

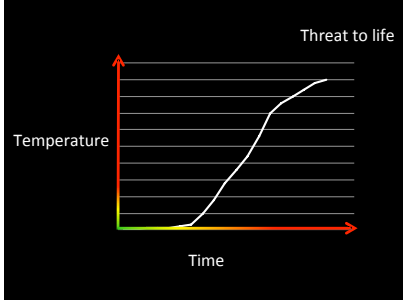
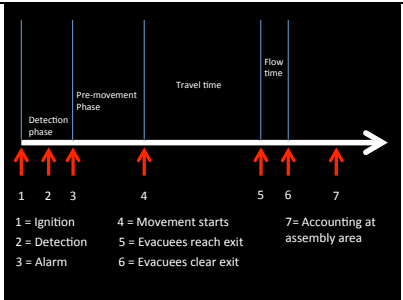


The IOSH Fire Risk Management Group

Seminar #1

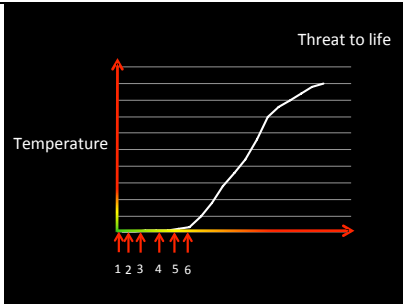

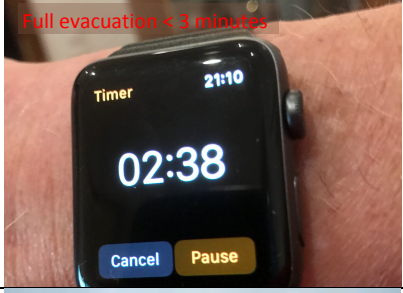

Complacency When the Evacuation Alarm is Initiated Presentation with Speaker Notes

	 <p>Complacency during evacuation alarms</p> <p>A seminar organised by the IOSH Fire Risk Management Group</p>	<p>Title slide</p> <p>Photo credit © IStock 521310698</p>
1.	 <p>Time = three minutes or less</p>	<ul style="list-style-type: none"> • We are dealing with time. The earlier we can get employees moving to safety, the better. • We know we can reduce time and potentially save lives at work and at home with automatic detection/alarm systems. • We also know that suppression systems such as sprinklers can gain us precious time. • And finally we know that getting people to move without asking questions or exploring also buys us time. <p>Photo credit © Thinkstock.com 200249326-001</p>
2.		<p>This is the time/temperature curve.</p> <ul style="list-style-type: none"> • The horizontal line represents time. • The vertical line represents temperature. • As time increases, if there is no suppression of the fire, although the threat to life may be initially low, it dramatically increases within a short time. • As the temperature increases so does the threat to life. • Note that the threat begins low and generally remains low for the first part of the curve, but depending on the fuel and the amount of oxygen, this variable can change. • Smoke and other byproducts such as carbon monoxide gas also start to develop and increase over time. • The sooner the alarm sounds, the sooner people move, the better the situation. <p>Illustration DGold</p>
3.		<p>There are four distinct phases of evacuation that we need to understand and agree on.</p> <p>Phase 1: The Detection Phase.</p> <ul style="list-style-type: none"> • This is from ignition to alert. There may be a time lag before a detector or a human being detects a fire. • Once detected in an automated system the alarm will sound immediately. • However in the absence of a detector / alarm system someone observing the fire will need to give the alarm. <p>Phase 2: The pre-movement phase.</p> <ul style="list-style-type: none"> • From the alert, when the fire has been detected, an alarm activated to evacuate and the alarm is recognized until occupants start moving. • This is an important phase because here complacency plays an important role. When people ask themselves whether they should evacuate or not, critical time may be lost. • During the pre-movement phase people tend to doubt there is an alarm. • They may look for the source of the fire or try to confirm there is actually a reason to evacuate. • People may secure valuables, turn off equipment or look for personal belongings they wish to take with them. • People may also look for their colleagues or friends prior to moving. <p>Phase 3: Travel time. This is the amount of time it takes for the</p>

