**Events Management: Principles & Practice, 4th Edition**

**Instructor’s Manual**

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**Chapter 16**

**Crowd Control and Crowd Dynamics**

**Chapter Overview**

This chapter will discuss and provide a specific contextual alignment of crowd control and crowd dynamics at events festivals. The chapter will cross-examine how crowd management associated with events and festivals aligned to health and safety can be viewed as a mechanism to apply further control and disseminate responsibility beyond the scope of the event. Further, chapter will identify crowd management factors and provide a practical guide for events staff and visitors through crowd movement, crowds and their demographics behaviour as visitors arrive, move around venue location, departure and disperse. Chapter further explain how to maximise the opportunities to ensure the safety of visitors within the events and festivals space through creating effective and comprehensive crowd management plan and movement strategies that will analysed and developed for event venues and mass gatherings.

**Exercises and activities**

**Tips for Tutor**

1. Ask each student to read the following sections from the chapter 16, before coming to class.

* Crowd Movement
* Crowd Management
* Behaviour of Crowds and Crowd Hazards
* Crowds and Their Demographics
* Crowd Dynamics

**Tips for Tutor**

It is best to begin the class by cross-examine how crowd management associated with events and festivals aligned to health and safety can be viewed as a mechanism to apply further control and disseminate responsibility beyond the scope of the event?

Discuss with students’ how to create effective and comprehensive crowd management plans and movement strategies?

1. **Internet Resources**

These are internet and YouTube clips, we recommend you ask students to visit internet sites and YouTube clips and ask them to watch and read the material for classroom discussion.

**Internet resources**

* <https://www.youtube.com/watch?v=69TbUbNGGr8&t=4s>

**Coronavirus: Scaled back Hajj pilgrimage begins in Saudi Arabia**

Today is the full day of the annual Islamic pilgrimage, Hajj. Every year almost two and a half million Muslims head to the Saudi cities of Mecca and Medina to take part in the event. But due to the coronavirus pandemic, Saudi Arabia had decided to heavily restrict the number of residents who can visit the holy sites. As BBC Arabic Hanan Razek explains, this year's Hajj is rather unique.

* <https://www.youtube.com/watch?v=Ynxn8VH894U&t=3s>

**Crowd Safety - Netherlands Crowd Surge during Egress**

Deadly crowd surge during festival, this have been happening for so long that any event expecting crowds really needs to have multiple gates to allow people in and out in safety.

* <https://www.youtube.com/watch?v=nt2OmNo1eLI>

**Group Identity May Prevent Human Stampedes**

Large gatherings are usually peaceful but sometimes turn unruly with deadly consequences. Last year’s stampede during the Hajj in Saudi Arabia, for example, left more than 2,000 people dead. Psychologists say understanding how and why crowds sometimes behave as they do, and controlling them, involves recognizing people's capacity for self-regulation.

* <https://www.youtube.com/watch?v=2sAXg2w_0EI&t=12s>

**Pedestrian Dynamics Open Air Event Crowd Simulation**

This video describes why to use Pedestrian Dynamics to ensure the safety of visitors of an open air sport event like a marathon.

* <https://www.crowddynamics.com/>

Crowd Dynamics is an independent specialist consultancy in crowd movement, transport planning and movement strategies. We are uniquely positioned to support clients who need the safe and efficient movement of people on all transport modes in the built environment and within the public realm.

**Tips for Tutor**

* 1. Divide students into groups of four to five and instruct them to:
* Read Case Study 16.2: Hillsborough Football Stadium Disaster, Sheffield, 1989.
* Ask students to discuss and explain how to maximise the opportunities to ensure the safety of visitors within the events and festivals space through creating effective and comprehensive crowd management plans?

**Case Study 16.2:** **Hillsborough Football Stadium Disaster, Sheffield, 1989.**

The Hillsborough Football Stadium Disaster is the biggest football stadium disaster to happen in the UK, which claimed 96 lives and several hundred were injured. The disaster happened at the semi-final match between Liverpool and Nottingham Forest. The match was fully sold out and disaster happened at the Leppings Lane end, which was the smaller end of the stadium and allocated to Liverpool fans. The key facts of the event that took place as follows below:

* *Liverpool fans were allocated the Leppings Lane end of the ground (as a much bigger club)*
* *2:00pm sections 3 and 4 started to fill up rapidly while adjacent sections were nearly empty*
* *2:30pm Police became very concerned about the numbers outside the western entrance of the stadium.*
* *By 2.50 pm the urgency around the* *turnstiles became very critical, Leppings Lane end of the stadium had very limited number of turnstiles.*
* *The problem incurred when police the agreed with decision that there should be no delay to kick-off time. At that point it was impossible to admit all crowd by 3.00pm.*
* *At 2:47 pm a decision was made to open gate C to permit crowd into stadium.*
* *Gate C was opened by the police and stadium manager to release the pressure and another 2000 fans came in but no steps were taken to clear the tunnel or manage access.*
* *3:00 pm section 3 and 4 were 50% over their capacity and crowd density at the front 55% over maximum.*
* *3:04 pm when a Liverpool player hit the bar and a terrace barrier gave way in the resulting crowd surge.*
* *At that point it was impossible for Police officers, match stewards and ambulance services to control the situation.*
* *The fans who escaped to safety, tried their best to help others, but people still was being crushed.*
  1. **Divide students into groups of four to five and instruct them to:**

**•** Read Case Study Case Study 16.4: Notting Hill Carnival, Crowd Movement Data Book

* Ask students to explain and discuss different action plans to analyse the crowds demographic of the attendees?
* Ask students to discuss crowd movement and crowd behaviour management emotive of the attendees that are attending the event?

