

Emergency Evacuation Planning

Based upon AS3745-2010





Thredbo NSW





Newcastle NSW -2007



Morning

Afternoon

Introduction & Welcome
About Fire

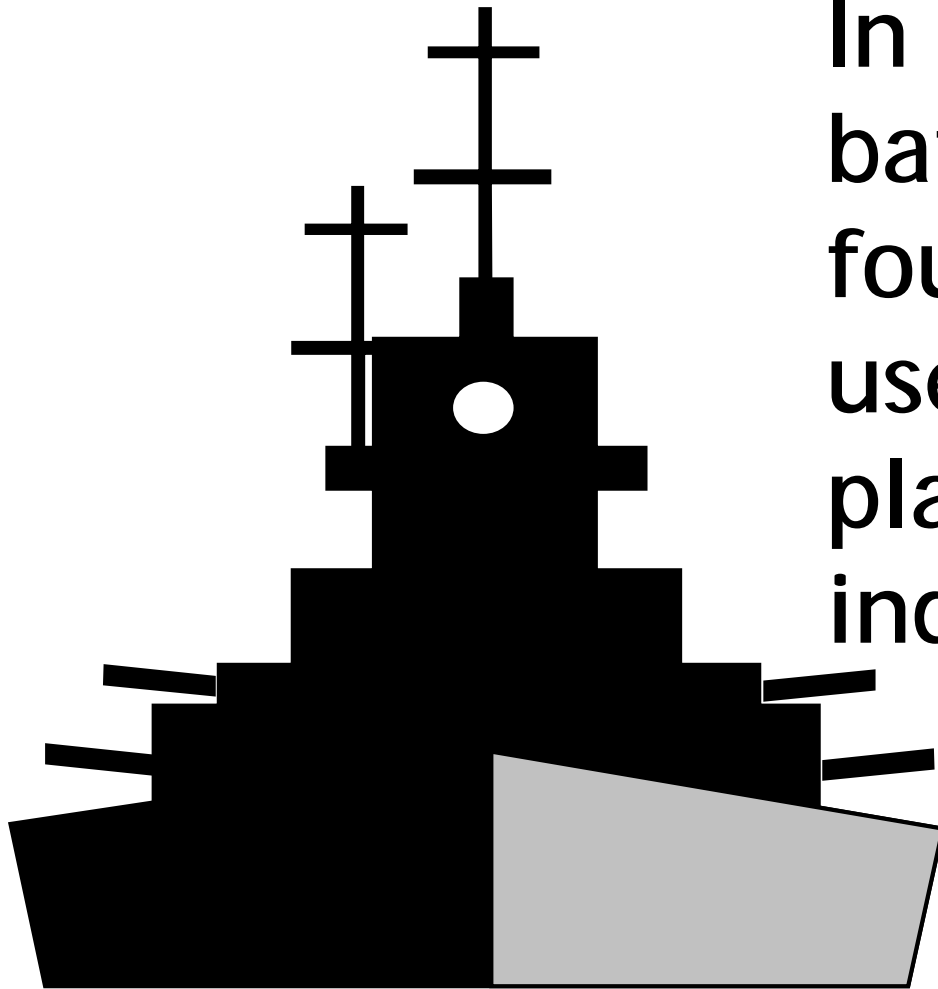
Risk Assessment

Morning coffee (10:20)

Evacuation Planning

The role & duties of
the Chief Warden

The role & duties
of Wardens
Questions/Discussion

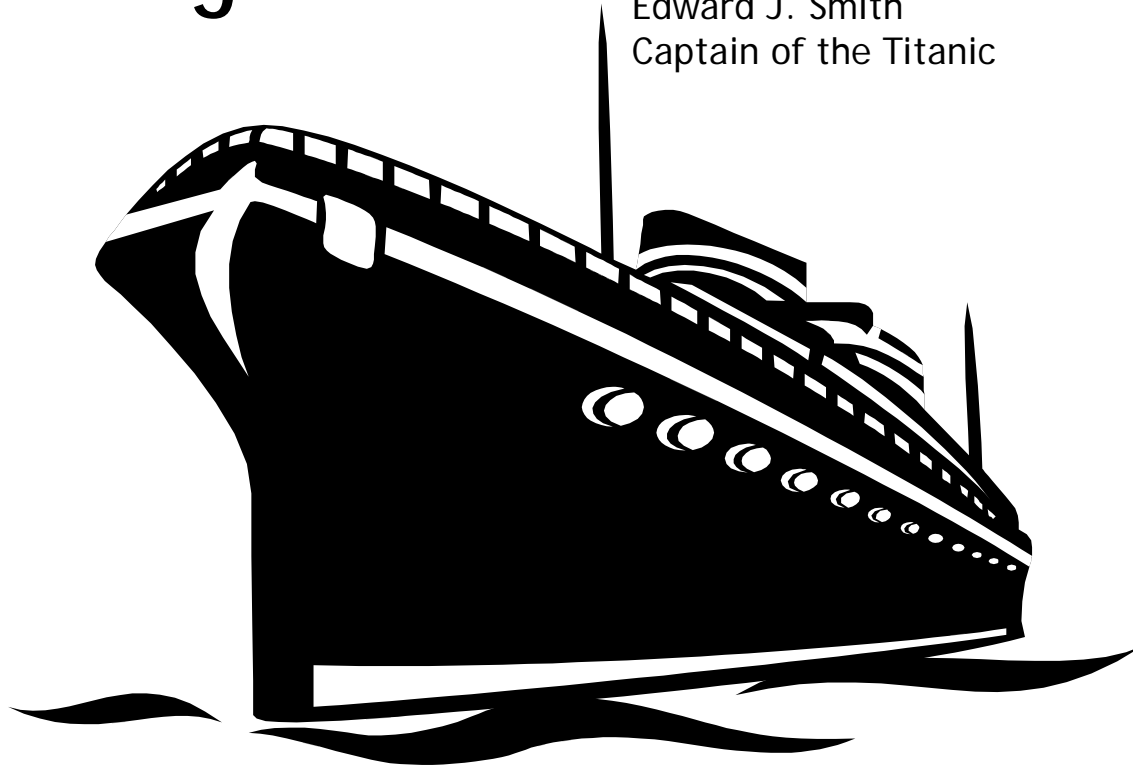


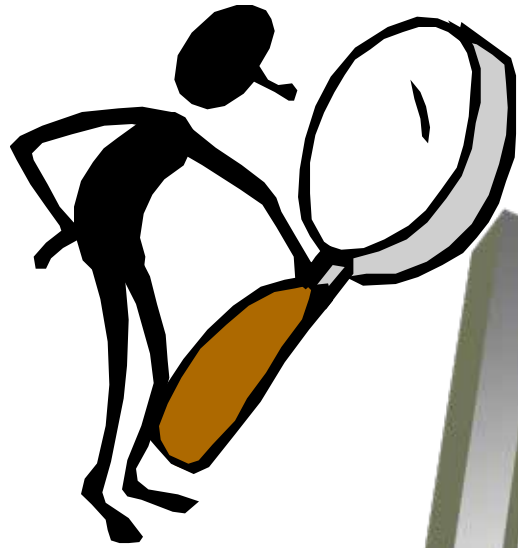
In preparing for
battle, I have always
found that plans are
useless - but
planning is
indispensable

Dwight D. Eisenhower

I have been many times around the globe and many years at sea. Never once have I felt myself in danger.

