FIRE WARDEN TRAINING COURSE
Office of Safety, Health & Environment
Course Objectives

At the end of the course, participants will be able to:

• Understand the role of Fire Warden
• Carry out in-house fire risk assessment
• Identify the workplace fire protection system and fire fighting equipment
• Take appropriate action in the event of fire
• Understand the workplace evacuation procedures and fire emergency plan
Scope

- Introduction
- Building’s Fire Safety System
- Fire Risk Assessment
- Introduction to Fire Emergency Plan
- Basic Rescue Technique w/o Equipment
“Ablaze but no fatalities”
*The Times, May 2006*

“SCDF praised the management of University Cultural Centre for safely evacuating 500 peoples within four minutes. A former Director of National Fire Prevention Association said that adequate fire safety training had helped to make this safe evacuation a reality.”

“University prosecuted for breaches”
*The Fire Prevention Journal, May 2006*

“A university in Singapore has recently been successfully prosecuted after fire inspections revealed serious breaches of fire safety legislation. Lack of staff fire safety training was cited as one of the breaches”
What is an Emergency?

- Deliberate act of destruction
What is an Emergency?

• Chemical Threat
What is an Emergency?

Bomb Threat

There is a bomb in your building on Level 3. Do not leave the building or it will explode.
What is an Emergency?

- Fire
What is an Emergency?

A serious situation or occurrence that happens unexpectedly and demands immediate action.
NUS Campus Map

[Map of NUS Campus showing various buildings and departments]

- 104 departments in 90 buildings
- Covers a campus area of 150 hectares

300 Football Fields
Why do we need Fire Wardens?

- Generally, safety is taken for granted in our work environment.
- The presence of fire extinguishers, hoses, fire detectors, alarm bells and “break glass” manual call point can make people complacent about the possibility of fire or other emergency.
- However, emergencies **DO** occur and often there are only moments to decide what to do.
- Deadly smoke or fumes can quickly spread to cut off escape routes.
- Fire wardens make significant contribution to the safety of their environment and provide direction to building occupants in the event of a fire or other emergency.
Who are the Fire Wardens?

• Act as the Fire safety & Emergency preparedness contact/liaison officer for his/her respective department or area
• Recognized as people with leadership qualities in the event of a building fire alarm activation or other emergency
• Integral resources to the Fire Safety Coordinator and other emergency responders
• Due to the size and complexity of the University, we rely on the conscientious efforts of Fire Wardens to assist with the fire safety on a daily basis
Basic Duties of the Fire Warden

• Assessing fire risks
• Spotting and reporting hazards
• Taking appropriate action in the event of fire
• Being trained to fight a fire safely in its early stages
• Playing a leading part in fire drills
• Ensuring safe evacuation of staffs/students in the event of a fire
Building's Fire Safety System
Type of Buildings in NUS
Building’s Fire Safety System

- Smoke / Heat Detector
- “Break glass” Manual Call Point
- Main / Sub Alarm Panel
- Passenger / Firemen Lift
- Exit Staircase
- Fire Door
- Sprinkler
Smoke / Heat Detector

Smoke Detector

Heat Detector

Combination Smoke & Heat Detector
Photo Electric Detectors

A Light source
B Photo-detector
“Break Glass” Manual Call Point
Manual / Sub Alarm Panel

Sub Alarm Panel & Mimic Panel

Main Alarm Panel
Exit Staircase

- Exit staircase
- Discharge at ground level

Section
Fire Door

- Fire Retardant Composition Rail
- Mineral Core
- Fire Retardant 2-Ply Stile
- Crossband
- Wood Veneer Face
- Rail
- Partical Board Core
- Two-Ply Stile
- High Pressure Decorative Laminate (HPL) Face
Sprinkler

Figure B
ILLUSTRATIVE PHOTO OF A GB SPRINKLER WITH DISC SPRING SEAL AT WATERWAY OUTLET (NOTE THE CONICAL SHAPE OF INTERIOR CAP)
Staircase numbering
ESCAPE ROUTES

