
MYER FIRE

CORONIAL INVESTIGATION AND INQUEST

FINDINGS AND RECOMMENDATIONS

**INQUEST HELD IN THE MAGISTRATES COURT OF TASMANIA
HOBART**

**between 20 APRIL - 30 APRIL 2009
and 22 JUNE - 26 JUNE 2009**

CORONER C P WEBSTER



MAGISTRATES COURT *of* TASMANIA

CORONIAL DIVISION



Coroners Act 1995

RECORD OF INVESTIGATION INTO A FIRE

**at the Myer Store
at 98-108 Liverpool Street, Hobart,
on 22 September 2007**

I, Christopher Paul Webster, Coroner, having investigated pursuant to the *Coroners Act 1995* (Tas) ss. 40 and 43 a fire that occurred at the premises of the Myer Ltd department store situate at 98-108 Liverpool Street, Hobart on Saturday 22 September 2007, with an inquest held at the Hobart Magistrates Court in Hobart, Tasmania between 20 April and 30 April 2009; and 22 June until 26 June 2009 make the following findings and recommendations:

FINDINGS :

1. The origin of the fire was the area between the ground floor ceiling and the first floor immediately above the cosmetics section of the Liverpool Street store of Myer midway between the two lights closest to the ceiling mounted heater (as marked on Exhibit C142 by Mr Klop).
2. The precise cause of the fire cannot be determined.
3. There was an operational sprinkler system present on 22 September 2007 in the void between the ground floor and first floors of the Myer building.
4. That the Tasmania Fire Service and its personnel did not have in operation prior to the fire an adequate pre-determined strategy for fighting fires in multi-storied buildings and that this led to many errors in the fighting of the fire which hampered the effective fighting of the fire.
5. That the fire fighters' decision to isolate the sprinkler system, which was necessitated by their failure to isolate the power to the building in a timely manner, caused the fire to spread to a greater extent than it would have otherwise done.

6. That the Myer building would not have been totally destroyed but for the action in isolating the sprinkler system and that the fire damage though significant would have been limited to internal structures within the Myer building.
7. The response of Tasmania Police to the fire was both professional and appropriate and did not contribute to the spread or damage of the fire.
8. That Aurora acted professionally and appropriately and its actions did not contribute to the spread of the fire.
9. The Myer building had appropriate fire retardation systems except for the fire doors.
10. That Myer had an appropriate evacuation process for the evacuation of staff and customers from its premises and completed the evacuation in an exemplary manner.
11. It is not possible to quantify what/if any additional damage was caused to surrounding premises or stock as a result of any inadequacy in the fire doors.
12. The fire safety measures existing in the retail businesses surrounding Myer were inadequate at the time of the fire.
13. That the inadequacies which existed have now been rectified and sufficient procedures are in place to evacuate the surrounding buildings in the event of a fire in those buildings or those buildings nearby.
14. These inadequacies in fire safety measures did not contribute to any damage caused by the Myer fire.
15. The reactivation of the fire sprinklers had little or no effect on the control of the fire.
16. The Tasmania Fire Service fire-fighters should have utilized available boosters when reactivating the sprinklers.

17. The failure to utilize the booster system when reactivating the sprinklers meant that there was no mitigation to the problems which resulted from the isolation of the sprinklers.
18. If the fire-fighters had used the booster system it would have assisted in retarding the spread of the fire and damage caused but I am unable to reach any conclusions as to the degree that it would retarded the fire or lessened damage.
19. The booster system should not have been needed as the sprinkler system should not have been isolated. It is the isolation of the sprinkler system which contributed significantly to the spread of the fire and additional damage.

RECOMMENDATIONS :

- 1 That Aurora ensure that regular audits are conducted of all electrical systems of all commercial buildings to confirm that they comply with modern standards.
- 2 That the Tasmania Fire Service establish clear systems and protocols for dealing with fires.
 - (a) It is recommended that Tasmania Fire Service provide a further written direction as to the requirement of fire fighters to follow standard operating procedures except in exceptional circumstances. That direction should be unequivocal in its terms and should not be open to interpretation by individual members.
 - (b) That there be a system established for accountability for deviation from training on Standard Operating Procedures (SOPs) during operations. Such a system should ensure the following:
 - (i) there is a formal de-brief after any significant incident;
 - (ii) the de-brief is conducted by someone outside the TFS;
 - (iii) all breaches of training and SOPs are noted;
 - (iv) the person responsible is asked for proper justification of why there was such a departure from the SOP or training;