**Case Study 16.1:** **Hajj Crowd Disasters**

Hajj is measured to be the largest outdoor festival in the world and attracts over 2.5 million people from 70 countries. Over the last 30 years attendees at hajj festival has been increasing due to modern-day facilities at the site and with improvement of travel provisions is faster to reach Makkah. Hajj is an annual religious festival held in Makkah in Saudi Arabia, which constitutes the fifth and last of the acts of worship prescribed by Islam. The hajj is obligatory once in a lifetime for those Muslims who can afford it, provided that travel and security arrangements are in place and that provision has been made for any dependent family while the pilgrim is away from home performing the hajj. The hajj constitutes a form of worship involving the whole of the Muslim’s being: body, mind and soul, involving time, possessions and the temporary sacrifice of all ordinary comforts and conveniences that a person normally enjoys.

Several leading authors Mahmoud and Plumb (2010) Nolan and Nolan (1992) Raj (2015) Raj and Bozonelos (2020) Shackley (2001) and (Sharpley, 2009) have presented different point of views in relation to hajj festival, but they all agree that hajj is largest mass gathering in the world. Pilgrims come for hajj from all parts of the globe – from the Middle East, South East Asia, Africa, Europe, America and Australia. Hajj is a pilgrimage to Makkah in Saudi Arabia, which constitutes the fifth and last of the acts of worship prescribed by Islam. The hajj is one of the Five Pillars of Islam: at least once in a lifetime, any Muslim who is able, financially and physically, to complete this journey must do so.

Hajj festival is completed over a period of five days, and the spiritual city of Makkah enjoys the privilege of hosting the annual hajj festival over the last fourteen centuries. Over the last few decades hajj has experienced number of crowd disasters. Hajj is very peaceful religious festival, but evidence shows that hajj had several disasters due to mass crowd movement at festival site. The government of Kingdom of Saudi Arabia has developed advance technology-based monitoring system to avoid any disaster and carry out massive efforts safeguard the attendees during the festival period. Qurashi (2018, p.000) stated that movement of the crowd is major challenge for the government of Kingdom of Saudi Arabia due to mass movement people.

The intensity of movement of pilgrims is a changing constantly, fluctuating quantity of pilgrims pass particular place per time unit. These statistics depends on the speed and compactness of the amblers. Pilgrims who saunter individually (in minority) or in groups (in majority) in an initial time of Hajj are moveable and can be gauged on an average velocity of 40m /min but when compactness of the flow upsurges pilgrims commence to touch each other and the free movement is blocked, consequently, with the surge of the density, the swiftness is condensed, and at a certain point, the entire movement comes to a halt.

The table 16.1 shows the number people attended the Hajj over the 10 years and number of disasters has been incurred each year.

**[Insert Figure 16.1 here]**

The evidence indicate that despite large security arrangement by the government of Kingdom of Saudi Arabia. Crowd movement is becoming major issue for the hajj organisers to avoid people being killed over the last 30 years. The records shows that most of the hajj incidents are being incurred due to collapsing of structure, stampedes and fires during mass movements. Hajj festival occur over several different location over the 5 days period. Raj (2015) outlined the hajj pilgrimage route.

[Insert Figure 16.2 here]

**Figure 16.2: Hajj Pilgrimage Route**

Source: Raj (2015)

The people move between Makkah, Mina and Arafat going through narrow routes to reach each pilgrimage stage and moving back from Mina and Makkah to perform Tawaf (Circumambulation of Cube, Kaaba, see picture below). Figure 16.2 shows the Kaaba, an oblong stone building located approximately in the centre of the quadrangle of the Grand Mosque in the Holy City of Makkah. The front and back walls are 40 feet (12.0 m) in length, the side walls are 35 feet (10.5 m) and the height 50 feet (15.0 m).

[Insert Figure 16.3 here]

**Figure 16.3 Pilgrims Performing Tawaf**

Massive continuous efforts by the Ministry of Hajj and Umrah to keep attendees safe during hajj period. The Ministry of Hajj and Umrah is still facing a difficult challenge to overcome any incidents incurring the festival. Over the last 20 years government of Kingdom of Saudi Arabia has taken various steps safeguard every individual attendee and minimise risk of crowd movement disasters happening during the hajj festival. Rahman et al (2017) stated that,

Hajj is one of the most crowded gatherings of all, and it is expected that the number of pilgrims will increase by 10% each year. Furthermore, most of the pilgrims are from underprivileged countries and are elderly, poor, and illiterate, and the Hajj is often their first international trip.2, 16 The major concern of this mass gathering is that the entire Hajj event must be completed over a limited and fixed schedule of only 5 days.

1. **Discussions questions**

**Question 1**

Critically analyse how to control the crowd behaviour is to set up queuing in place in advance of crowd arriving and leaving at festival site?

**Question 2**

Discuss and identify effective crowd movement planning that needs to be put in place by the event organisers?

**Question 3**

Identify and provide a practical guide for events staff and visitors through crowd movement?

**Question 4**

Critically discuss key hazards affecting crowd safety and analyse crowd management plans to control crowd movement?