

- that you have saved,
- that you have submitted and are still at the supervisor level,
- where you are designated as the supervisor,
- which have been submitted for you by someone else,
- that are in 'ALERT' status because your supervisor has not responded (which may require routing to another supervisor), or
- where an action or recommendation has been assigned to you.

Incident Report List [6 - record(s) found]

Ref ID	Status	Created Date	Title (Brief Description)	Incident Date	Reported				
I-09-140	RCLOS	11/03/2009	Student suffered a Panic Attack in Library	09/03/2009 03:00 PM	[By Bryan Flemming][For Leylah Abawi][To Tony Machin]	View	Edit	Delete	Action
I-09-139	INVES	11/03/2009	Car speeding between people at Steele Rudd	22/02/2009 04:15 PM	[By Bryan Flemming][For Cameron Summerville][To Brad Everton]	View	Edit	Delete	Action
I-09-123	RCLOS	27/01/2009	Staff member not using PPE	27/01/2009 12:45 PM	[By Bryan Flemming][For Bob Horstman][To Rebecca Scollen]	View	Edit	Delete	Action
I-09-118	INVES	13/01/2009	level crossing incident	07/01/2009 08:35 AM	[By Roger Stone][For Roger Stone][To Graham Baker]	View	Edit	Delete	Action
I-08-088	RCLOS	22/10/2008	Mobile Scaffold pushed into foot	03/10/2008 09:25 AM	[By Leah Baldwin][For Tyrone Pearce][To Terry McCarthy]	View	Edit	Delete	Action

|◄ ◄ 1 2 ► ►|

Hazard Report List [5 - record(s) found]

Ref ID	Status	Created Date	Title (Brief Description)	Reported				
H-09-036	SUPER	17/04/2009	Dangerous Driving by Buses on Ring Road	[By Michael Flannery][For Michael Flannery][To John Pearson]	View	Edit	Delete	Action
H-09-031	RCLOS	06/03/2009	Speed Hump Confusion with Pedestrian Crossing	[By Paul Murray][For Paul Murray][To Greg Coonan]	View	Edit	Delete	Action
H-09-029	SUPER	23/02/2009	Vehicular traffic in the Quad	[By Kath O'Donnell][For Kath O'Donnell][To Michael Flannery]	View	Edit	Delete	Action
H-08-020	CLOSE	29/10/2008	Mulch containing nails etc.	[By Peter Munster][For Peter Munster][To Peter Munster]	View	Edit	Delete	Action
H-08-001	CLOSE	01/04/2008	3 pin Plugs Breaking	[By Michael Flannery][For Michael Flannery][To Garry Bourne]	View	Edit	Delete	Action

USQSafe Hazard/Incident Reporting & Tracking System
Incident/Hazard Reports - Summary Listing

Total Reports: 77

Ref No	Reported Date	Title	Status	USQSafe Comment		Actionee	Requested Action
H-09-025	07-Jan-2009	Bougainvillea with large spikes hanging over path.	CLOSE	Agree with the recommendation.	447	Peter Munster	Cut back all bougainvillea branches away from pedestrian traffic areas.
H-09-026	21-Jan-2009	Smoke passing through air conditioning ducts	CLOSE	USQSafe manager has discussed with the Group Manager Facilities and No Smoking signs will be posted in the undercroft. Vehicle traffic will also be kept to a minimum. This area will be re-developed in the near future. GM Facilities was reluctant to further restrict vehicle traffic as the tradesmen need access to the plant rooms.	550	Bryan Flemming	Check that FM do erect No Smoing signage in the undercroft.
H-09-027	21-Jan-2009	Gas smell in Q138	RCLOS	Investigation into the gas smell found that it was the used gas bottles waiting for collection being turned on. The person responsible was advised about the contamination of air into Q Block and the subsequent evacuation of students. A recommendation to Artworx to review the need for gas bottles to be kept onsite will be forwarded.	570	Bryan Flemming	Follow up in person, Brendan Hohn, the recommendation to not have gas bottles kept onsite and only hire gas bottles when required on a specialised trolley. Also provide education to staff not expell unused gas from bottles.
					630	Rebecca Scollen	Recommendation not to have large gas bottles for the McGregor school metal melting workshop kept onsite. A specialised trolley to hold the large gas bottles would also eliminate other hazards, identified in the hazard report (Jan 2009).
H-09-028	23-Feb-2009	Slippery step at C block.	RCLOS	Area was inspected. Dirt,		(No Action Information.)	