- No Obstruction
- Exit & directional signs
- Door release device
General

- Nozzle condition satisfactory
- Clear of obstruction
- Labeling provided for cabinet
- Length of hose not more than 30m
PORTABLE FIRE EXTINGUISHER

- Properly hung on bracket
- Date of service
- Clear of obstruction
- Bear PSB/SISIR label
Fire Risk Assessment
Department starts to assess fire safety in workplace

Head of Department appoints staff to carry out assessment

Plan and prepare for carrying out assessment

Step 1 : Identify Fire Hazard

Step 2 : Identify the location of people at risk

Step 3 : Evaluate the risk

Step 4 : Assign risk category

Step 5 : Record finding and action taken

Step 6 : Keep assessment under review
Step 1: Identify Hazards

- Identify the hazards entail noting the possible sources of heat that is hot enough to ignite material
  - Naked flame
  - Hot processes
  - Engines
  - Machinery
  - Faulty electrical equipment
  - Hot surfaces

- Identify possible sources of fuel
  - Flammable liquid
  - Flammable chemicals
  - Flammable gases
  - Any sources of fuel
Step 2: Identify the People at Risk

- Identify people who could be at risk in a fire and who may be present in large number
  - Lecture Theatre
  - Auditorium
- Identify people who are unfamiliar with the layout of the workplace
  - Visitors
  - Outside contractor
- Identify people who would be unable to react quickly enough
  - Disabled
  - Pregnant
  - Children
Step 3: Evaluate the Risk

- Removal or reduction of hazards through risk evaluation can have enormous benefits
- Should be considered whether any of these reductions are to be undertaken:
  - Immediately
  - In the medium term
  - In the long term
Step 4: Assign the Risk Category

On completion of Step 3, depending upon what hazards still remain, a fire risk category should be assigned to the workplace.

**Low**: Where the amount of combustibles or flammable liquid present is such that fires of small size may be expected. Virtually no source of heat. Example: Offices, classrooms, assembly hall and residence halls.

**Medium**: Where the amount of combustibles present is such that fires of moderate size may be expected. Fire likely to remain confined or spread but slowly. Example: Storage and display areas, motor showroom, shopping areas, commercial kitchen.

**High Hazard**: Where the amount of combustibles present is such that fires of severe magnitude may be expected. Serious risk to life from fire. Exist the likelihood of rapid spread of fire. Example: Furniture showrooms, aircraft hangars, vehicle repair workshops, chemical labs.
Step 5: **Record Findings and Actions Taken**

- Record the findings. Should include:
  - Significant hazards found
  - Details of any staff who are especially at risk
  - Date on which the assessment was made
Step 6: **Keep Assessment under Review**

- Fire Risk Assessment should be kept under reviewed regularly or whenever there are changes in the workplace such as:
  - New substances
  - Increased in number of people present
  - Changes in work process
Common Type of Fire Hazards

- Illegal addition & alteration
- Overcrowding
- Non-maintenance of fire safety measures
- Obstruction of means of escape
Problem associated with obstruction of escape routes

- Impedes the smooth flow of people during evacuation
- Obscures / Obstructs exit and exit directional signs
- Increases the risk of fire spread
Spot the Hazard
Spot the Hazard
Spot the Hazard
Spot the Hazard
Spot the Hazard
Spot the Hazard
Spot the Hazard
Spot the Hazard
Spot the Hazard
Spot the Hazard
Spot the Hazard
Abatement of Fire Hazard

Report to OSHE

– Notice of Abatement
– Bill Expenses
– Closure
Introduction to Fire Emergency Plan
Learning Objectives

• Able to explain the need of FEP
• Able to explain the fundamental requirements for the formation of a Fire Safety Committee
SCOPE

• Introduction
• Fire Emergency Plan (FEP)
• Guidelines for FEP
• Action to be taken in the event of fire
• Fire Safety Committee
• General Pointers
What is a Fire Emergency Plan?
A plan which contains information on types of fire safety measures that are provided for in designated premises & includes floor layout plans & evacuation procedures
Requirements of a Fire Emergency Plan

• Prepare in accordance with guidelines
• Form a Fire Safety Committee to assist to plan, organize & conduct fire safety program
• FEP kept at Forward Command Post or other place easily available
Why organize for fire emergencies?

