

**WEST YORKSHIRE FIRE SERVICE**

**OPERATIONAL PROCEDURE No. 2**

**INCIDENTS INVOLVING LARGE WAREHOUSES**

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## **INTRODUCTION**

Fires in modern warehousing can present a significant degree of difficulty to Firefighters and a correspondingly high risk to their safety. Warehouse premises vary and it is not possible to devise a procedure that will cater for all circumstances. This document, however, outlines risks that may be present and points for Incident Commanders to consider.

## **PRE-PLANNING**

Familiarity with the risk and pre-planning are essential. The following areas should be given particular consideration:-

### **Construction**

Modern, purpose-built warehousing can fall into two main categories:

- # **Integrated Structure** - where the internal racking supports the roof and walls. Heights up to 45m.
- # **Conventional Structure** - where the racking has no part in the construction of the building. Heights up to 12m.

Both types of structure can use unprotected steel frame supports with walls of part brick, part alloy cladding. Roofs are of alloy sheets. Both wall and roof cladding may cover insulation materials. There are usually few doors and few, if any, windows.

### **Access**

Lack of doors, windows, etc, plus high security protection lead to difficulty of access for firefighters. On site security personnel where available may be able to assist. Pre-planning should identify all possible access points.

Determine number of hose lengths from access points to:

- # fire breaks
- # centre point of building.

Determine number of ground monitors and optimum positions (internally) to provide a waterscreen.

### **Water supplies**

Pre-planning should identify water sources capable of supplying sufficient water for the worst possible scenario.

### **Liaison**

Liaison with the management of these risks is essential and recommendations made with regard to requirements of Firefighters in the event of a fire, eg: access, availability of plans of internal racking layout, lettering of aisles at low level.

## **RISKS ASSOCIATED WITH INCIDENTS IN LARGE WAREHOUSES**

- # The rapid build up of high temperatures and the rapid collapse of the whole or part of

the structure without warning.

- # Difficulty of access for firefighters. There may be few doors, possibly no windows, and high security protection. Break-in points at ground and roof level may be provided.
- # If no ventilation system is installed, then high internal temperatures and/or smoke-logging may occur which may vary considerably from ground floor level to heights of up to 45 metres.
- # Difficulty in locating the seat of a fire and subsequent firefighting operations.
- # Possible congestion of materials stored, and possible high degree of automation in some cases.
- # The possibility of hidden or unseen rapid fire spread and structural collapse especially at high level.
- # Wall and roof alloy cladding covering hidden insulation materials.
- # Unknown materials in storage which may be incompatible when involved in fire.
- # Products stored or large amounts of polystyrene foam and other flammable packaging materials, together with heat build up, could lead to "flashover" conditions.
- # Large volumes of toxic smoke could be present in and around premises if lateral ventilation only is possible.

## **INCIDENT COMMANDER'S CONSIDERATIONS**

The Incident Commander should carry out an immediate risk assessment in accordance with Operational Procedure No. 37 - Incident Ground Risk Assessment:

Before committing personnel inside the building, the Incident Commander should gather as much information as possible.

The following must be considered:

- # The positioning of stopping jets.
- # Whether firefighting from inside can effectively and safely be carried out.
- # The positioning of appliances and crews with regard to safety and operational efficiency, ie: use of ground monitors.
- # Use of monitors to provide stop jets, especially within the building.
- # Safety Officers should be nominated to monitor specific areas or activities.
- # Any delay in locating the seat of the fire could lead to rapid fire spread.
- # If protection systems are provided, sprinklers and/or ventilation procedures should be strictly adhered to.

Ventilation can lead to the location of the incident and successful attack. Removal of side wall panels, rather than roof sheeting, may be necessary. Cut out points may have been provided during construction.

- # Use 720 site or contingency plans/details if available.
- # Ensure evacuation procedures can be quickly instigated.
- # Ensure exit and escape routes are correctly protected.
- # Consider the use of 45mm hose for jets internally if required.
- # Consider damage prevention measures as soon as possible.

Where it is necessary to search the building or to locate the seat of the fire, the following points must be considered:

- # Due to the size of the area to be searched, a large number of guidelines will be required.
- # Where 'persons reported', the search team should go directly to their last known whereabouts.
- # If possible, guidelines should be laid down the centre aisle and searched off by the use of branch lines.
- # Full use should be made of all points of access with as many points of entry as

resources will allow.

- # Consider use of Thermal Imaging Camera from an aerial appliance. This may give an accurate location of the seat of fire and may also indicate the speed and direction of fire spread, thereby enabling resources to be directed accordingly.
- # Consider the use of PPV at the earliest opportunity.
- # Maintain good communications.

## **SUMMARY**

- # Pre-planning and familiarity with the risk are vital. Ventilation and access points, type of storage etc. should be noted on the 720 card.
- # Speed in early stages of firefighting is essential in order to restrict fire spread.
- # The size of this type of building will result in any search being time and resource intensive.
- # The risk to firefighters may be high. Analytical risk assessments in accordance with Operational Procedure No. 37 - Incident Ground Risk Assessment should be carried out regularly throughout the incident in order to monitor the changing risk environment.

Senior Operations Officer

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