SAFETY SERVICES ORGANISATION

HAZARD LOGS & SAFETY CASES

HAZARD LOGS

RELEVANT DEFINITIONS

As defined in Def Stan 00-56:

- **Harm**: "Adverse impact on people, including fatality, physical or physiological injury, or short- or long-term damage to health."
- **Hazard**: "Potential to cause harm, e.g. A physical situation or state of a system, often following from some initiating event that may lead to an accident."
- **Hazard Log:** "The continually updated record of the Hazards, accident sequences and accidents associated with a system. It includes information documenting risk management for each Hazard and Accident."

[1,2,3]

REFERENCES AND USEFUL DOCUMENTS

Useful documentation and resources:

- **ASEMS**: The MOD's Acquisition Safety and Environmental Management System (ASEMS). A useful resource that details the policy and contains guidance on all stages of the Project Oriented Safety Management System (POSMS).
  - Access: search "ASEMS Online".
- **MOD Safety White Booklet**: An Introduction to System Safety Management in the MOD Issue 4 Parts 1 and 2.
  - Access: search "An introduction to system safety management in the MOD (White booklet)" on www.gov.uk
- **Def Stan 00-56**: The standard for "Safety Management Requirements for Defence Systems".
  - Access: via StanMIS (search "stanmis" and create an account).
- **Cassandra/eCassandra Help Guide** – accessed via ASEMS online and can be found directly by searching.

[1,2,3,4,5]

CONTENTS – HAZARD LOG

Contents of this Lecture:

- Why a Hazard Log?
- What is a Hazard Log?
- Hazard Log process
- Hazard Log contents
- Hazard Log musts
- Ongoing use of a Hazard Log
- Advantages & potential issues

In this lecture we will discuss Hazard Logs, including why they are necessary, how they work, what information they contain and what software they are usually implemented in.

[2,6]

WHY A HAZARD LOG?

Chiefly: Def Stan 00-56 requires you to.

- “11.4.1 - The Contractor shall implement a Hazard Log.”

If that isn’t enough however, there are many other benefits to having a Hazard Log:

- Provides an easy way to record safety data.
- Acts as a single source of truth for all project safety data.
- Makes it easier to review the safety analysis and view the progress.
- Allows for traceability and record of safety decisions made throughout the project.

[3,5,7,8]

WHAT IS A HAZARD LOG?

A hazard log is a record of all the safety information for a project. Despite its name, it should contain information on accidents, hazards, causes, controls and ALARP status.

It should be the formal record of all the hazard and risk assessment activities undertaken.

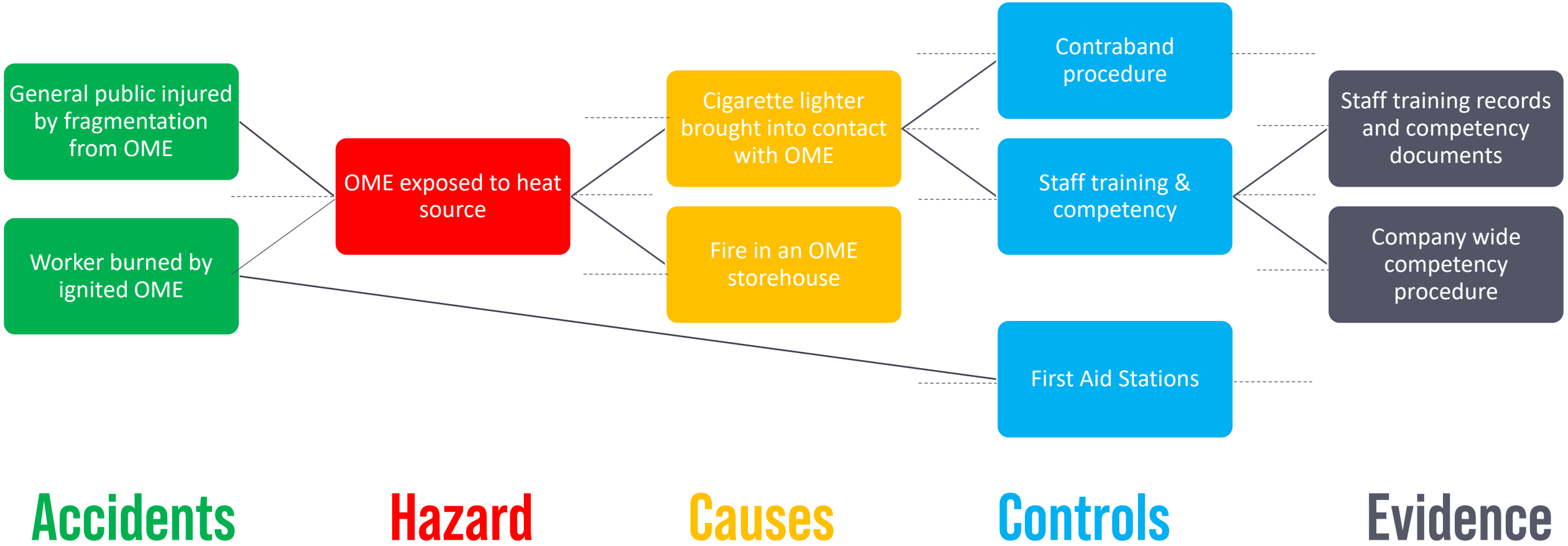
For each accident/hazard it will detail the ALARP status.