- Dangerous operational practices
- Combustible & smoke producing materials
- Indecisive, delay & lack of responsibilities
Fire Emergency Plan is required to:

- avoid panic
- evacuate safely and orderly
- tackle incipient fires with first aid fire-fighting equipment
- provide good information and assistance to fire fighting crews
- effect timely protection of machineries and property
Guidelines for FEP

- Low rise bldg < 8 storey (exclude departmental stores, supermarkets, emporiums & hotels)
- Departmental stores, supermarkets, emporiums, hotels (30 storey & below) & high rise commercial building (8 - 30 storey)
- Commercial high rise bldg (> 30 storey)
- Industrial premises
Contents of FEP

- Objective
- Action to be taken in event of an outbreak of fire
- Fire occurring outside office hours
- Duties & Responsibilities
- External emergency support
- Fire Evacuation Drill
- Classification of Emergencies
- General
- Appendices
Fire Safety Committee

- Campus Security
- Telephone Operator
- Fire Fighting Team
- Building Coordinator (1 for each building)
- Floor Warden (1 for each floor)

Staffs
Students
Visitors
Taking appropriate action in the event of a fire

Fire Alarm: Saviour or Villain?

Imagine a warm Wednesday afternoon in the tutorial room when the fire alarm suddenly came to life. Many heads suddenly peeks out of the tutorial room to see if anyone is doing anything to shut off the noisy culprit! You are not the minority if you assume that all fire alarms are 99.9% false. However, statistics have shown that the figures are much lower and it doesn’t pay to make this assumption. Be safe.. Evacuate when you hear the alarm… it could be your last call if you choose to ignore it!
Fire Alarm

- Call-point
- Detectors
- Sprinkler
Fire Evacuation

• < 8 storey
  – a single stage alarm
  – evacuate immediately
  – total evacuation upon hearing the alarm
## Fire Evacuation

<table>
<thead>
<tr>
<th>Floor</th>
<th>1st Floor</th>
<th>2nd Floor</th>
<th>3rd Floor</th>
<th>4th Floor</th>
<th>5th Floor (Fire Floor)</th>
<th>6th Floor</th>
<th>7th Floor</th>
</tr>
</thead>
</table>

- Total Evac upon 1st alarm
- < 8-storeys
Fire Evacuation

• > 8-storey & < 30-storey
  – 2 stage alarm
  – 1st alarm - alert signal for total evacuation
  – 2nd alarm - commence evacuation
# Fire Evacuation

<table>
<thead>
<tr>
<th>Floor</th>
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<tbody>
<tr>
<td>29th Floor</td>
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<tr>
<td>28th Floor</td>
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<tr>
<td>27th Floor (Fire Floor)</td>
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<tr>
<td>26th Floor</td>
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<tr>
<td>25th Floor</td>
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<tr>
<td>24th Floor</td>
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<tr>
<td>23rd Floor</td>
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<tr>
<td>1st – 22nd Floors</td>
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</tbody>
</table>

- Total Evac upon 2nd alarm
- > 8-storeys & < 30-storeys
Action to be taken upon activation of fire alarm
Action to be taken upon hearing the fire alarm
(Single stage alarm)

Coordinator/Asst

- Proceed to Fire Main Alarm Panel
- Alert Campus Security the activation of fire alarm immediately
- Alert SCDF when fire situation is confirmed
- Proceed to Assembly Area and obtain floor evacuation status reports from Fire Wardens
- Await for arrival of Campus Security & SCDF.
Fire Warden/Asst