03-Jun-2009

Human Factors

Human factors identified as significantly contributing factors in 80-90% of all incidents

This figure is probably closer to 100%

Identity the human factors and target training/design/etc
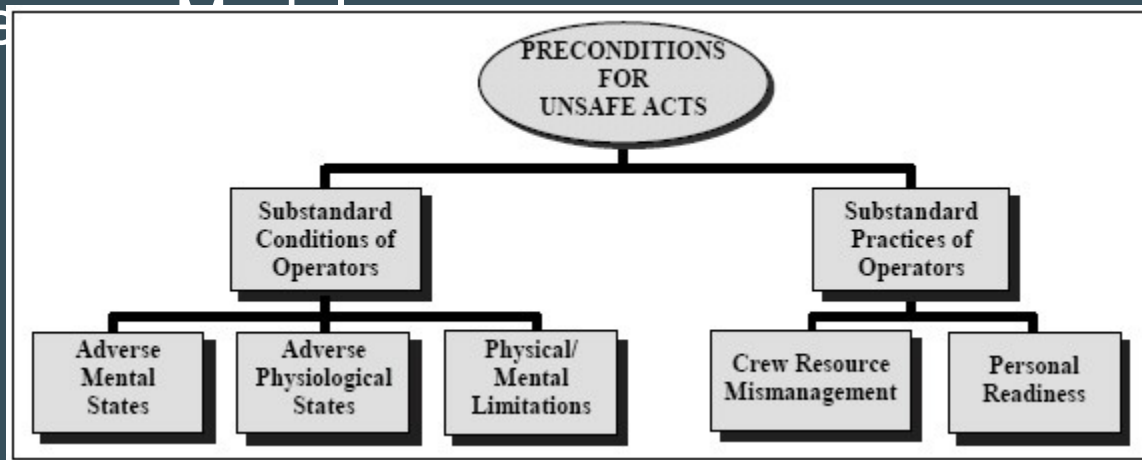
How do we identify the Human Factors?

