

Building Name Address	Use (as per FSA Annexed Table 1)	Date and Time of Incident	Structure and Stories Area	Extent of Damage (Damaged Area/ Total Area)	No. of Casualties
Tsubaki Grand Hotel	Hotel (5) a	Feb. 25, 1972	Fire resistive	[All] , Half, Partial, Small 11,120 m ² (100%)	Fatalities 3
		Breakout at 06:30 (approx) Detected at 06:45 Notified by emergency call Extinguished by 11:55	7 stories above ground and 0 below Partially wooden, 3 stories above ground		Injured 6 (1)
			Building area m ² Total floor area 11,120 m ²		

I. Summary of Fire Incident

(1) Summary	This fire originated from the kitchen on the 3rd floor of the wooden building and quickly spread to the adjacent fire-resistive building. Lack of fire prevention management caused this fire and resulted in 3 fatalities.							
(2) Conditions per Floor	Floor	Total area m ²	Damaged area m ²	Use (Purpose)	No. of people	No. of fatalities	Fire escape equipment	Firefighting equipment
					364 guests 24 hotel employees	5th floor of the main building 3 fatalities (1 male and 5 females)	<i>Main building</i>	Fire extinguishers
	7			Guest rooms			3 sets of inside stairs (2 sets on 1st to 5th & 1 set on 1st to 2nd)	48 sets of indoor fire hydrants
	6			Guest rooms			2 sets of metal ladders	Automatic fire detection system
	5			Guest rm, Great hall			3 sets of rope ladders	Emergency alarm system (PA system)
	4			Guest rooms, Medium-sized hall			1 set of fixed ladders	Guiding lights
	③			Guest rooms, Grill, Kitchen			1 set of outside stairs	Emergency signs
	2			Guest rooms, Recreation room, Hall			1 sets of inside stairs (1st to 7th)	Emergency sign
	1			Guest rooms, Lobby, Kitchen			1 set of outside stairs	Water pipe connections (New Building)
	Total	11,120	11,120		388	3	<i>Old Building</i>	
							4 sets of inside stairs (2 sets on 1st to 3rd & 2 sets on 1st to 2nd)	

(3) Origin of Fire	<p>(Floor, Room, Part, Combustibles, Habitable/Non-habitable rooms, Present/Absent)</p> <ul style="list-style-type: none"> ◦ The origin of the fire is believed to be the kitchen or the service room on the 3rd floor of the Old Building (3-story wooden structure). ◦ A dozen propane gas cylinders (10 kg) stored near an open flame. 	(4) Cause of Fire	Unknown
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(5) Fire Propagation Path	<div><div>(Location of Fire Source)</div><div>The kitchen or service room on the 3rd floor of the Old Building</div></div> <div><div>(Propagation from Source)</div><div>Burned the wooden walls and ceiling and spread further upon ignition of the liquefied petroleum gas</div></div> <div><div>(Propagation to fire-resistive building)</div><div>Propagated through the unclosed fire shutter and faulty</div></div> <div><div>(Propagation to Upper Floors)</div><div>Spread throughout the building through the stairwell and the hallways covered by carpet</div></div>			
	<p>The fire started somewhere around the kitchen on the 3rd floor of the Old Building (wooden) and spread rapidly because a dozen LP gas cylinders were stored in the vicinity. The Old Building was quickly engulfed in flames, and through the unclosed fire shutter and the faulty fire compartment, the fire spread to the Main and New Buildings, which were both fire resistive. The fire traveled through the stairwells and hallways, and the entire building became fully engulfed in flames.</p>			
	<p>○ Main Reasons for Propagation of the Fire</p> <ul style="list-style-type: none">○ The kitchen and service room contained a dozen LP gas cylinders, which became an accelerant increasing the size of the fire.○ The fire spread through the faulty connection between the buildings, inadequate fire compartments, and unclosed fire doors.○ The interiors were constructed with combustible materials, including the carpet in the hallways. <p>○ Smoke Propagation Path</p> <p>Along with the growing fire, smoke propagated throughout the buildings because the fire shutters and doors between the buildings and the vertical shaft were all open.</p>			
	II. Summary of the Building			
(1) Built	Construction, Completion, and Major Renovations (Old Building) Prior to 1960, (Main Building) April 1964, (New Building) September 1967			
Fire Prevention Management	(2) Vertical Shafts		(3) Fire Prevention	
	<div><div>Stairs [X]</div><div>Elevators [X]</div><div>Escalators []</div></div> <div><div>Duct Spaces [X]</div><div>Pipe Shafts [X]</div><div>Other () []</div></div>		<ul style="list-style-type: none">○ No fire-prevention manager was appointed.○ The fire defense plan was not updated in accordance with additions and modifications.○ The in-house firefighting team was pro-forma and no fire drills were undertaken.○ On every onsite inspection, the local fire department repeatedly pointed out the fire code violations with respect to the firefighting equipment and required improvements in the maintenance system; however, the hotel disregarded all.○ In the kitchen and the service room, a dozen propane gas cylinders (10 kg) were stored in each room and used for cooking.	
	<ul style="list-style-type: none">○ The fire shutters in the west stairwells in both the Main and New Buildings and all the fire doors remained open. The fire compartments on the backside of the ceiling above the fire doors were faulty.○ All of the stairs and hallways were covered by combustible carpet, which facilitated the fire to travel along that path.			
	(4) Fire Compartments		(5) Firefighting Equipment	
The connecting portion of the wooden building and the fire-resistive building was partitioned with fire proofing materials; however, the fire shutters remained open and the fire propagated through easily.		<ul style="list-style-type: none">○ The hotel did not install smoke detectors or a backup power source, and the existing automatic fire detection system was inactive when the fire broke out.○ The hotel staff did not know how to use the firefighting equipment effectively.		