- Check sub alarm panel for location of fire
- Conduct physical check/verification of fire
- Report to Coordinator if fire on his floor & effect evacuation immediately
- Attempt to extinguish fire w/o taking personal risk
- Effect evacuation immediately
- Check all rooms & evacuate everyone on his floor
- Attention on disabled, children, pregnant women
- At Assembly Area, conduct roll call using floor register & handover to Coordinator
- Ensure that no one re-enters the building until it is safe to do so
Action to be taken upon hearing the fire alarm
(Two stage alarm)

Coordinator/Asst

- Proceed to Forward Command Post (FCP)
- Mobilize Fire Fighting Team (FFT)
- Isolate alarm bell
- Prepare text message
- Prepare to evacuate as specified in FEP
Action to be taken upon hearing the fire alarm (Two stage alarm)

Coordinator/Asst

• Announcement of Text 1

“Ladies & Gentlemen, your attention, please. The fire alarm has been activated in the bldg. We are investigating the situation. Please remain calm & standby your speakers for further instruction. Thank you.”
Action to be taken upon hearing the fire alarm (Two stage alarm)

- Fire Warden (fire floor) investigates cause of alarm & report status
- Standby to receive status from FW/FFT

Coordinator/Asst
Action to be taken upon hearing the fire alarm (Two stage alarm)

Coordinator/Asst

If FFT reports situation under control

• Announcement of Text 2

“Ladies & Gentlemen, your attention, please. The emergency situation in the building is now under control. We regret any inconvenience caused. Thank you”
Action to be taken upon hearing the fire alarm
(Two stage alarm)

False alarm

- Announcement text

“Ladies & Gentlemen, your attention, please. We have investigated the situation and found it to be a false alarm. We regret for any inconvenience caused. Thank you”
Fire Warden/Asst

On hearing 1st stage alarm

- Check sub alarm panel
- Conduct physical check
- Prepare for evacuation if fire not on his floor
- Report to Coordinator if fire on his floor &
  effect evacuation immediately
Action to be taken in the event of fire

Fire Warden/Asst

On hearing evacuation announcement

• If fire not on his floor, prepare and alert everyone to evacuate using the nearest exit
• Check all rooms & evacuate everyone on his floor
• Attention on disabled, children, pregnant women
• At Assembly Area, conduct roll call using floor register & handover to Coordinator
• Ensure that no one re-enters the building until it is safe to do so
Building Evacuation Status Chart

Coordinator: ____________________________
Building: ______________________________

<table>
<thead>
<tr>
<th>Storey</th>
<th>Name of Fire Warden</th>
<th>Evacuation Status.</th>
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<tbody>
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<td>Not Cleared</td>
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# Action to be taken in the event of fire

## Fire Warden/Asst

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<th>Unit No.</th>
<th>Name of Occupants</th>
<th>Evacuation Status</th>
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Assembly Areas in NUS
Action to be taken in the event of fire

Campus Security / Asst

- At ground floor staircase exit, main entrance & exit
- Patrolling
- Direct SCDF to FCC
- Direct traffic
- Monitor status at AA & report to FCC
Fire Occurring Outside Office Hours

Campus Security

- Notify SCDF
- Notify Coordinator/Asst
- Fight fire without endangering self
- Interim Coordinator at Assembly Area
Duties & Responsibilities of Fire Safety Committee
COORDINATOR/ASST

- Represent management
- Establish Fire Safety Committee
- Training
- Prepare FEP
- Records date & time of drill conducted
I, the undersigned, designated as Coordinator of the fire drill held by _______________ (Name of premises) hereby certify that the facts shown on the line or lines herein below opposite my signature are correct & further that each drill was successfully conducted in full compliance with the approved Fire Emergency Plan.