It will also describe the system.

It can be implemented on paper or in software. The MODs preferred tool is the Cassandra/eCassandra software.

[5,9,10]

WHAT IS A HAZARD LOG?



HAZARD LOG PROCESS

The Hazard Log will take input from the risk assessment process:

- Add in Hazards, accidents, causes and the identified controls.

It will also allow the following activities to be undertaken:

- Assign control owners
- Status these controls as implemented, or identify the gap in evidence or relevant closure action.

Likelihood \ Impact	Negligible	Minor	Moderate	Significant	Severe
Very Likely	Low Med	Medium	Med Hi	High	High
Likely	Low	Low Med	Medium	Med Hi	High
Possible	Low	Low Med	Medium	Med Hi	Med Hi
Unlikely	Low	Low Med	Low Med	Medium	Med Hi
Very Unlikely	Low	Low	Low Med	Medium	Medium

[5,11,12]

HAZARD LOG PROCESS - CONTINUED

It will also allow the following activities to be undertaken (continued):

- Cross checking – identify where other accident sequences and hazards may link in.
- Resolution – sentence the accidents/hazards, including ALARP statements.
- Ongoing maintenance and regular review.
- Production of a Hazard Log Report.

Likelihood \ Impact	Negligible	Minor	Moderate	Significant	Severe
Very Likely	Low Med	Medium	Med Hi	High	High
Likely	Low	Low Med	Medium	Med Hi	High
Possible	Low	Low Med	Medium	Med Hi	Med Hi
Unlikely	Low	Low Med	Low Med	Medium	Med Hi
Very Unlikely	Low	Low	Low Med	Medium	Medium

[5,11,12]

HAZARD LOG CONTENTS (ECASSANDRA)

ECASSANDRA Glider Hazard Log - 2 - 4

Home | Project Summary | Project Settings | Reporting | Tools | Help | Switch Project | Report a Problem | Technical Support | Logout

Accidents | View Accidents | Add New

Accident Name

- (Draft) Aeroplane collides with obstruction edit
- (Draft) Aircraft Overshoots Airfield Personnel
- (Draft) Ground Surface is Damaged by Fuel
- (Draft) New Accident1
- (Draft) New Accident2
- (Draft) New Accident2
- (Draft) New Accident3
- (Draft) New Accident3
- (Draft) Vapourises
- (Draft) Vapourises
- (Draft) Vapourises
- (Draft) Vapourises
- (Draft) Vapourises
- (Draft) Vapourises
- (Draft) Vapourises
- (A1) Vapourises
- (A2) Crash on Landing/Take off
- (A3) Aircraft Overshoots Airfield Asset
- (A4) Aircraft Overshoots Airfield Environment
- (A5) Aircraft Overshoots Airfield Personnel

22 Accident records
(21 draft/open, 0 approved/managed, 1 accepted/ALARP, 0 deleted)

Display: 20 records
Group By: (None)
Search:
Filter: Show Deleted Items

Page 1 of 2

Project Summary

Project Details

22 Accident records
(21 draft/open, 0 approved/managed, 1 accepted/ALARP, 0 deleted)

10 Hazard records
(9 draft/open, 1 approved/managed, 0 closed, 0 deleted)

10 Cause records
(10 draft/open, 0 approved/managed, 0 closed, 0 deleted)

Total Risks by Status

Risks (22)

Risk Class	Draft	Open	Approved	Managed	Accepted	ALARP	Deleted	Total
A	15					1		16
B								
C		1						1
D								
U		5						5
Total:	15	6				1		22

Expired and Near Expiry Accidents (0)

Accident	Review Date	Review Status

Page 1 of 1 — No data to display

Active Controls by End Date (1)

Control	End Date	Review Status
(C2) Take-Off Checks		Active Controls

Page 1 of 1 — Displaying 1 - 1 of 1

HAZARD LOG CONTENTS (ECASSANDRA)