III. Actions Taken after the Fire was Detected			
(1) First Detected	<ul style="list-style-type: none"> ◦ Detected by (Female Employee N) ◦ How and why (Unusual sound) ◦ Action taken (Alerted others loudly) 		
	<p>Hotel Employee N heard an unusual sound and went to the 3rd floor of the Old Building. She saw swirling flames and fire in the hallway and loudly alerted others by calling out "Fire!" as she ran through the hallway.</p>		
(2) Emergency Call	Emergency Call Yes <input checked="" type="checkbox"/> () No <input type="checkbox"/> []	Time elapsed since detection () minutes	
	<p>Initial detection was significantly delayed because the origin of the fire, which was in the center of the 3rd floor, had less people passing through and the automatic fire detection system was inactive. The hotel had never held a fire drill, so when the hotel employee noticed the fire, she panicked and failed to respond systematically. One of the hotel staff members finally made a 119 call 15 minutes after the fire was detected.</p>		
(3) Initial Firefighting Activities	Initiated Successful <input type="checkbox"/> [] Failed <input checked="" type="checkbox"/> [X] <ul style="list-style-type: none"> ◦ Extinguished timing [] ◦ Firefighting difficulties [X] ◦ Firefighting method [] 	(Reasons or Conditions) <p>A male staff member tried to extinguish the fire with a hose that extended from the indoor fire hydrant of the souvenir shop on the 2nd floor; however, the fire was out of control and the power was out.</p>	
	Not Initiated <ul style="list-style-type: none"> ◦ Extinguished time [] ◦ Firefighting difficulties [] ◦ Firefighting method [] ◦ Other [] 		
(4) Summary of Firefighting Activities	(Obstacles or Difficulties in Fire Control) <ul style="list-style-type: none"> ◦ This ocean front hotel had limited space for firefighters to maneuver and all the units had to gather on one side of the hotel. ◦ By the time the firefighters arrived, the entire building was engulfed in flames because of the delayed detection, delayed emergency call, and quick propagation of fire. 		

(5) Evacuation	Means of Escape (No. of Persons)		Obstacles to Evacuation	
	<ul style="list-style-type: none">◦ Stairs [X] (353)◦ Elevators/Escalators [] ()◦ Escape equipment [] ()◦ Directly to ground from windows or openings [X] (2)◦ Rescued [X] (9)◦ Other () [] ()		<ul style="list-style-type: none">◦ No windows []◦ Barred openings []◦ Locked emergency doors (Exits) []◦ Alarm system [X] (Poorly controlled, Malfunctioned, Not installed)◦ Power outage []◦ Other [X]	
(6) Casualties	<ul style="list-style-type: none">◦ In the New Building, approximately 200 guests were staying on the different floors (dispersed evenly). They heard the shouts of "Fire!" and other disturbing sounds and ran out to the hallway. Without any sign of smoke, all of them evacuated relatively smoothly using the outside stairs on the east side of the building.◦ In the Main Building, approximately 150 guests were staying there and heard the shouts of "Fire!" Most of them rushed to the stairs in the center of the building and evacuated. However, 11 guests were trapped and called for help from the balconies of the 4th and 5th floors. They were rescued by firefighters, except for 2 guests who impatiently jumped and broke their legs, but survived.			
	Healthy individuals 3 (Drunk persons) Individuals in need of assistance Infants Elderly Handicapped Patients/ill persons		Obstacles to Evacuation <ul style="list-style-type: none">◦ No windows []◦ Barred openings []◦ Locked emergency doors (Exits) []◦ Alarm system [X] (Poorly controlled, Malfunctioned, Not installed)◦ Power outage []◦ Other []	
On the 5th floor of the New Building, of the 8 guests staying in the rooms there, 5 were rescued from the balcony. However, 3 burned bodies were found: 1 guest in the hallway in front of Room 510, and 2 guests inside Room 515.				
IV. Issues and Lessons Learned				
<ol style="list-style-type: none">1. Despite the recommendations and repeated warnings issued by the local fire department, the hotel disregarded all and fire safety measures throughout the hotel were severely lacking. (The automatic fire detection system did not work because of poor maintenance.)2. There was no routine fire prevention system and therefore the employees were unconcerned with fire safety. This resulted in the employee's poor response in communication, evacuation guidance, and firefighting activities.3. When new fire-resistive additions were added to the old wooden building, the connecting portions and internal piping connections were inadequately constructed, which resulted in the rapid spread of fire vertically and horizontally.4. The fire traveled easily through hallways and stairwells because of incomplete fire compartments, ineffective fire doors and shutters as well as the carpet throughout the building.5. The hotel stored a large amount of LP gas cylinders in the kitchen, indicating that both the hotel and the distributor lacked concern about safety and responsibility. .				

Layout