HFACS
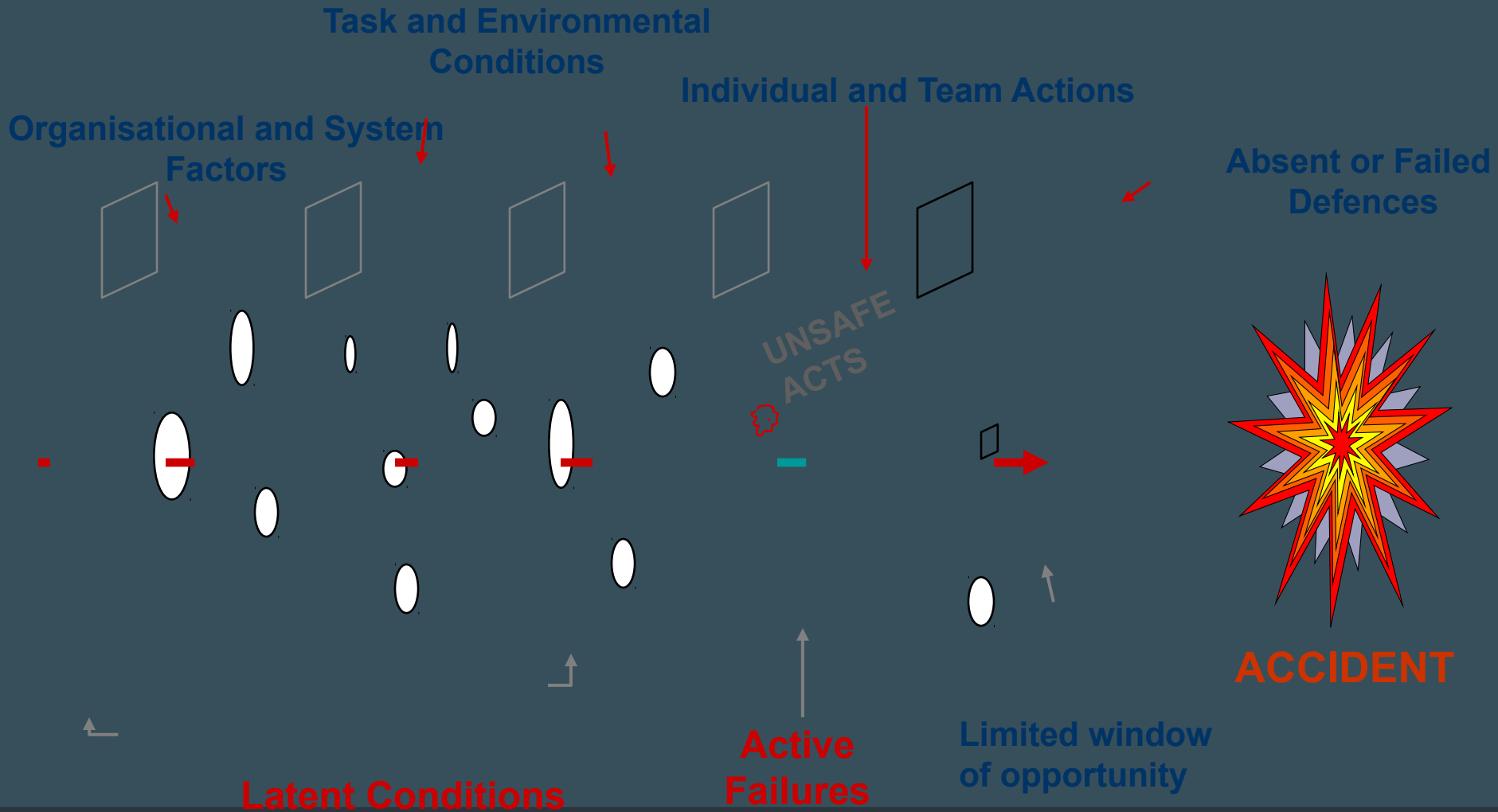
Human Factors Analysis and Classification System
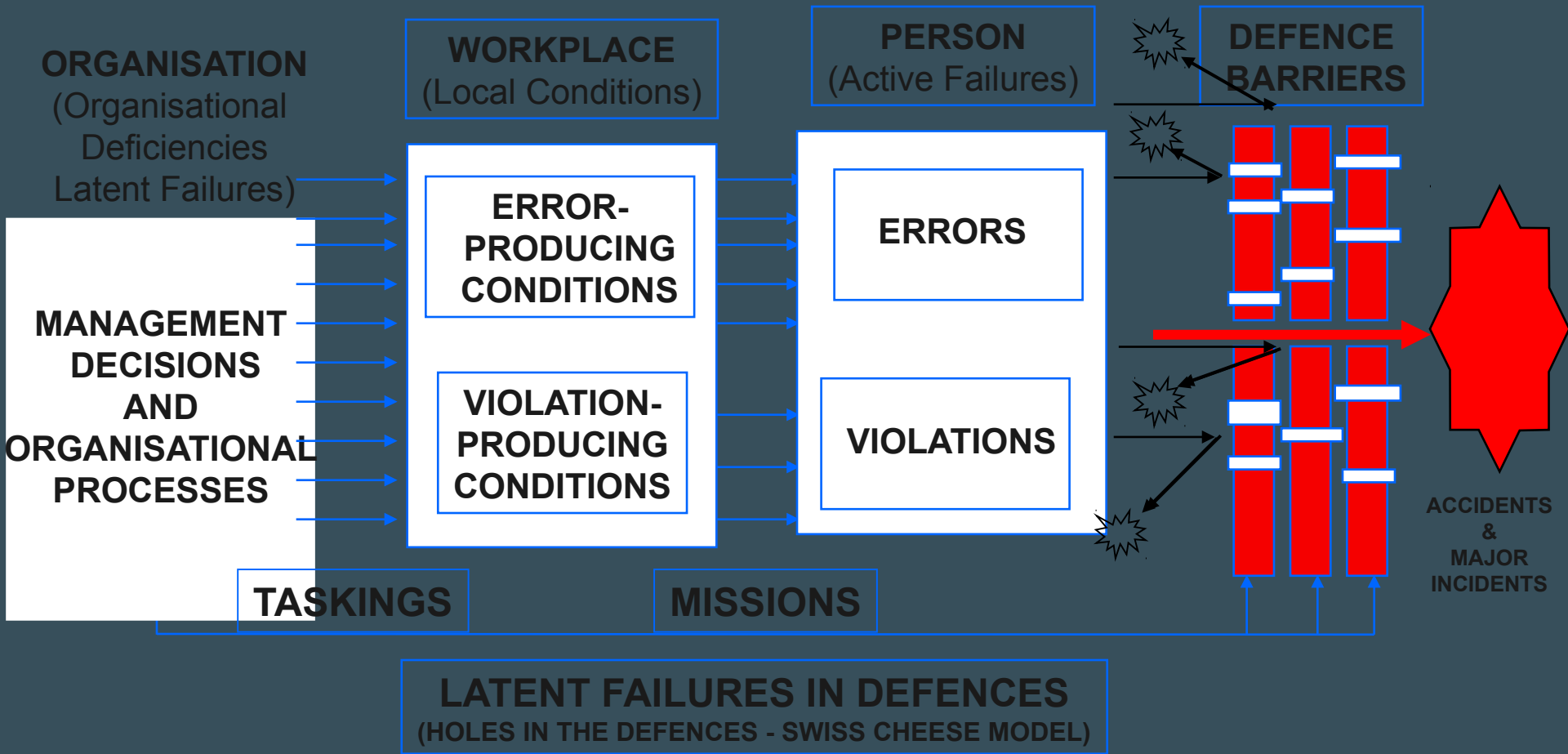
History from Aviation