Edward J. Smith
Captain of the Titanic

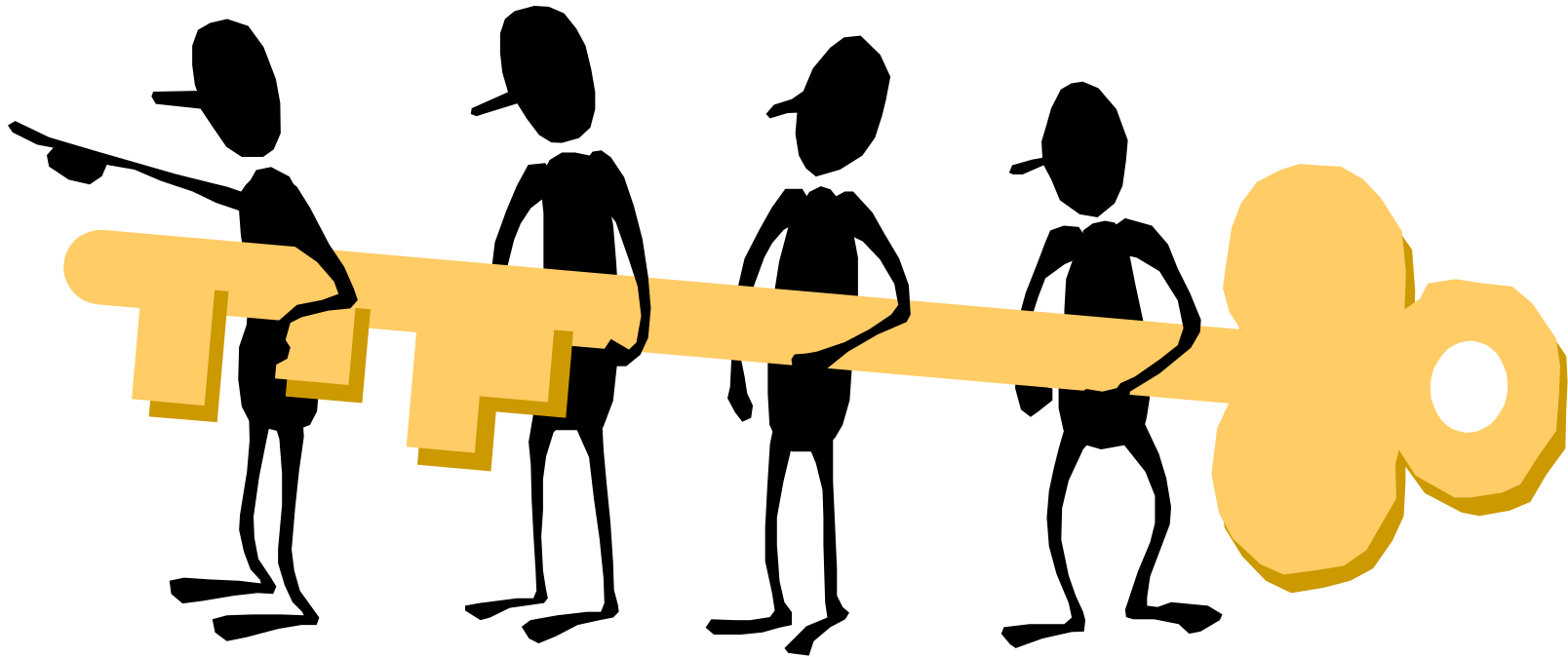




Definitions



**EMERGENCY PLANNING
RISK MANAGEMENT
DISASTER PLANNING
BUSINESS CONTINUITY PLANNING**



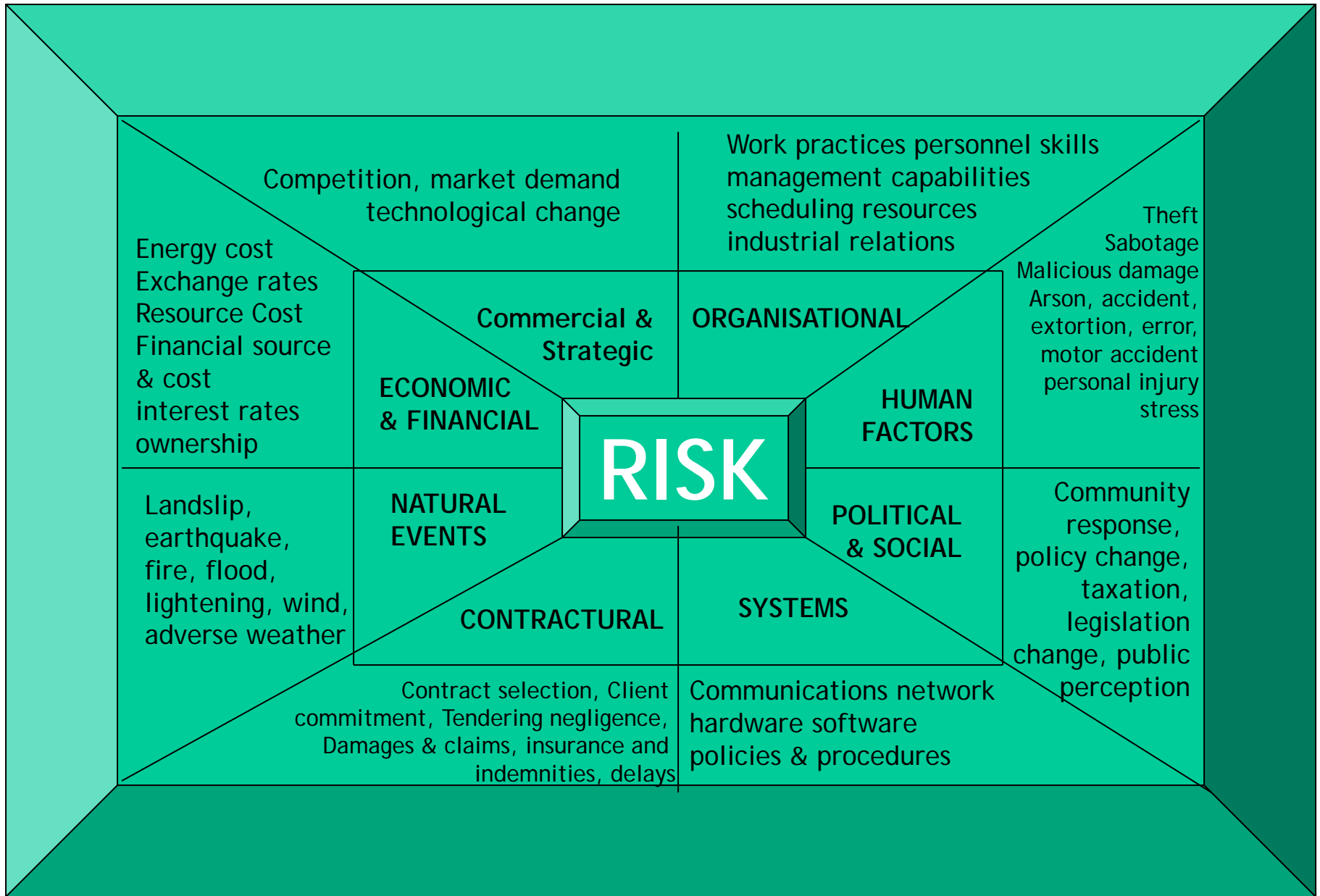
Risk
Catastrophe
Disaster
Accident
Emergency
Occurrence

A matter of degree

*A risk becomes a reality
becomes an emergency,
or a catastrophe,
or a disaster,
dependant upon our
ability (or inability) to
handle it*

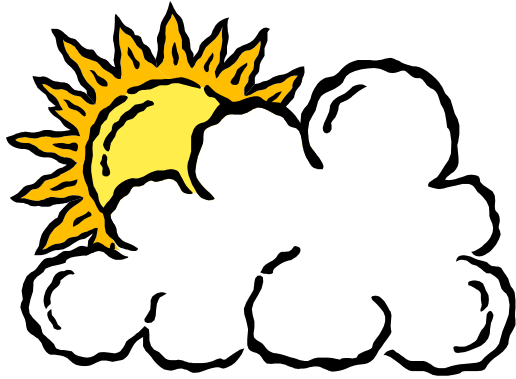
There are so many types of
Emergency and risk situations
facing us each day, it is a wonder
any of us get out of bed





How do we decide which risks are likely to become reality and in turn become occurrences which shall require our immediate attention; EMERGENCIES





Probability

How likely is the risk that it shall become REALITY

Criticality

What impact would the REALITY have on the organisation



Risk Prioritisation

Description of risk	Probability Factor	Criticality Factor			Resources		Total
		Human	Property	Commercial	Internal	External	
	High or Low	High impact<	> Low impact	Week<	>Strong		
Slips & falls	4	5	1	2	1	2	44
Lightening - fire	1	1	5	5	1	2	14
Electrical - fire	2	2	3	2	1	2	20



Step 1.

Identify the risk - and be specific
*enter the identified risks in the
"Description of risk" column*

Step 2.

Consider the risk of the
probability becoming reality
*place a number from 1 (unlikely)
to 5 (very likely) in the
"Probability Factor" column*

Step 3.

Criticality - A measure of the impact on the organisation

measured in terms of:

- *Human*
- *Property*
- *Commercial*

place 1~5 in each of the criticality columns

Step 4.

Consider the **ability** and **quality** of both internal and external resources which may be required to minimise the risk

*place a number from 1 to 5 in each of the "Resources" columns
an assessment of "1" indicates that existing resources are in place or readily available.*

Step 5.