ECASSANDRA Glider Hazard Log - 2 - 4

Home | Project Summary | Project Settings | Reporting | Tools | Help | Switch Project | Report a Problem | Technical Support | Logout

Hazards | View Hazards | Add New

Hazard Name

- (Draft) Glider struck by Death Ray
- (Draft) New Hazard 1
- (Draft) New Hazard 1
- (Draft) New Hazard 1
- (Draft) New Hazard 1
- (Draft) Obstruction on Airfield
- (H1) Power Failure on Winch
- (H2) Bird Strike
- (H3) Air Brakes Fail
- (H4) People on the Active Runway

10 Hazard records
(9 draft/open, 1 approved/managed, 0 closed, 0 deleted)

Display: 20 records
Group By: (None)
Search:
Filter: Show Deleted Items
Page 1 of 1

(Draft) Glider struck by Death Ray

Hazard Details | Accidents | Causes | Controls | References | History

Save | Duplicate | Print | Spell Check | Help
Hazard | Printing | Help

Unlinked Causes

Number	Cause Name
Draft	Air Brake Mechanism
Draft	Birds
Draft	New Cause 1
Draft	New Cause 1
Draft	New Cause 1
Draft	New Cause 1
Draft	Obstructions
Draft	Power Failure
Z1	Footpaths

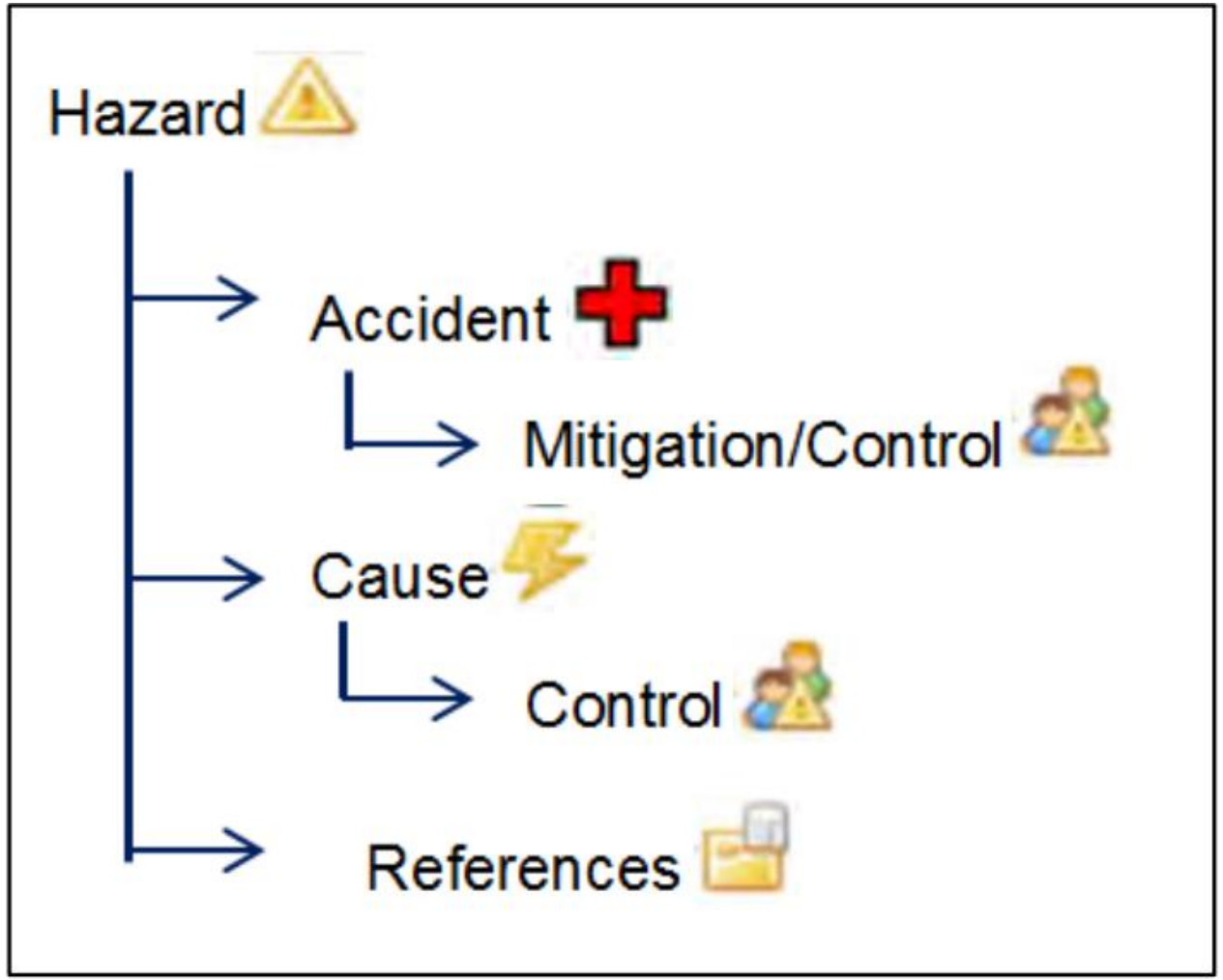
Displaying 1 - 10 of 10
Display: 20 records
Search:
Page 1 of 1