<table>
<thead>
<tr>
<th>Date of Drill</th>
<th>Time</th>
<th>‘Fire’ Floor</th>
<th>No. of Participants</th>
<th>Evac Time</th>
<th>Name &amp; Signature of Coordinator</th>
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Duties & Responsibilities

COORDINATOR/ASST

- Appoint one person as Coordinator during his absence
- Train FFT
- Policing of fire hazards
- Proper maintenance of fire fighting equipment
- Conduct training and public education
Duties & Responsibilities

FIRE WARDEN/ASST

- Acquaint new employee with FEP
- Familiar with FEP & means of escape
- Familiar with fire alarm & use of first aid fire fighting equipment
- Maintain & update floor register
Duties & Responsibilities

Campus Security

- Familiar with FEP & means of escape
- Security personnel are well versed
PERSON RESPONSIBLE FOR
ISOLATION OF FIRE ALARM

- Conversant with FEP, location & operation of fire alarm system
First Aid Fire Fighting

Using a Fire Extinguisher: P.A.S.S.

“P” Pull the Pin

Using a Fire Extinguisher: P.A.S.S.

“A” Aim Extinguisher at Base of Fire

Using a Fire Extinguisher: P.A.S.S.

“S” Squeeze Handle

Using a Fire Extinguisher: P.A.S.S.

“S” Sweep from side to side
General Pointers
General Pointers

• Distribution of the FEP
  – members
  – brief occupants
• Posting of fire emergency instructions
  – conspicuous location
• Arm bands
  – identification purposes
  – luminous vest
  – red armbands
General Pointers

- **Loudspeakers**
  - crowd control
- **Regular meetings**
  - discuss fire safety policies
  - action to be taken
  - short comings
General Pointers

• Training
  – periodic intervals
  – keep occupants (20 - 30) knowledgeable on fire prevention & fire extinguishing method

• Fire drills
  – annually
  – exempt occupants with medical problems
  – special arrangement for disabled persons
  – keep record of them
General Pointers

• Organizing Fire Drill
  – all occupants to participate
  – inform OED (person responsible for activation of fire alarm)
  – inform Campus Security for traffic control
  – Inform OSHE for assessment of fire drill
General Pointers

• Maintain year round visual checks of work areas
  – Fire Warden to report faulty conditions e.g. fire hazards
Basic Rescue Techniques
w/o Equipment
The Cradle

Lightweight casualty or child
The Pick A Back

Casualty able to hang on. Will not lose consciousness
The Backward Drag

Casualty too heavy to be lifted
The Cradle

Lightweight casualty or child
The Human Crutch

Casualty can walk with assistance
The Human Crutch (2-men operation)

Casualty can walk with assistance
The Two Handed Seat

Heavyweight casualty who needs to be carried rather than dragged. Casualty requires back support.
The Three Handed Seat

Useful when rescuer needs a free hand.
Can support casualty’s injured leg.
The Four Handed Seat

Heavyweight casualty who needs to be carried rather than dragged
Table Top Exercise
Fire Warden Pop Quiz
What are the factors to consider when identifying an Emergency Assembly Point?
What should you do if someone reported a gas leak in building?
In the event of fire who should you notify first?

- Campus Security
- Police
- Singapore Civil Defence Force
- Fire Safety Coordinator
What should you look out for when inspecting an extinguisher?
One of the core roles of the Fire Safety Coordinator is to ... ?

- Check areas in your floor for fires
- Coordinate evacuations
- Check everyone is at the assembly area
Should you immediately evacuate your building if you receive a bomb threat?
Who has the authority to allow staff and students back into a building following a real fire evacuation?

- A Police Officer
- The Incident Commander of the fire brigade
- University Building Emergency Controller
- The Vice Chancellor
CONCLUSION

Fire wardens form an organisation front line of defence against fire. Working with the coordinator responsible for fire safety, they carry out a variety of tasks to ensure that premises and their occupants are safe from fire.