Wider use

The Reason Model

The Reason Model
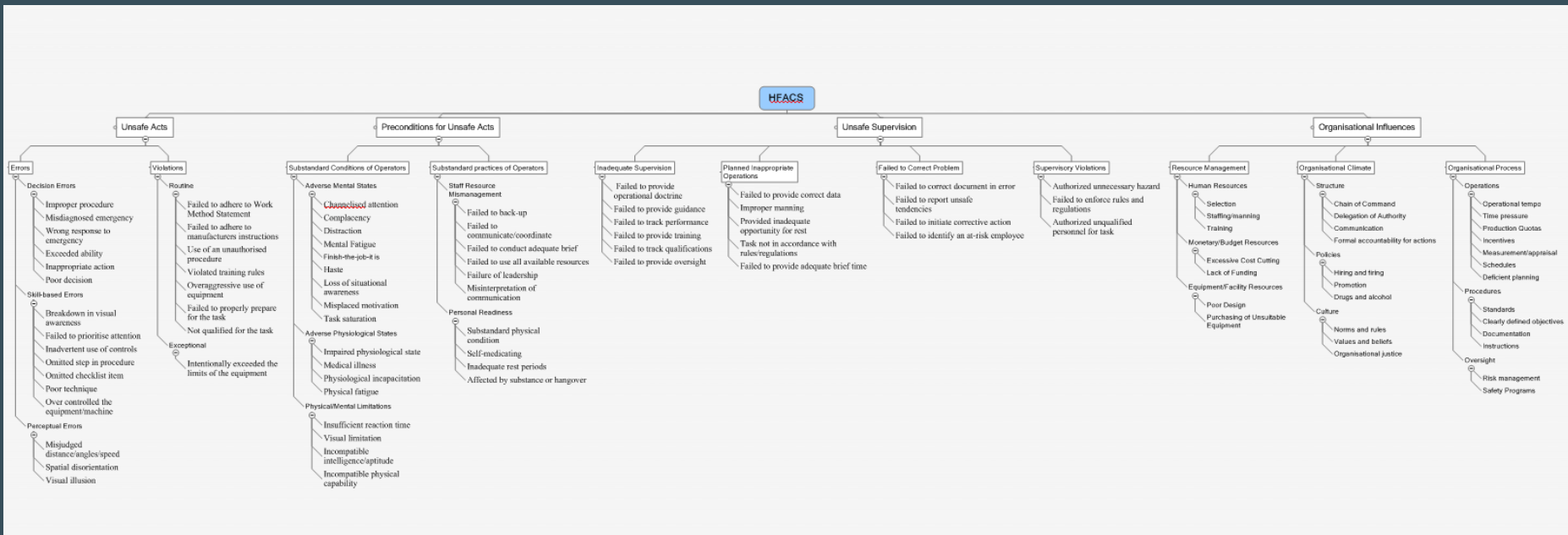## Organisational Error Chain