Totals -

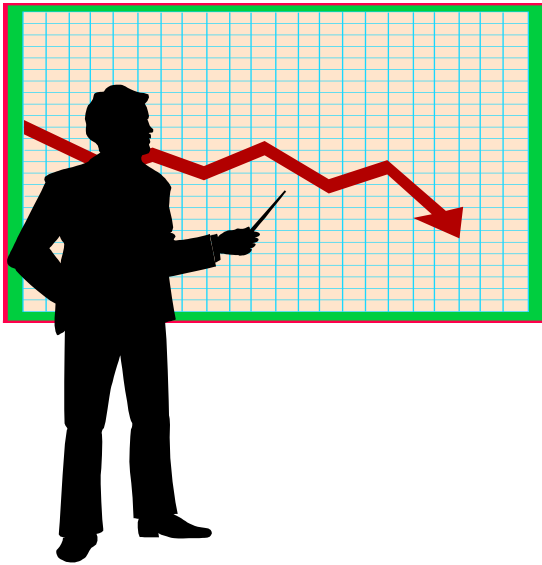
- 1. Add the three criticality columns together
- 2. Add the two resources columns together
- 3. Multiply the probability factor by the sum of the criticality factor
- 4. Multiply the probability/criticality result by the total of the resources columns

$$\frac{\text{Probability}}{n} \times \frac{\text{Criticality}}{n+n+n} \times \frac{\text{Resources}}{n+n} =$$

Risk Factor

Risk Prioritisation

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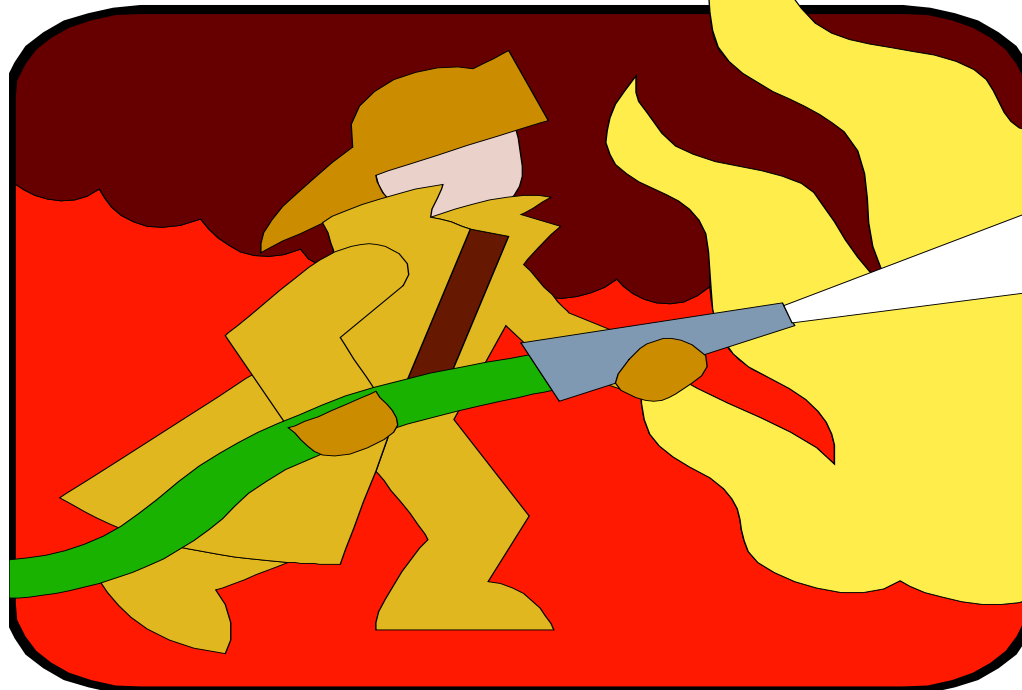
The “risk factor” is used to decide those risk areas that require your immediate and urgent attention and resource allocation. As well as those risks which may be deferred to a more appropriate time.

It is usual “Risk Management Practice” to set an arbitrary risk factor value, at which point further risk analysis and planning is ignored.

The Risk Factor will change as conditions change
Therefore the calculation should be reviewed regularly



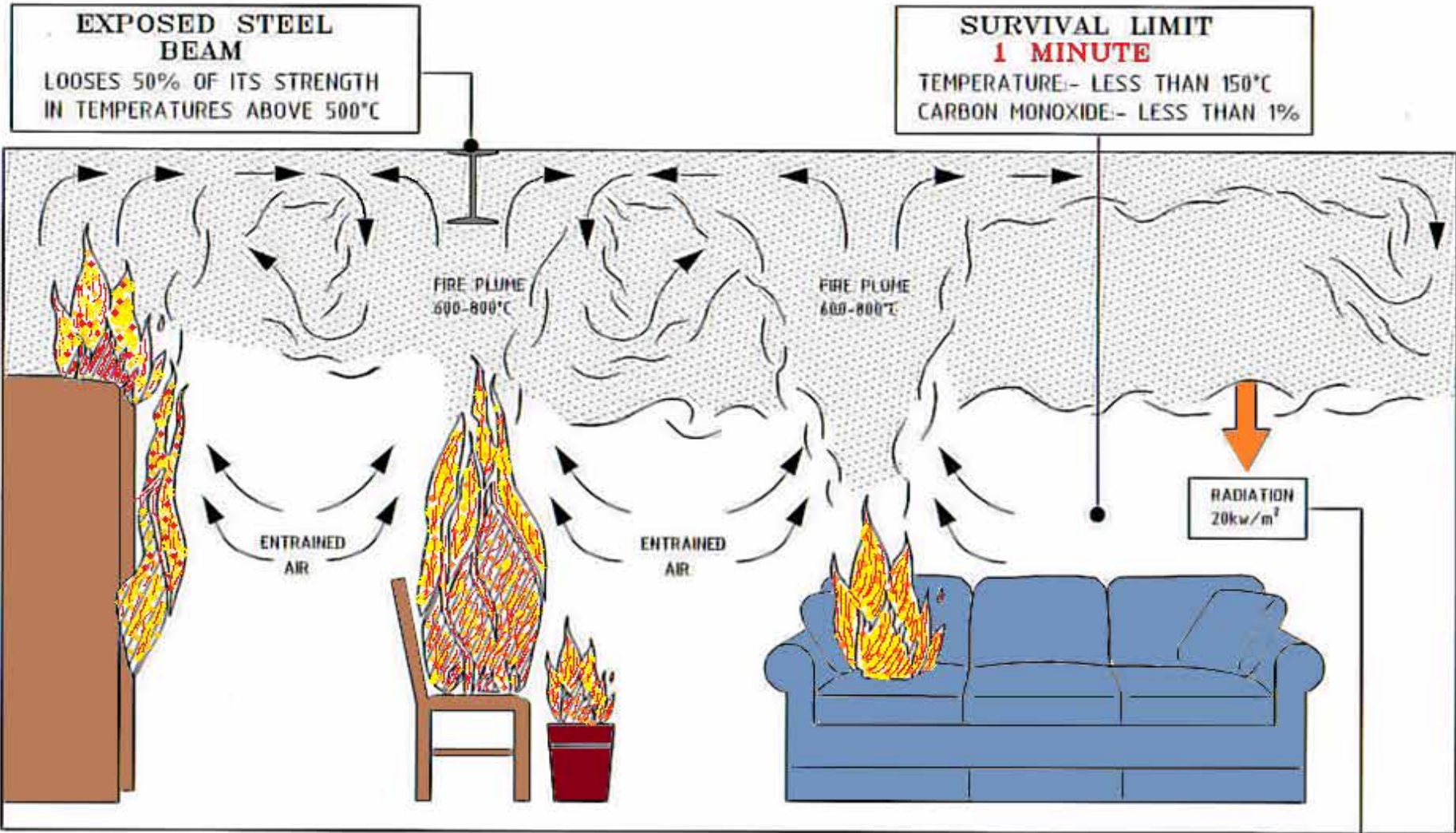
**FIRE is the most probable
of risks to become a reality**



NSW Fire & Rescue, responds to over 1 Thousand Fire Calls each day.

Burning room demonstration





EXPOSED STEEL BEAM
 LOOSES 50% OF ITS STRENGTH
 IN TEMPERATURES ABOVE 500°C

**SURVIVAL LIMIT
 1 MINUTE**
 TEMPERATURE:- LESS THAN 150°C
 CARBON MONOXIDE:- LESS THAN 1%

FIRE PLUME
 600-800°C

FIRE PLUME
 600-800°C

ENTRAINED
 AIR

ENTRAINED
 AIR

RADIATION
 20kw/m²

BURNING WARDROBE
 HEAT OUTPUT
 3500kw

BURNING CHAIR
 HEAT OUTPUT
 600kw

**BURNING WASTE
 PAPER BIN**
 HEAT OUTPUT
 170kw

BURNING PILLOW
 HEAT OUTPUT
 117kw

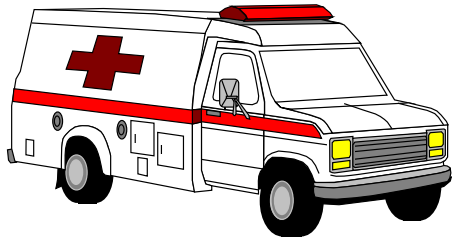
**THE SUN'S RADIATION
 AT 12 O'CLOCK NOON**
 0.5kw/m²

