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Fire Drill
(Fire Evacuation Drill Procedure)

1. Introduction

The aim of this paper is to give a general understanding of the purpose of fire drills and the principles to be followed when formulating a fire procedure.

In case of fire in high rise and high risk building, safe evacuation of its occupants, employees, outsiders etc., may present serious problems unless a plan of orderly and systematic evacuation is prepared in advance and all persons stated above are well drilled in the operation of such plan.

The danger which may threaten the persons if a fire breaks out, depends on many different factors, consequently it is not possible to construct a mode procedure for action in the event of fire which could be suitable in all premises, however, one should experience no difficulty in adapting them to the circumstances of each case. It is therefore important that before the drills are planned, the following points must be of prime importance.

- Purpose of Fire Drill
- Formulating fire routine
- Instruction and training
- Fire routine details
- Frequency of drill and recording

2. **Purpose of Fire Drill**

The responsibility for carrying out fire drill rests on the occupier of the premises. A fire drill is intended to ensure, by means of training and rehearsal, that in the event of fire.

- a) The people who may be in danger act in a calm and orderly manner.
- b) Where necessary, those designated, carryout their allotted duties to ensure safety of all concerned.
- c) The means of escape are used in accordance with a predetermined and practiced plan.
- d) If evacuation of a building becomes necessary, it is speedy and orderly.

3. **Formulating fire routine:**

For formulating a fire routine, four fundamental points are needed to be considered.

(a) Time of Evacuation:

The points of consideration are:

- i. Whether the buildings are attached or detached.
- ii. Are the buildings single storey or multi storey.
- iii. Are the buildings of fire resisting or non-fire resisting construction.
- iv. Will the degree of effective fire resisting compartmentation preclude the necessity of total evacuation.

(b) The Occupancy

This covers two points:

- i. Population characteristics i.e., the number of occupants, their distribution in the building, their physical condition, and the way they can be expected to react in any emergency. The last two characteristics depends on such factors as age, discipline and whether they are asleep or alert.
- ii. The use to which the building is put, i.e., the process carried on, the nature of the contents of the building including furnishing and goods stored or displayed.

(c) The existing means of escape

The points of consideration are:

- i. Adequacy of the means of escape
- ii. Distance to travel to a place of safety
- iii. Lighting arrangements, exit signs etc.,

(d) Fire defense

Satisfactory arrangement shall be made to cover the following points:

- i. Type of fire alarm and arrangements for sounding it
- ii. Fire extinguishers, hose reels, fire parties
- iii. Arrangement for calling fire service
- iv. General and specific notices
- v. Availability of staff in certain premises, assembly points and roll call.

4. Instruction and training

- **Instruction**

Circumstances will determine the exact procedure for any particular building, It is essential, however, that the whole fire routine proceeds efficiently for every person to receive adequate instruction and to fully understand them.

If however, persons are uncertain what they should do, delay could allow a fire which is small on discovery to grow to disastrous proportions, possibly involving loss of life.

Instruction must therefore leave no room for doubt as to the action to be taken. They should be:

- (i) As brief as possible
- (ii) Practicable
- (iii) Expressed clearly
- (iv) In simple language

- **Training**

Repeated practice evaluations will be necessary in many cases to ensure that the "Plan of action" is fully understood, and can be carried out efficiently when the situation demands. Varying conditions should be assumed for these practices so that the occupants are familiar with all alternative routes.

The time taken for persons to reach a place of safety will indicate the degree of efficiency attained by the occupants in their fire drill.

Instruction and training generally should provide for the following.

- a) The action to be taken upon discovering the fire
 - b) The action to be taken upon hearing the alarm
 - c) Raising the alarm, including the location of the alarm call points, internal fire alarm indicator panel etc.,
 - d) The correct method of calling fire brigade
 - e) The location and use of the fire fighting equipment
 - f) Knowledge of escape routes, including the important part played by fire doors.
 - g) Stopping machineries, processes etc., and isolating power supplies where appropriate
 - h) Evacuation of the building
- In addition to the above, certain categories of staff should be instructed and trained in any matter peculiar to their particular responsibilities at the time of fire. Examples are departmental heads, engineering and maintenance staff, floor supervisors, managers, security staff, telephonist etc.,

5. Fire Routine Details

As a general rule, the fire routine should be based on a sequence of events.

Details will vary in accordance with the circumstances of each occupancy and the following salient points will assist in drawing up a relevant routine to cover most premises.

- a) Alarm operation : Types – single or two stage, audible or otherwise, total or partial, notification to central point etc.,
- b) Power : Necessity of isolating power supply, stopping certain processes or machines etc.,
- c) Calling Fire Brigade : Precise instruction - watchman's / receptionist's instruction
- d) Evacuation : Single Stage or two stage – instructions – closing of door and window – search stores, toilets etc., responsible person for the job etc.,
- e) Assembly : Away from the premises – under cover, Mutual arrangement with nearby premises.
- f) Roll Call : Register-staff list – responsible persons – report to fire brigade officer
- g) Attacking the fire : Circumstances will dictate whether fire fighting operation should be attempted. The important thing to remember is that fire fighting must always be secondary to life safety and that whilst small fires such as small quantity of spilled inflammable liquid in a laboratory can be dealt with summarily, for a sizable fire safe evacuation should be the primary concern.