Task and Environmental Conditions

Individual and Team Actions

Organisational and System Factors

Absent or Failed Defences

UNSAFE ACTS

ACCIDENT

Latent Conditions

Active Failures

Limited window of opportunity

(Adapted from Reason, 1990)

The Reason Model

ORGANISATION
(Organisational Deficiencies Latent Failures)

WORKPLACE
(Local Conditions)

PERSON
(Active Failures)

DEFENCE BARRIERS

MANAGEMENT DECISIONS AND ORGANISATIONAL PROCESSES

ERROR-PRODUCING CONDITIONS

VIOLATION-PRODUCING CONDITIONS

ERRORS

VIOLATIONS

TASKINGS

MISSIONS

ACCIDENTS & MAJOR INCIDENTS

LATENT FAILURES IN DEFENCES
(HOLES IN THE DEFENCES - SWISS CHEESE MODEL)

HFACS

4 – 11 – 19 - 115

Unsafe Acts

Preconditions for Unsafe Acts

Unsafe Supervision

Organisational Influences.

Errors

Violations.

Decision Errors

Skill-based Errors

Perceptual Errors.

Improper procedure

Misdiagnosed emergency

Wrong response to emergency

Exceeded ability

Inappropriate action

Poor decision.

Unsafe Acts

Preconditions for Unsafe Acts

Unsafe Supervision

Organisational Influences.

Inadequate Supervision

Planned Inappropriate Operations

Failed to Correct Problem

Supervisory Violations.

HFACS – Unsafe Supervision – Inadequate Supervision

Failed to provide operational doctrine

Failed to provide guidance

Failed to track performance

Failed to provide training

Failed to track qualifications

Failed to provide oversight.

Applying HFACS to UniHIRTS

Applying HFACS to UniHIRTS

The issues:

Training

Education

How to use the information

Acceptance by an unenlightened population.

The Results

Incidents and Hazards

Reporting up

Severity down

Trend analysis

Targeting the problem areas

Injury Statistics.