**TYPICAL HEAT OUTPUT
 FOR 1 BAR RADIANT
 HEATER.....1.0kw**

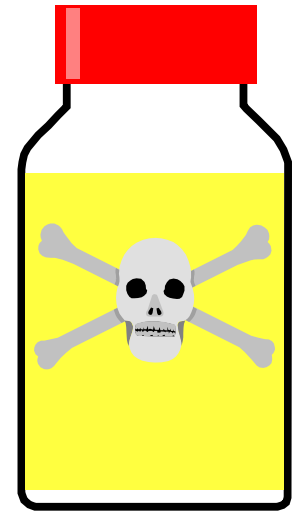
Ref :- Drysdale -
 'Fire Dynamics'

From original design by:
 Olsrud & Co - Professional Engineering Solutions P/L
 Revised and updated and copyright by
NEW DIRECTIONS IN BUILDING SERVICES / FIRE ASSESS
 JAN 2008 / 180 011 PO Box 115 Scone NSW 2384

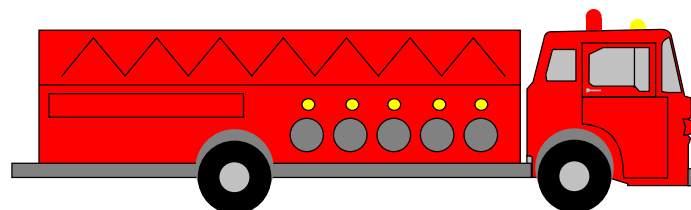
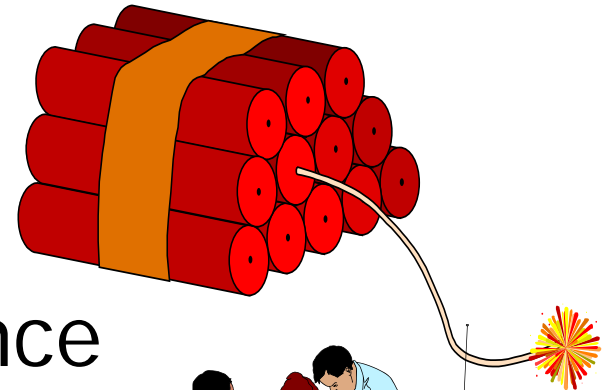




For what risks is an Emergency Evacuation Appropriate



- Fire
- Bomb Threat
- Earthquake
- Civil Disturbance
- Hazmat Incident

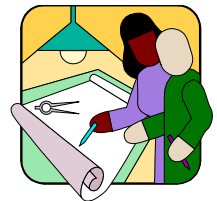
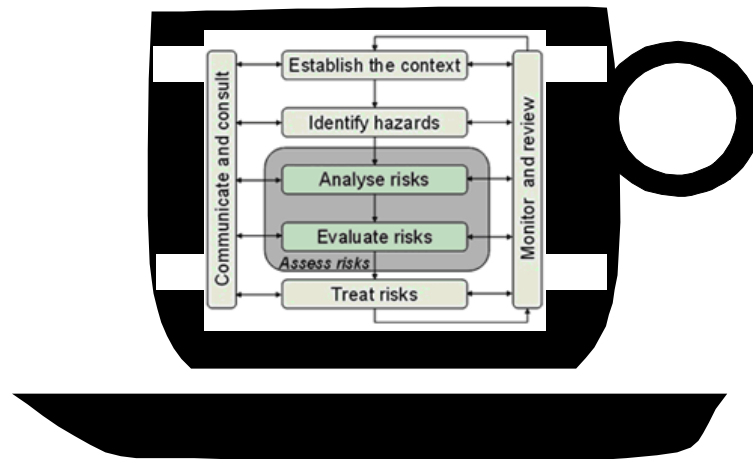


In NSW, the Environmental Planning & Assessment Act & Regulations require:
That Building Owners and Building Controllers ensure that every installed fire safety measure is maintained such that it shall perform at not less than that performance required when it was originally installed.

For regulated buildings (buildings other than detached family single dwellings and sheds), an annual assessment **must** be physically conducted by an accredited practitioner fire safety who is accredited to assess that particular measure and attest to performance on the building owner submitted annual fire safety statement. A copy of that statement must be displayed prominently at the building.



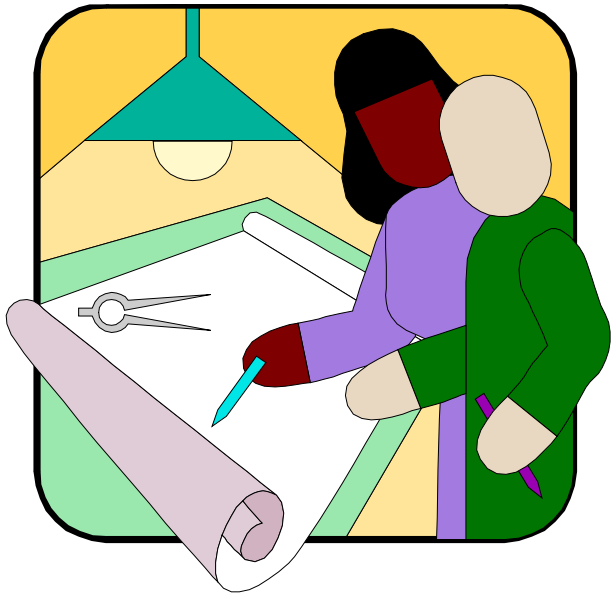
Morning Coffee



Session 2

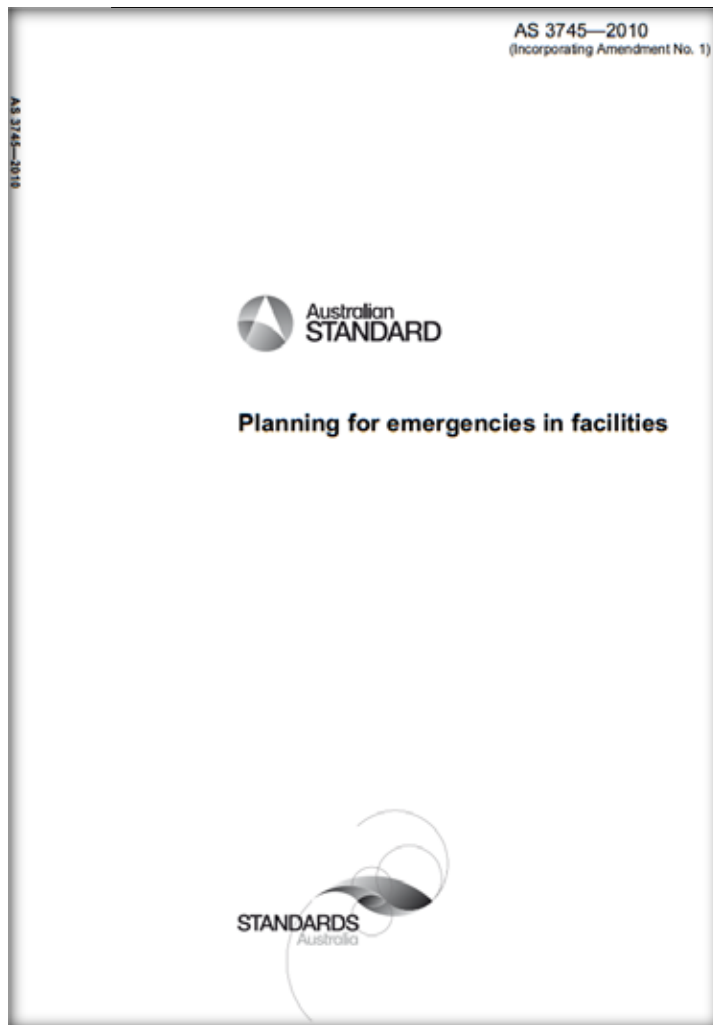


Emergency Evacuation Planning



The purpose of Emergency Evacuation Procedures is to safely and efficiently remove the occupants of a building to safety.

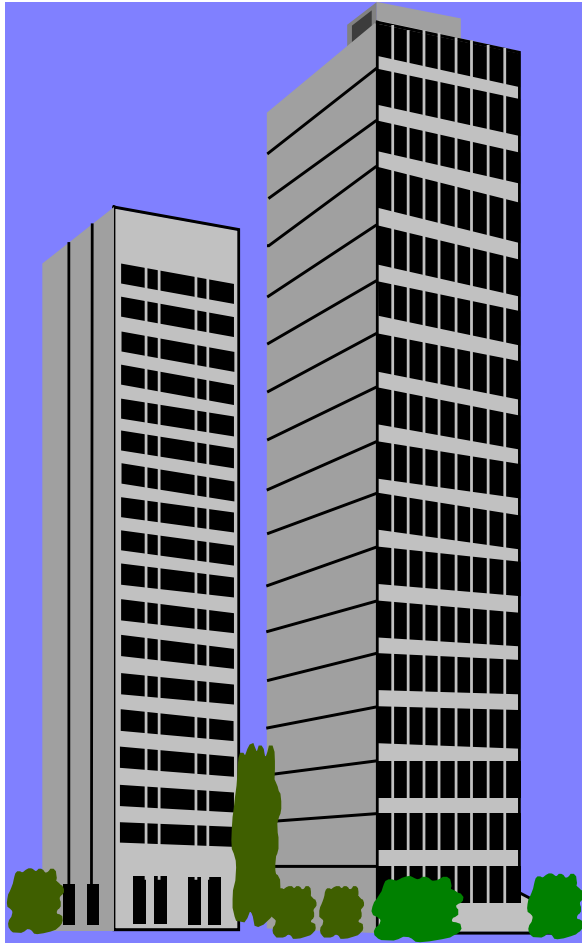




Australian Standard 3745-2010 Planning for emergencies in facilities

A building emergency can develop from a number of causes: fire, bomb-threat, structural fault or failure, leakage of gas or chemicals, civil disorder, earthquake and other causes.