Linked Causes

Number	Cause Name	Status	Description	Contributio
Draft	Aliens	Draft	Aliens may tamper with things	

Created on 20/04/2016 at 08:48am by Phil Provis | Modified on 20/04/2016 at 08:48am by Phil Provis

HAZARD LOG CONTENTS (ECASSANDRA)



HAZARD LOG MUSTS

A Hazard Log must be:

- Living – it should be continually maintained and updated.
- Useable – it should allow the project to actually manage risk.
- A Complete Record.
- Clear and Auditable.
- Traceable - When objects are changed there should be a record of why this decision was made.

[5,9,13]

ONGOING USE OF A HAZARD LOG

As mentioned previously, during the development of a system, the Hazard Log is pivotal. Once the system is developed however, what is the point of the Haz Log?

- A Hazard Log allows multiple organisations to have common safety information.
- Often, the Haz Log will be transferred from the Design Authority following completion, to the user to allow them to manage in-service hazards.
- As a live document it must be continually reviewed.
- It can act as a historical record, informing future projects.

[5,14,15]

ADVANTAGES & POTENTIAL ISSUES

Advantages of a Hazard Log:

- It is an effective tool for managing risks to ALARP.
- Consistent set of safety information.
- Easy to review and allows easy oversight.
- Traceability of safety decisions.

Potential Issues:

- Because they show so much information, Hazard Logs can become very large and unwieldy.
- If Hazards are not defined properly it can become difficult to maintain and manage.

[5,16,17]

NEXT STEPS...

The next lecture will talk about Safety Cases before concluding with a lecture about OME legislation.

REFERENCES

1. https://www.kpcmhealthandsafetysigns.com/international-hazard-warning-symbol
2. https://www.repubblica.it/economia/2017/04/07/news/la_ue_cambia_i_simbol_sulle_etichette_rischio_discarica_per_molti_prodotti-162336907/
3. Def Stan 00-56: The standard for "Safety Management Requirements for Defence Systems".
4. MOD Safety White Booklet: An Introduction to System Safety Management in the MOD Issue 4 Parts 1 and 2.
5. ASEMS Online POSMS - https://www.asems.mod.uk/guidance/posms
6. https://www.thelogpeople.co.uk/log-commandments/
7. https://dictionaryblog.cambridge.org/2014/09/03/you-must-read-this-have-to-or-must/
8. https://www.youtube.com/watch?v=21q-hZpRViM
9. http://www.seaforces.org/wpnsys/SURFACE/BAE-Mark-8-gun.htm
10. https://defpost.com/british-armys-new-ajax-scout-vehicle-undertakes-in-country-cold-weather-system-trialling-in-sweden/
11. https://www.thereliabilityblog.com/2017/09/13/beyond-the-risk-matrix/
12. https://rosstraining.com/blog/2014/04/maintenance-vs-progress/
13. https://loonylabs.org/2016/03/08/artificial-protein-rescues-dying-cells/
14. http://blogs.reuters.com/great-debate/2014/07/14/pentagons-big-budget-f-35-fighter-cant-turn-cant-climb-cant-run/
15. https://www.airspacemag.com/military-aviation/f-35-faces-most-critical-test-180971734/
16. http://www.luminstruct.com/blog/category/useful
17. https://www.wired.com/2013/10/you-can-kill-a-man-100-ways-with-this-crazy-swiss-army-knife/
18. Cassandra/eCassandra Help Guide. MorrisE109. 10/10/2016. ASEMS Online. https://www.asems.mod.uk/sites/default/files/documents/Cassandra%20Guide%20-%20How%20to%20set%20up%20a%20Hazard%20Log%20and%20its%20Components_0.pdf
19. http://little-bitsofjoy.blogspot.com/2012/08/next-steps-towards-kimberlie.html

THANK YOU FOR LISTENING

ANY QUESTIONS?

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