The Results

Reports by Calendar Year (2010 extrapolated)
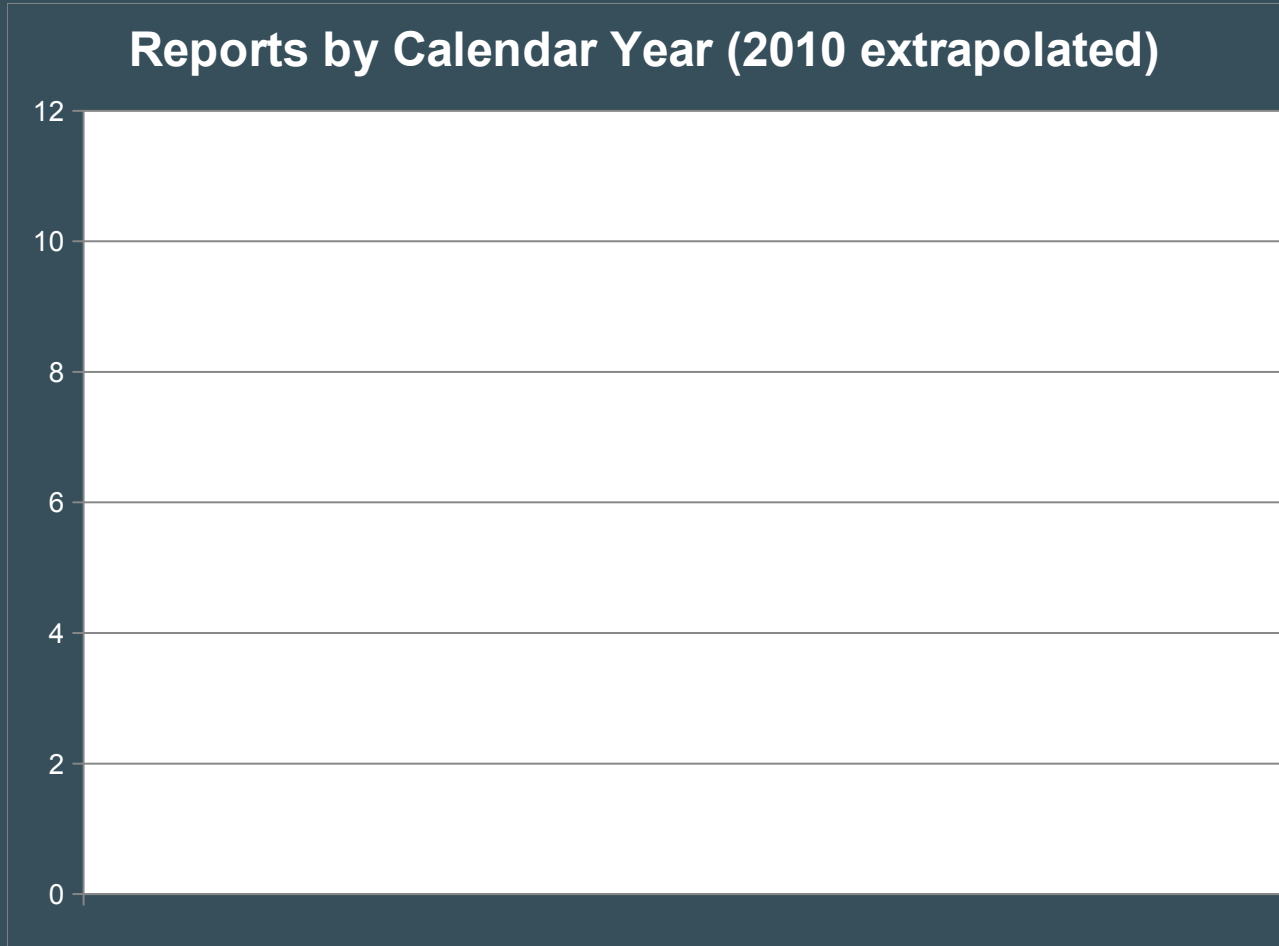
The Results
2009 – 240 Reports
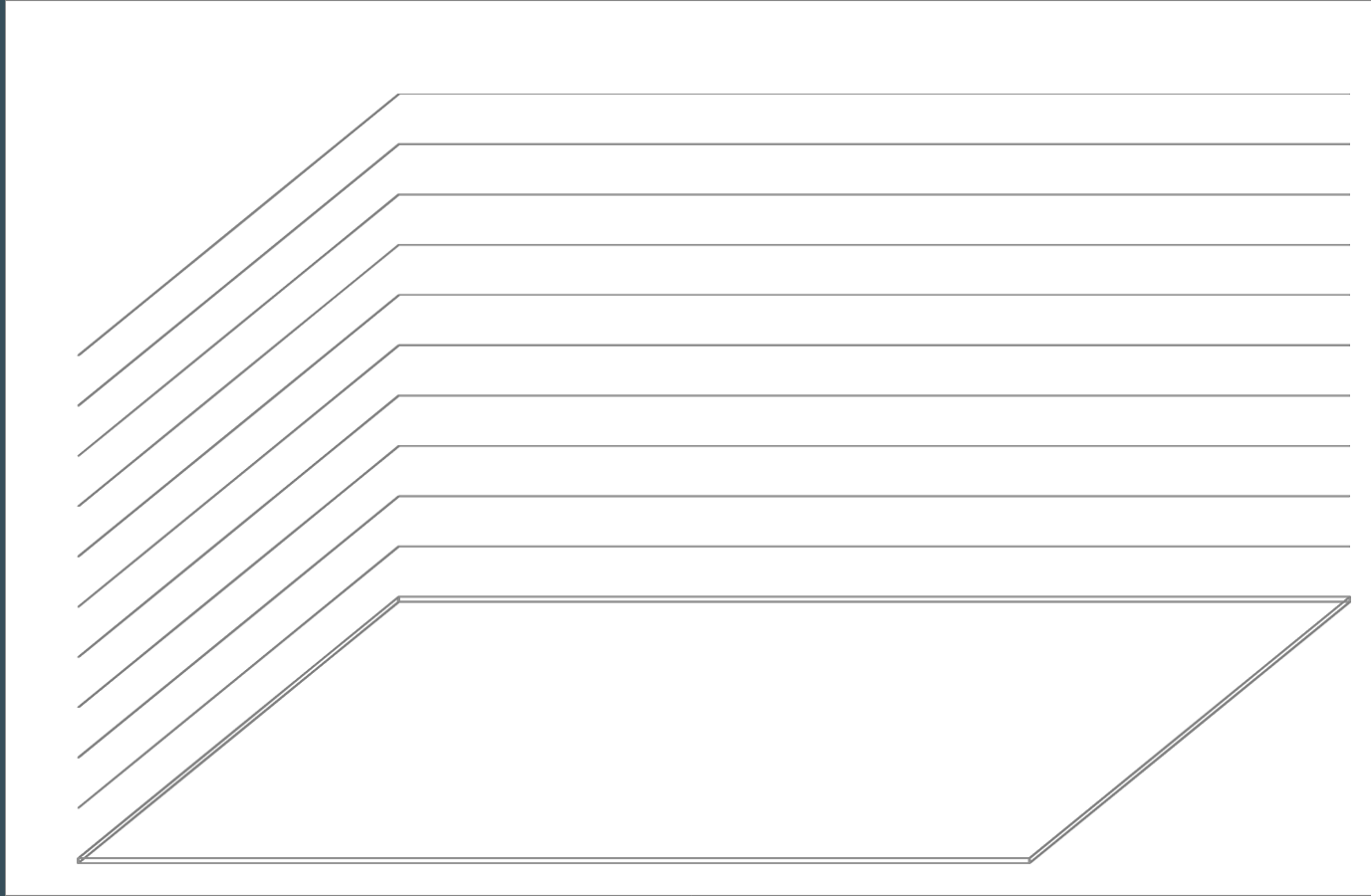
Significant