The Work Health and Safety Act & Regulations



Employers must ensure the health, safety and welfare of their employees. Things that employers must do to ensure this include “maintaining places of work under their control in a safe condition inclusive of the provision of safe entrances and exits” .

Employers must ensure the health and safety of people visiting these places of work and who are not their employees

Employees must take reasonable care of the health and safety of others

Employees must co-operate with employers in their efforts to comply with WH&S requirement



There is a Duty of Care in Common Law which applies to the care that you need to show others. Almost anyone coming onto a property may be considered (under law) your neighbour.

Training Competency Standard for Fire Response Training

The standard provides guidelines for the content of training supplied to members of the emergency control organisation



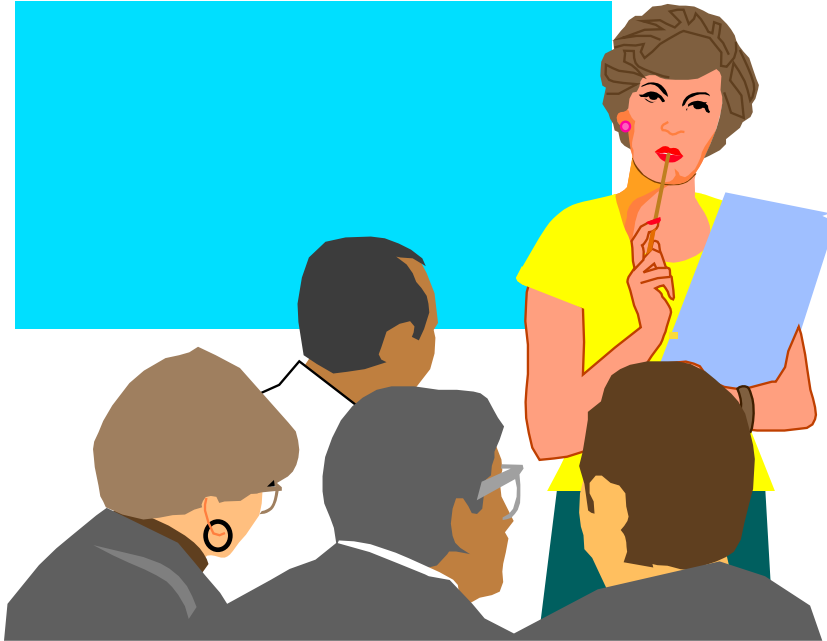
The Emergency Evacuation Plan should meet or exceed the AS3745-2010 requirements and meet legal and moral obligations

Compliance should be the Motivation Not the Objective

The object of Evacuation is to get everyone out safely and efficiently.



Safe Assembly Areas are Allocated



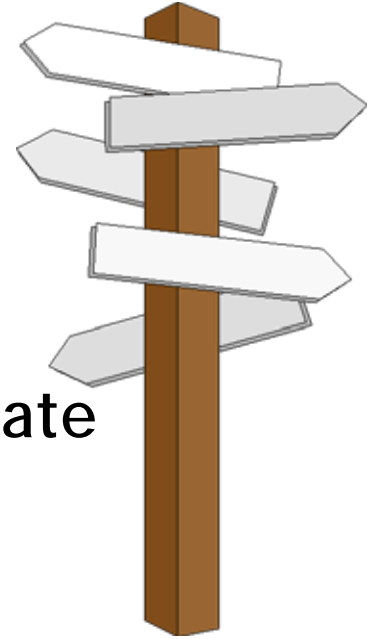
Each Assembly Area has
an Assembly Area Warden
(preferably a member of Staff)

Training of Staff
Undertaken
(duty of employer)