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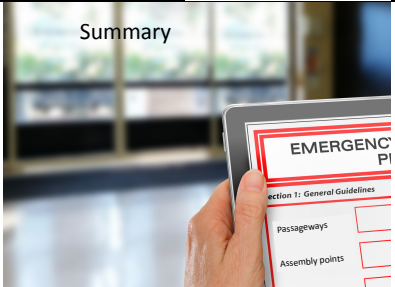
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		<p>individual to move through the structure to an exit.</p> <ul style="list-style-type: none"> • It is normally a pre-determined, safe, well-lighted, unobstructed safe route. • Travel time may be influenced by blocked or obstructed pathways, poor lighting, or the fact that the most direct way out of the building may not be the safest route due hazardous areas (which should be avoided). <p>Phase 4: Flow Time. The time it takes to get through an exit door.</p> <ul style="list-style-type: none"> • The size of the exit, weather conditions, lighting and the calmness of evacuees all have an influence on flow time. <p>Illustration DGold</p>
4.		<p>Here is an overlay of the previous two slides.</p> <ul style="list-style-type: none"> • In general terms all individuals in the building, including evacuation wardens need to be out of the building and in a place of safety within THREE MINUTES. • However, in certain buildings, such as those constructed out of combustible materials (such as timber floors and walls) the maximum evacuation time is shorter (2 ½ minutes). • The key message here is that the longer on procrastinates, looks for friends or confirms that it really is an alarm, the higher the risk of not escaping from the dangers of fire. <p>Illustration DGold</p>
5.		<p>We know that:</p> <ul style="list-style-type: none"> • Familiarity with designated emergency escape routes can reduce the evacuation time. • Evacuation maps and drill strengthens this familiarity and potentially builds on the self-discipline to immediately evacuate. <p>A system of trained fire wardens (or evacuation wardens) is a powerful tool to get workers calmly moving.</p> <p>Photo credit © Thinkstock.com</p>
6.		<p>Coming back to time, the generally accepted evacuation time in the UK is: evacuation of all employees to a place of safety in three minutes.</p> <p>Photo credit DGold</p>
7.		<p>Within the aviation industry the standard for evacuation from an aircraft is 90 seconds. This includes the largest commercial aircraft, the A380.</p> <p>Here is a video of a Polish LOT aircraft that had a malfunction of its landing gear. It had to land on its engines, creating a serious potential for fire. Once the aircraft had stopped, the cabin crew evacuated everyone in less than 90 seconds.</p> <p>From the official report,</p> <p><i>"Evacuation was initiated by the cabin crew immediately after the airplane came to rest on the runway. Escape slides were used for evacuation. They were activated after opening main doors on the left and right sides in front and back of the airplane. Additional ways of evacuation were two windows located on the left side of the airplane, over the wing. Two other evacuation windows, located on the right side of the airplane over the wing, were not opened and not used for evacuation. All passengers and cabin crew left the airplane."</i></p>

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		<p><i>Evacuation procedure lasted about 90 seconds. The last person to evacuate was the First Officer, who after checking the airplane board, left it via the rear left door. The head of cabin crew and the Captain remained on the board until fire fighters arrived. None of the passengers and crew suffered injuries".</i></p> <p><i>Click video.</i></p>
8.	 <p>Dangerous Conformity, 2011 (Standard YouTube license)</p>	<p>Here is a video that demonstrates the danger of conformity during an evacuation when one is influenced by a group.</p> <p>Source: Heroic Imagination Project www.heroicimagination.org Standard YouTube license</p>
9.	 <p>Group work</p>	<p>Group work based on case study</p> <p>Photo credit © Istock</p>
10.	 <p>IOSH Fire Safety Information Sheet (1)</p>	<p>Here is an information sheet that can help stimulate worker awareness of the need for effective emergency evacuation.</p> <p><i>Distribute the information sheet or provide Web Download reference</i></p>
11.	 <p>IOSH Fire Safety Management Information Sheet (MGT 1)</p>	<p>Here is a management-based second information sheet that summarises a number of points you raised during the group work.</p> <p><i>Distribute the information sheet or provide Web Download reference</i></p>
12.	 <p>Summary</p>	<p>Let's summarise: For an effective evacuation we need the following (lacking any of the components can be a failure point and can cost lives).</p> <ol style="list-style-type: none"> 1. A functioning alarm system 2. Knowledge of what to do 3. Clear unobstructed passageways 4. A system of accountability <p>Photo credit © Thinkstock.com</p>

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13.	<p><i>Thank you</i></p> <p>Dr David Gold CFIOSH Chair IOSH Fire Risk Management</p> <p>david.gold@gold-knecht.com www.gold-knecht.com +41-78-748-0609</p>	
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