Errors
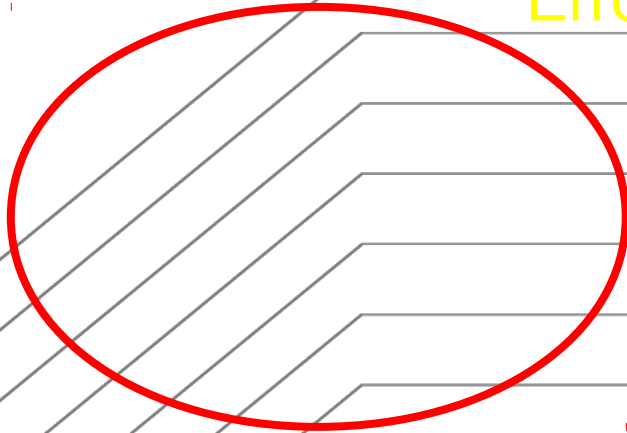
Violations
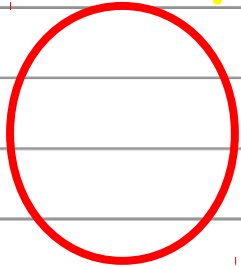
Substandard Conditions of Operator

Inadequate Supervision

Resource Management

Initiatives from Significant Contributing factors

Failed to Prioritise Attention – Task analysis to trap errors

Poor Technique – increased manual handling training

Misjudged distance/angle/speed – Task analysis to trap errors

Use of an unauthorised procedure – task review to ensure suitable procedures are available

Medical Illness – (nil if the illness was the incident)

Failed to provide operational doctrine – doctrine review to ensure all tasks have appropriate written procedures