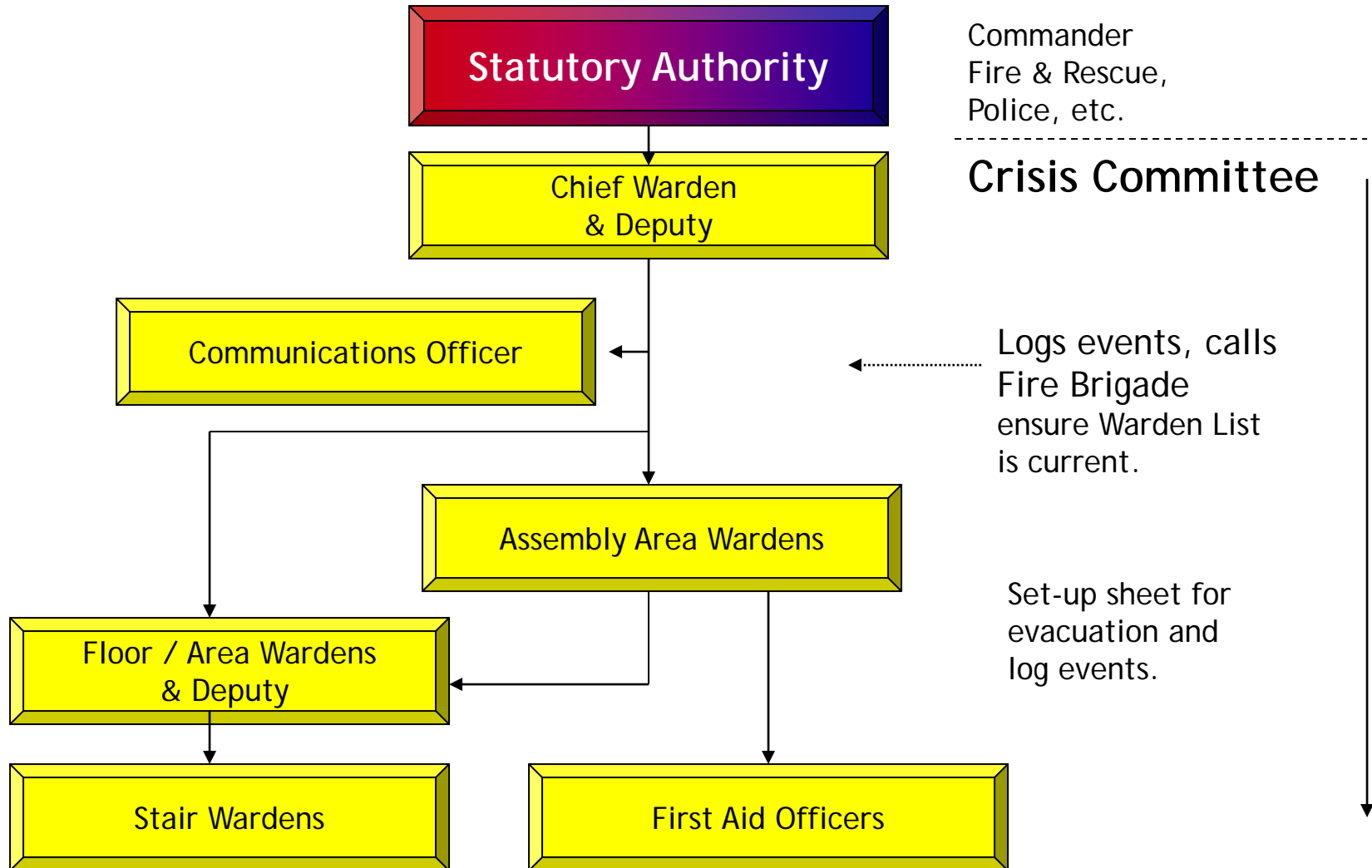


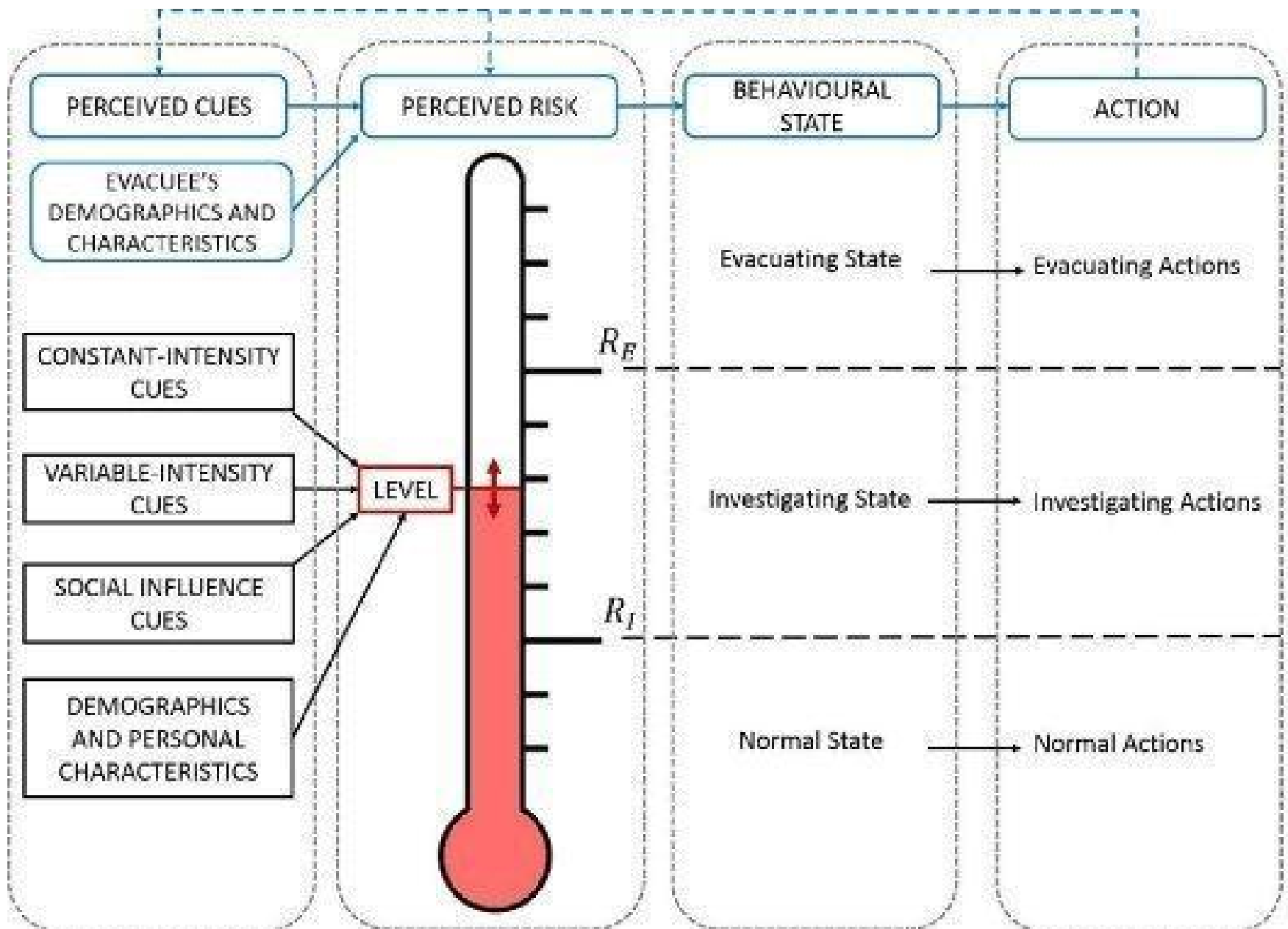
Assembly Area

- Signposted
- Safe from shattering glass
- >300 metres safe distance
- away from emergency services vehicles
- Assembly Area Warden able to communicate with the Chief Warden



Building Emergency Control Organisation





Considerations

“A committee is an animal with four hind legs” - John LeCarre

“A camel is a horse designed by a committee” - John R. Thompson



“Keep It Short & Simple” [KISS] - John R. Thompson

Considerations

The right people on the committee

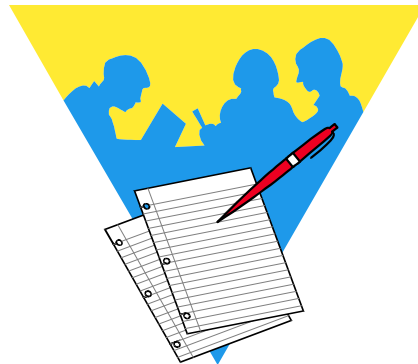
A team approach:

Encourage participation and get more people invested in the process

Enhance the visibility and stature of the planning process

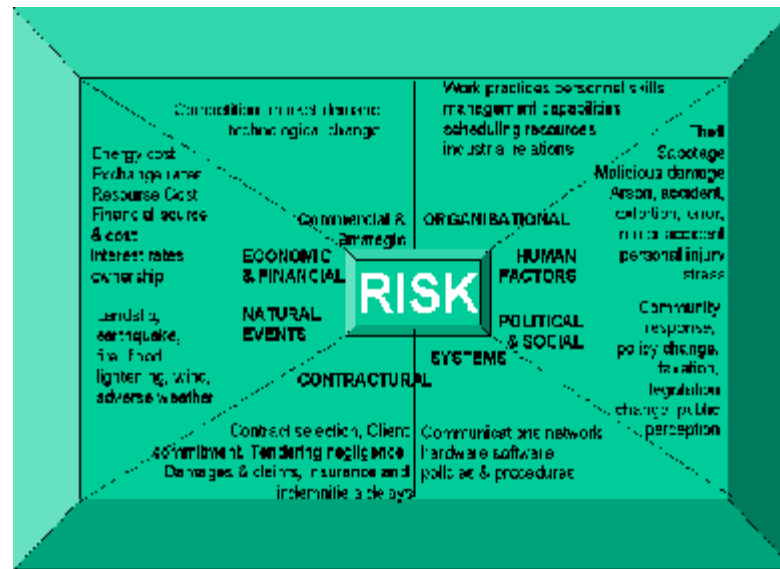
Provide a broad perspective on the issues of responsibilities

Allow specialist knowledge to be imported



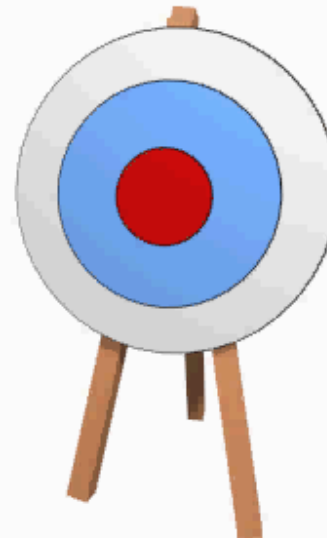
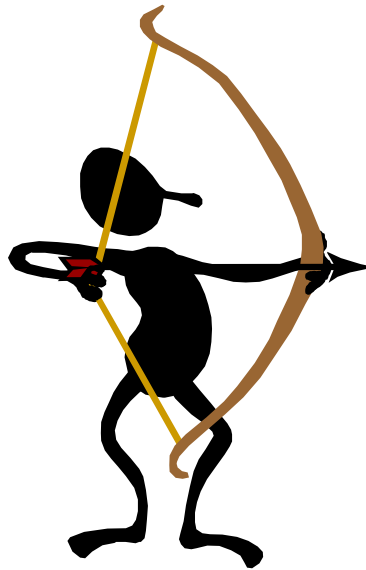
Four steps of the Planning Process

2. Identify and prioritise risks



Four steps of the Planning Process

3. Develop the plan



Considerations

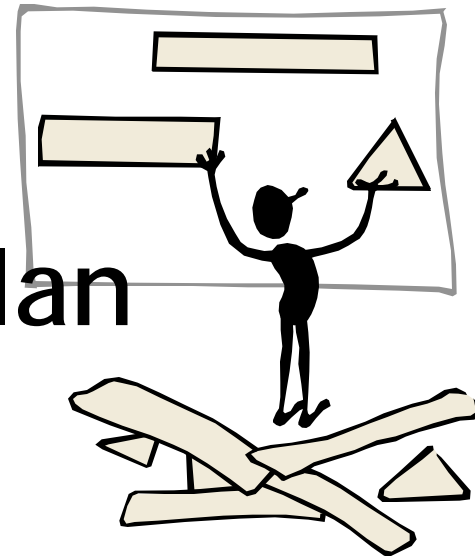
“Everything should be made as simple as possible, but no simpler.”

Albert Einstein

- 1) Put the plan simply ...
- 2) No long, clever words for their own sake.
- 3) Plain, simple, straightforward, vanilla flavoured - common sense.

Four steps of the Planning Process

4. Implement the plan
(Test the plan)



Considerations

- 1) Define the duties of ECO members
Emergency Control Organisation
- 2) Establish procedures for each position
- 3) Prepare checklists for all procedures
- 4) Define lines of succession
- 5) Determine equipment and supply needs for each function
Cater for peoples comfort at evacuation areas

Considerations

Communications

Consider specific communications systems required in emergency situations, for example BOWS, Megaphone, Cellular Phones, portable radio transceivers, PABX, intranet, e-mail, internet, etc.

This facility may have unique systems that could be used to advantage.