6. Frequency of drill and recording

The amount of instruction and frequency of drill will vary according to the degree of risk, i.e., the liability to outbreak of fire and the size, construction and layout of the premises and any legislative requirement. Details of the training and instruction given should be recorded. The following are examples of matters which may need to be included in such a record.

- (a) Date of instruction and exercise
- (b) Duration
- (c) Name of the person giving the instruction
- (d) Name of the person receiving the instruction
- (e) The nature of the instruction, training and drill with brief detail

National building code specified few more vital instructions for conducting fire drill and observing evacuation procedure from high rise or high risk buildings, which are as follows:

- (a) Fire drill shall be conducted, in accordance with the formulated fire safety plan, atleast once in every three months for existing buildings during the first two years. Thereafter fire drill shall be conducted atleast once in every six months.
- (b) All occupants of the building shall participate in the fire drill. However, occupants of the building, other than building service employees, are required to leave the floor or use the Exit during the drill.

- (c) A written record of such drills shall be kept on the premises for a minimum of three years period & shall be readily available for fire brigade inspection.
- (d) A sign shall be posted and maintained in a conspicuous place in every floor, at or near the lift landing in accordance with the requirements indicating that in case of fire, occupants shall use the stairs unless instructed otherwise. The sign shall read.

**IN CASE OF FIRE
USE STAIR UNLESS OBSTRUCTED OTHERWISE**

The letter shall be atleast 12.5 mm block letters in red with white background, such lettering shall be properly spaced to provide good legibility.

The signs shall be atleast 250 mm x 300 mm. Where the diagram is also incorporated in it, and 62.5 x 250 mm where the diagram is omitted. In the later case, the diagram sign shall be atleast 200 mm x 300 mm.

- (e) A sign shall be posted and maintained within each stair enclosure on every floor, indicating the number of the floor. The numerals shall be bold type and atleast 75 mm high. The numerals and background shall be in contrasting colours. The signs shall be securely attached to the stairside of the door.

Fire Orders / Notices

1. Introduction

The notices / orders shall be prepared to fulfill the requirements of fire fighting and evacuation from the building in the event of fire and other emergencies. The occupants shall be made thoroughly conversant with their actions to be taken in the event of emergency by displaying fire notices at vantage points and also through training at regular intervals. Such notices should be displayed prominently in broad lettering. Different types of model fire notices for different purposes are shown below:

2. Draft fire notice including instruction to the occupants – what to do in the event of fire

(to be posted at each fire alarm call point)

TABLE – 15

**(FIRE ORDER / NOTICE
INCASE OF FIRE)**

- 1) Anyone detecting smoke or fire, should raise the alarm immediately by operating the nearest fire alarm call point.
- 2) The premises will be evacuated on the sounding of the fire alarm. All persons will assemble at _____

ACT QUIETLY

USE THE NEAREST AVAILABLE EXIT

- 3) Do not stop to collect personal belongings.
- 4) No one should re-enter the premises until told by a fire brigade officer that is safe to do it.

**3. Draft fire notice including instruction for calling fire brigade
(to be posed adjacent to the telephone)**

TABLE – 16

**(FIRE NOTICE / FIRE ORDER
IN CASE OF FIRE)**

CALL THE FIRE BRIGADE BY EXCHANGE TELEPHONE, DIAL

When fire brigade control replies, give the call distinctly

FIRE AT
(Give exact address with landmark if any)

Do not assume that the call has been received until it has been acknowledged by the fire control.

4. Draft fire notice giving instructions to be observed by all concerned of the building.

(to be posted at vantage points)

TABLE – 17

**(FIRE ORDER / FIRE NOTICE
IN CASE OF FIRE)**

(To be observed by occupants, employees, workers, staff etc., of the building)

1. In the event of fire, it is the first duty of all concerned to prevent injury or loss of life.
2. For this purpose you should make certain that you are familiar with all means of escape from the building. Since there may be an opportunity in the event of fire, for you to attack it with the nearest fire extinguisher or hose reel, you should also be familiar with how to use them, if no then do not take any personal risk.

3. Immediately after you discover a fire or one is reported to you, you should

“SOUND THE ALARM – ALERT THE PERSONS”

4. Ensure that the fire brigade is called immediately on the sounding of the fire alarm.
5. Immediately after the fire alarm has been sounded, you should
 - (i) Evacuate the building following the means of escape in accordance with the detailed fire drill procedure ensuring that all doors through which you pass are closed after you.
 - (ii) Escort/help children, aged, disabled person, ambulant patients etc., to come out from the building following procedure stated above.
 - (iii) Assemble at the assembly point at for roll call & further instruction.

Language of fire orders should be clear, short, without any ambiguity and there should not be any room for doubt in understanding the notice. They should be

- As brief as possible
- Practicable
- Expressed clearly
- In simple language (English + Regional Language)