

# *Star Princess* cruise ship, 2006



- In the early hours of the morning of 23 March 2006, a fire was detected on board the cruise ship *Star Princess*. The ship was on passage from Grand Cayman to Montego Bay, Jamaica.
- 2690 passengers and 1123 crew were on board.
- One passenger died as a result of smoke inhalation, and 13 others were treated for the effects of smoke



## *Star Princess – the fire*

- The seat of the fire was on an external stateroom balcony sited on deck 10 on the vessel's port side.
- The fire spread rapidly along adjacent balconies, and within 10 minutes had spread up to decks 11 & 12 and onto stateroom balconies in two adjacent fire zones.
- The fire also spread internally as the heat of the fire shattered the glass in stateroom balcony doors, but was contained by the fixed fire suppression system fitted in each of the staterooms.
- As the fire progressed, large amounts of dense black smoke were generated from the combustible materials on the balconies, and the polycarbonate balcony partitions.



# *Star Princess* – the fire

- The fire was extinguished about 1.5 hours after it had started. The crew fought the fire with water hoses from adjacent external areas, and from internal alleyways.
- Difficulty was experienced in reaching the fire due to the construction and partitioning of the balcony areas.
- 79 cabins were condemned after the fire, and a further 204 were either water or smoke damaged.
- The damaged area covered 3 vertical fire zones on 5 decks as shown below



# Star Princess – plastic balcony dividers



- The vertical balcony dividers can be seen to right of green asterisk
- In the 3 lower deck levels these dividers have been consumed by fire (the blackened area)

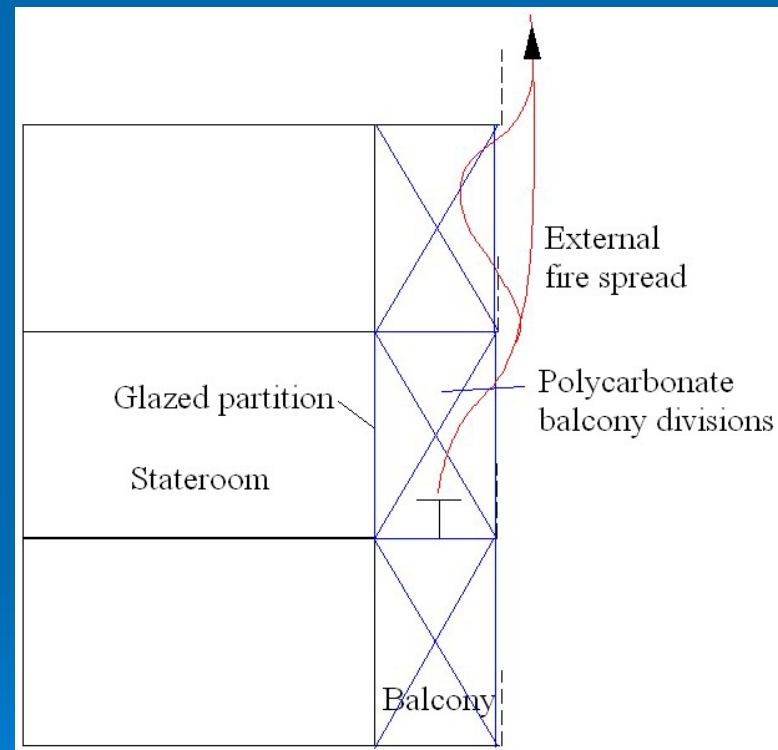




# Star princess – the balcony

left – view of fire damaged balcony (dividers have vanished in fire)

right – vertical section through 3 decks of state rooms and balconies



# Star Princess – fire tests/regulations

Below::

ad hoc fire test



- Fire tests showed that polycarbonate balcony divisions generated intense heat and copious amounts of dense black smoke as they burned
- SOLAS regulations do not, currently, control the combustibility of materials used on external balcony areas, as these are not included within the vessel's fire zones.
- Similarly, balcony areas on cruise ships are not required to have fixed fire detection or suppression systems, as would be the case in internal areas.

Note. Balcony areas are frequently difficult to monitor due to their inaccessibility.



# *Star Princess* - observations

- Fire protection arrangements within a ship, such as zoning, should not be undermined by lack of appropriate external measures.
- Ship owners and ship managers should be advised of the potential fire risk on external areas, particularly balcony areas, arising from the use of combustibile materials.
- Balcony areas typically lack smoke/heat detectors, and have poor access potentially making fire fighting in these areas difficult
- Immediate fire risk assessment is necessary to set priorities for remedial work.



# *Star Princess* - observations

- Plastic sheet balcony dividers should be replaced with dividers of non-combustible material.
- Increased vigilance is necessary and review of crew's on board fire fighting response needs to be reviewed.
- Passengers and crew should be advised not to leave towels and personal belongings on balconies when they are not in their rooms.
- Passengers should be reminded a) not to throw any items over a ship's side from balconies or other external areas and b) not to use unauthorized heating elements such as electrical heating coils used in cups or mugs and open flames such as candles.