Considerations

Life Safety

Protecting the life and safety of everyone within the organisation is the **first** priority during an emergency

Considerations

Property Protection

Procedures may need to address
Fighting fires, containing material spills,
shutting down equipment, moving equipment
to other locations, and a myriad of other
contingencies included within the plan.

Considerations

Automatic detection and
suppression systems, etc.
should be considered

Balance compliance with common sense!

Considerations

Community Outreach


Consider how the community
may help you and vice versa

Recovery and restoration

Considerations

Administration and Logistics

- 1) Written plan
- 2) Training records
- 3) Documenting drills and exercises
- 4) Involving others in the planning process
- 5) Acquisition and stockpiling of required equipment



**The Process will
never come to
an end!!!!!!!**



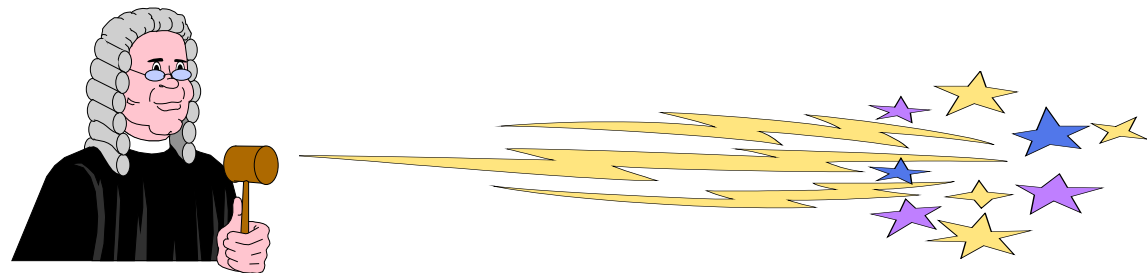
Duties of Chief Warden

Co-ordinate the activities of the emergency control organisation

Objective of ECO

Consensus

Responsibilities and Power of the ECO



Duties of Chief Warden

Co-operate with
emergency services
and statutory authorities

- Role of emergency services
- Information
- Training of ECO

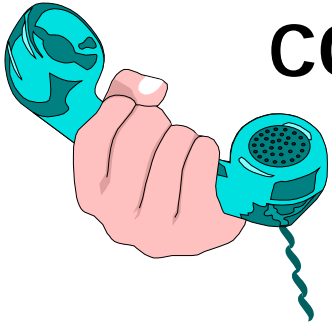
Duties of Chief Warden

Contribute to the training of the emergency control organisation

- Identify training needs
- Evacuation exercises
- Maintenance of Warden registry
- First Aiders registry
- have Working With Children accreditation register .

Duties of Chief Warden

Ensure that emergency communications equipment is operated and tested

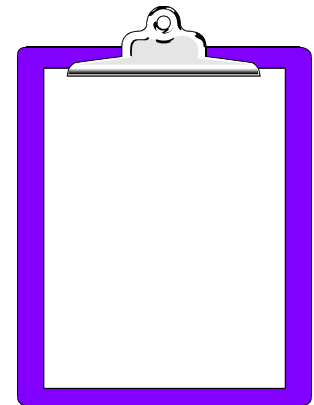


- Occupant Warning System monthly test
- Wardens verify operation
- Consider language / paralanguage

Duties of Chief Warden

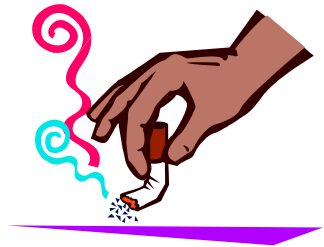
Ensure that emergency signals and reports are correctly initiated or identified

- Assessment and action



Duties of Chief Warden

Anticipate the behaviour and characteristics of typical workplace emergencies.



- Gather information
- Informed decisions



Duties of Chief Warden

Ensure that special arrangements are made for the safe evacuation of mobility impaired people.

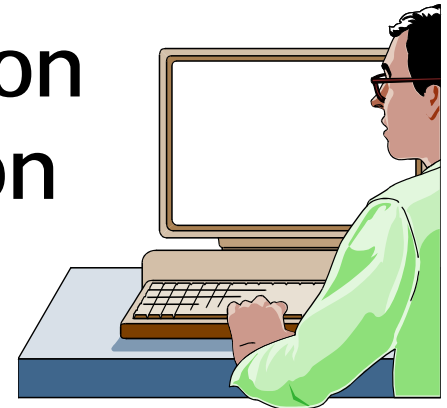
- Prior Incident
- Equipment & training



Duties of Chief Warden

Co-ordinate reports of the results of evacuation.

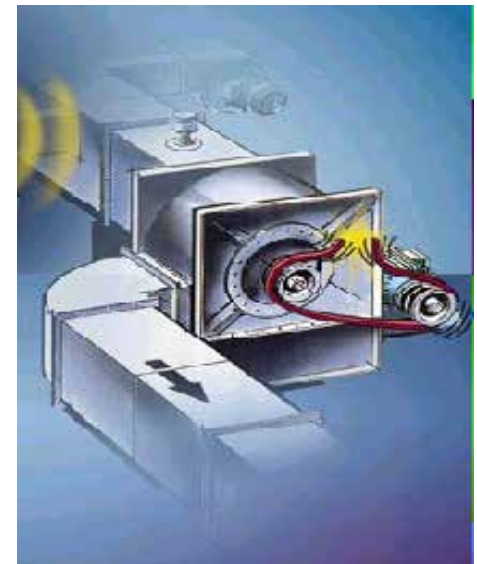
- Recording information
- Analysing information



Duties of Chief Warden

Ensure that routine maintenance of emergency equipment is carried out.

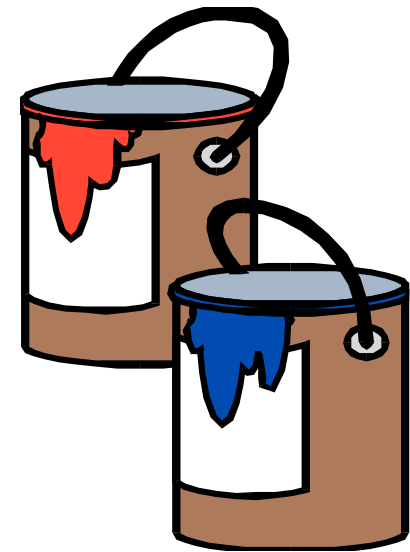
- Remedy and replace as required



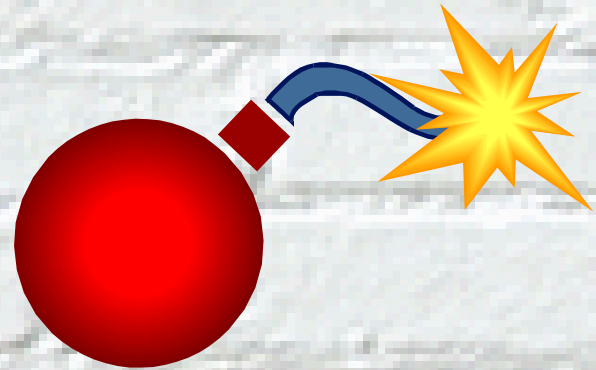
Duties of Chief Warden

Ensure that prevention inspections are conducted

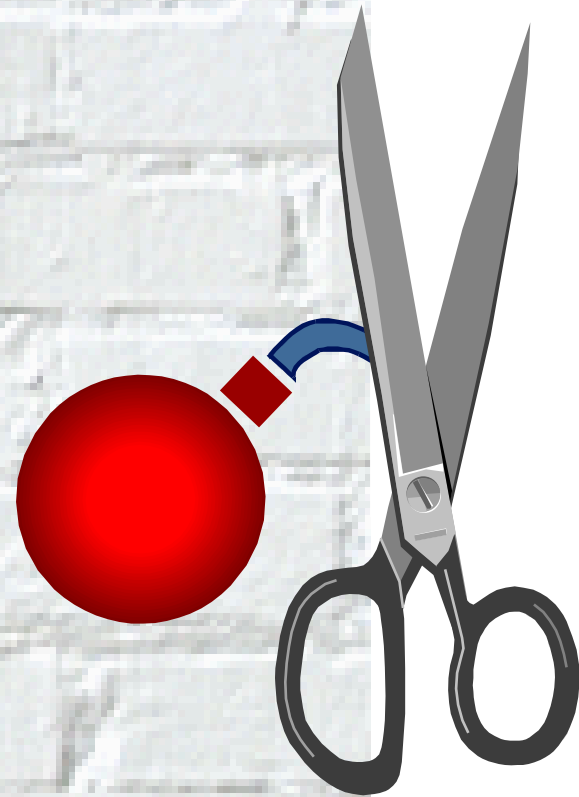
- Hazard spotting
- Response



Bomb threat



Bomb Threat Strategy



FIRST POINT OF CALL - POLICE via "000"

The role of the Warden

Yellow hats & vests for all Wardens

When the fire alarm is activated

- You will either hear a BEEP-BEEP tone (the get ready to evacuate signal) OR
- You will have physical evidence of fire
 - 1) Collect your helmet (inside find the laminated instruction card)
 - 2) Direct the people to the fire exits, use “move directly this way”
 - 3) Communicate with the Chief Warden or Fire Officer
be patient as the intercom system probably has many callers.