Failed to provide oversight – training on supervisor responsibilities
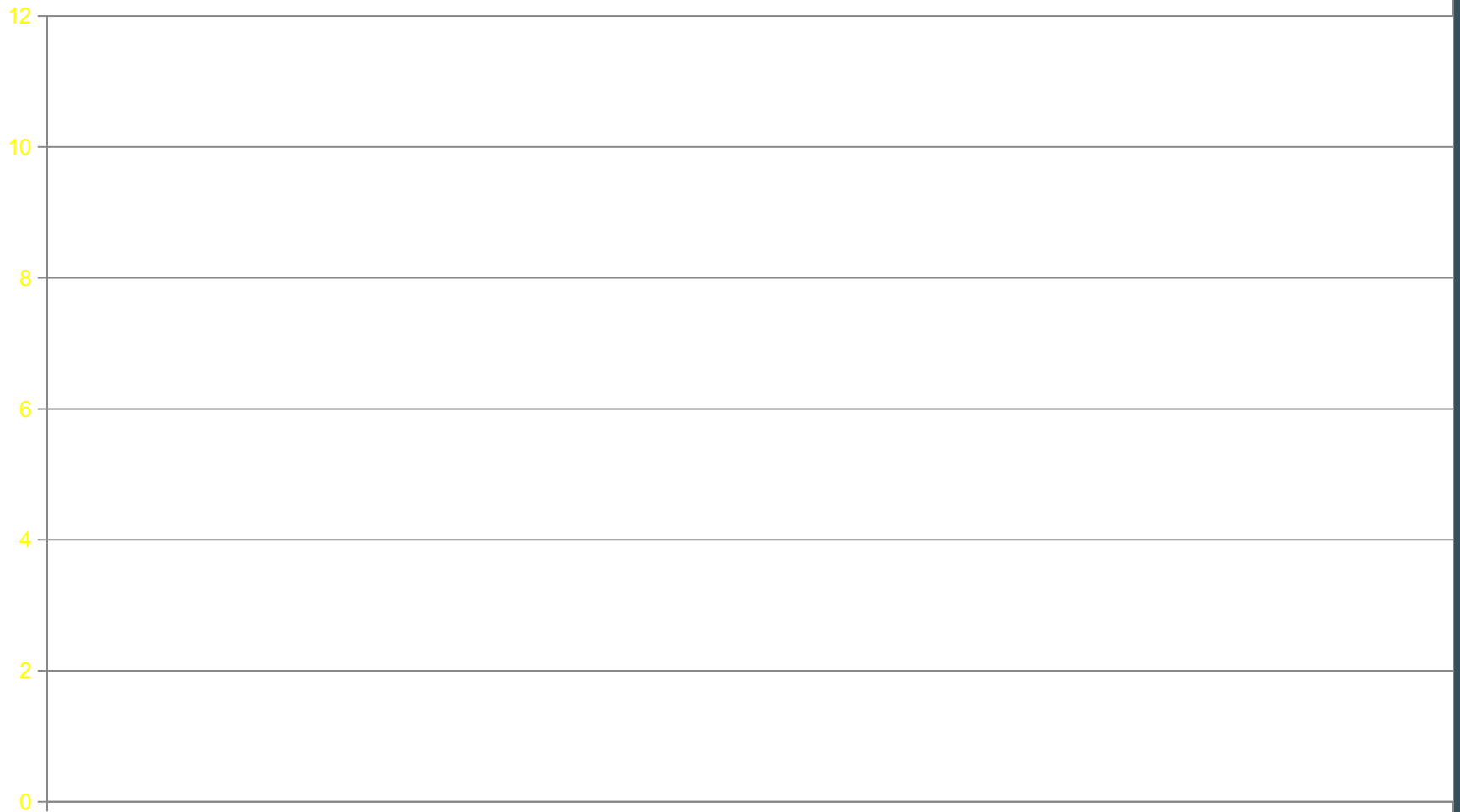
Poor design – major project on procurement to ensure all purchases are checked for safety considerations

Total Days Lost

2008 and 2009 Calendar Year Work Related Injury Statistics

Conclusion

HFACS – is it worth the trouble?

UniHIRTS availability

Intention to provide FOC to all

Based on Oracle database and PeopleSoft

Future Changes

Search function

Enhanced reporting

Auto analysis

Rehab module?

And Finally…

If you ever choose to move, your aviation safety experience is highly sought after and transferable