The role of the Warden

Yellow hats & vests for all Wardens

The Chief Warden will broadcast from the Public Address System (BOWS) to Help you.

Use full flowing gestures when directing people

Be confident, Act as though you are fully in control

Be aware of the mobility impaired and

Deputise others to care for the mobility impaired

Hold in safe havens if required

Use special equipment.

The role of the Warden

Yellow hats & vests for all Wardens

Systematically search the area

Pay particular attention to storage areas and toilets

Check areas that are infrequently used

Be aware of those with special needs

When you have completed the search Advise the Chief Warden that the area is clear.

Communicate by:

Telephone, BOWS WIP, send a messenger, go yourself,
report to the Assembly Area Warden

Say "*Kitchen Area Clear*"

The role of the Warden

Yellow hats & vests for all Wardens

Before the emergency

Make sure you know your role

Make sure you have your hat, vest & torch

Know your search area

Report hazards and equipment problems

Know the occupants



Know your Assembly Area Warden and Chief Warden

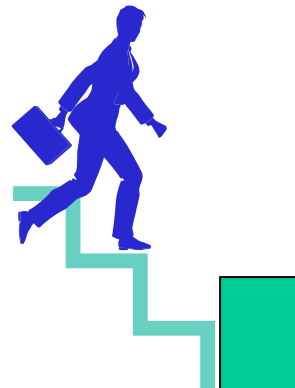
Know your stair/area wardens and deputy

Know what to do with the mobility impaired



An efficient evacuation will not occur if:

Furniture and other items are placed in corridors slowing down the rate of evacuation



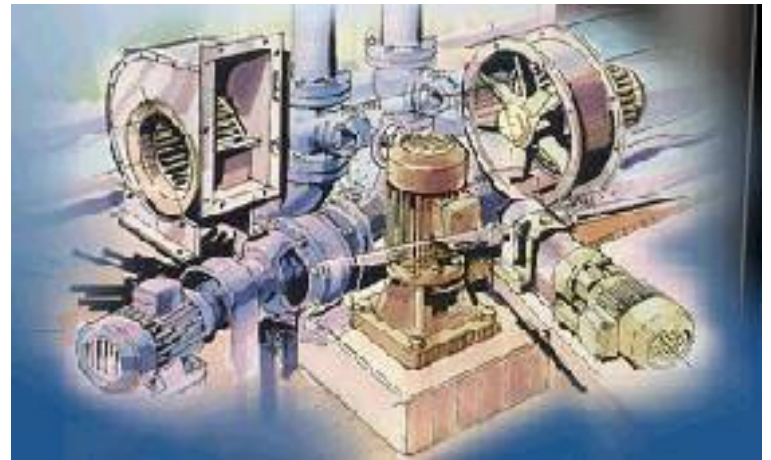
Many fires in the workplace are
the result of **Bad Housekeeping:**

Rubbish or
Combustibles
incorrectly
stored!



Many fires in the workplace are
the result of Bad Housekeeping:

Overload
or faulty
electrical
equipment!



An efficient evacuation will not occur if:

Fire doors are
locked or
obstructed!



Hazards:

Rubbish or stock in passageways

Rubbish or stock on fire stairs

Rubbish or stock obstructing services

- Electrical distribution boards
- Fire extinguishers
- Emergency exits
- paths of travel



Hazards:

Locked emergency exits

Propped open emergency exits

Power overload, piggyback plugs

Electrical cord across walkway

Electrical cord twisted in knot

Fire extinguishers not serviced

6-monthly service (check tag)



Rules for good housekeeping:

Keep **fire exits** clear at all times

Keep **fire doors** unlocked from the occupied space at all times

Ensure correct quantities, storage and labelling of **chemicals**

Maintain a register of **hazards** at the fire control area

Ensure proper and safe disposal of rubbish and waste

Ensure regular maintenance of electrical equipment

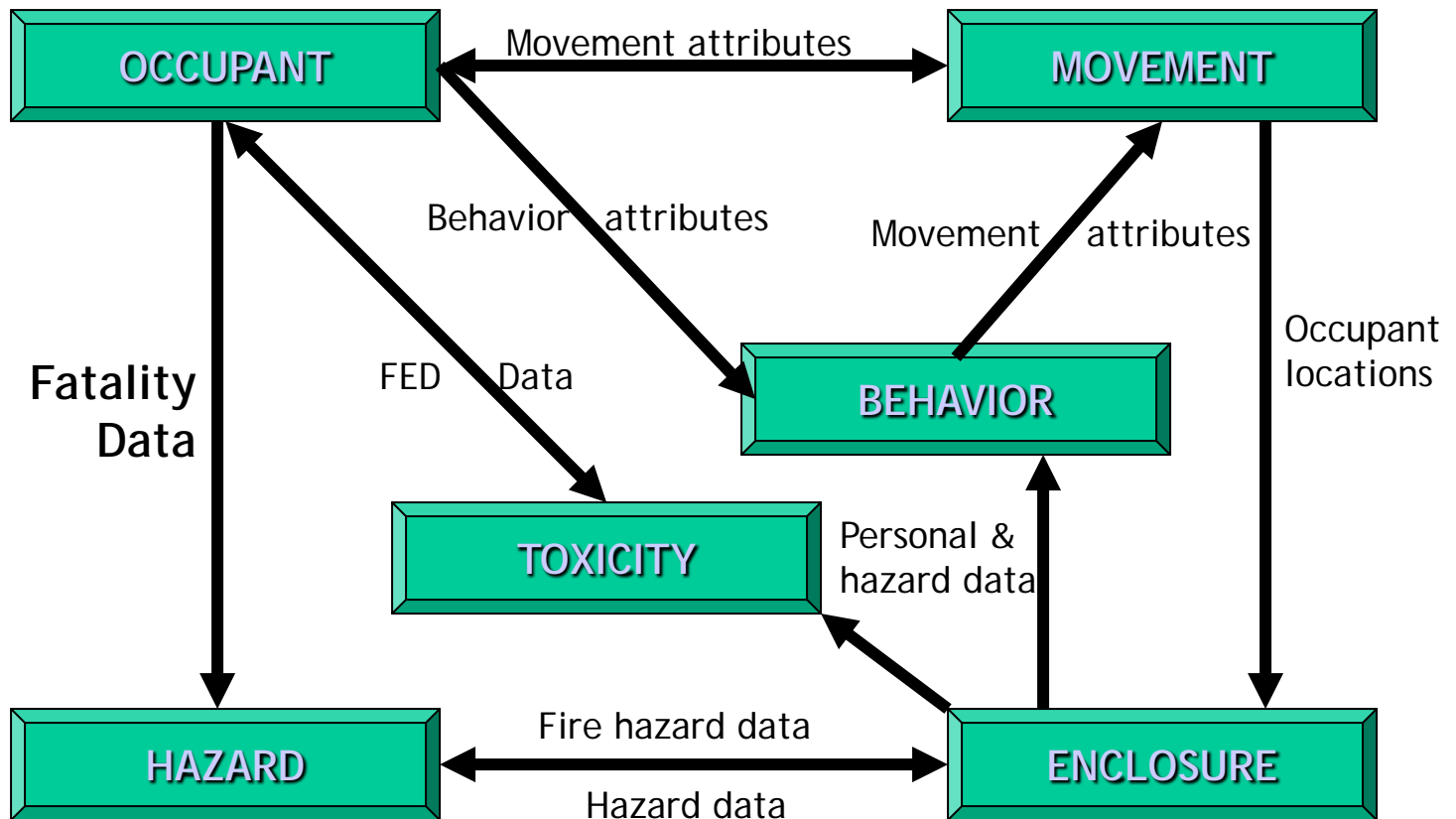
Enforce NO SMOKING policies

Ensure that fitouts are fully compliant

Ensure all stock and equipment is stored and handled in an appropriate manner so as not to obstruct passageways

Stowed materials should not obstruct any fire sprinklers (<500mm clear below sprinkler)

How do people react to an emergency



In an emergency

15% Do the **RIGHT** thing!

5% Do the **WRONG** thing!

80% **COPY** the behaviour of those around them!



The purpose of Emergency Evacuation Procedures is to safely and efficiently remove the occupants of the building to safety.



Personal Emergency Evacuation Plans (PEEP)



Get everyone out!





Check out the other services that we provide:

Fire Engineering

PO Box 115 Boolaroo NSW 2284 Australia

Ph. (02)9594-4477

Ian Mob.0414-472-042

Alex Mob.0413-416-811

www.fireassess.com.au e-mail ndibs@ndibs.com.au

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