- (v) the person responsible is rigorously assessed as to whether the decision to depart from the training or SOP was correct in the circumstances; and
 - (vi) in the event that the departure was unwarranted, the person responsible must undergo further training to ensure that a similar breach does not happen again.
- (c) That Tasmania Fire Service complete pre-incident plans for all major buildings in the central business districts and for large industrial buildings in suburban areas and ensure:
 - (i) That fire fighters of Tasmania Fire Service make themselves familiar with pre-incident plans.
 - (ii) That fire fighters regularly attend on site inspection of buildings to familiarise themselves with the pre-incident plans and update the pre-incident plans as necessary.
 - (iii) That pre-incident plans are readily available to fire fighters at the scene of a fire.
- 3 That the Tasmania Fire Service provide further training in respect to sprinkler systems, namely:
 - (a) That fire fighters of Tasmania Fire Service receive further training in the operation of sprinkler systems.
 - (b) That fire fighters incorporate into their pre-incident plans the location of sprinklers in void spaces in buildings.
 - (c) That fire fighters make themselves familiar with the valve operation of sprinkler systems in buildings.
- 4 That the Tasmania Fire Service provide additional training in the use of thermal camera imaging:

- (a) That the recommendation of Tasmania Fire Service at p32 of its report to the Coroner (Exhibit C136) be accepted, that being that fire fighters receive additional training in the assessment of thermal camera images.
- 5 That the Tasmania Fire Service provide additional training in power disconnection and improvements in communication between Tasmania Fire Service and Aurora:
- (a) That fire fighters receive training as to the available methods for power disconnection.
 - (b) That Fire Comm operators receive training as to the available methods of power disconnection.
 - (c) That fire fighters and Fire Comm operators establish protocols which clearly identify the type of power disconnection which has been requested, that being:
 - (i) disconnection at a sub-station and the attendance of a Field Operator;
 - (ii) disconnection of a grid.
 - (d) That Tasmania Fire Service and Aurora Energy establish clear protocols as to the type of power disconnection available so that a clear and unambiguous request can be made by Fire Comm to Aurora which will be acted upon in a timely manner and appropriate personnel dispatched.
 - (e) That fire fighters receive training as to the length of time that it would take for Aurora to dispatch a Field Operator so that appropriate decisions can be made on the fire ground as to whether a grid disconnection is required.
- 6 That the Tasmania Fire Service consider improvements in radio units installed in breathing apparatus:

- (a) It is recommended that investigations, which the Tasmania Fire Service already initiated, continue as to alternative radio units to be installed into breathing apparatus but until a suitable replacement unit is found that specific training be given to fire fighters not to rely solely upon breathing apparatus radios for communication. Specific training should be directed at fire fighters to assist them in emergency situations when breathing apparatus communications fail.
- 7 That the Coroner prepare a discussion paper and draft guidelines for the clarification of investigative roles of the Tasmania Police Service, the Tasmania Fire Service, and the Coroners Office for adoption in relation to future fires where a Coroner's Inquest is established.
- 8 That the recommendations contained in the Police Operational Debrief Report of 22 October 2007 to 7 November 2007, submitted to the Coroner, be further considered by the Tasmania Police for adoption where considered appropriate by Tasmania Police.
- 9 That Tasmania Fire Service implement Recommendation 5 above, and that Aurora continue to co-operate with that Service.
- 10 That any building fitted with heat-activated closing devices or fire and smoke doors be assessed to establish if it constitutes a fire hazard under section 165 of the *Building Act 2000* and that, where appropriate, such doors be replaced with smoke activated doors.
- 11 That the Tasmania Fire Service conduct an audit of all shopping centres to ensure that there exists within those centres adequate fire protection and evacuation systems.

Details of my Findings and Recommendations are set out hereunder.

This matter is now concluded.

Dated: 14 August 2009 at Hobart in Tasmania.

C P Webster
CORONER

CONTENTS

BACKGROUND	9
THE ROLE OF THE CORONER	10
THE CAUSE AND CONTRIBUTING FACTORS TO THE START AND SPREAD OF THE FIRE	14
The initial cause and origin of the fire	14
Findings.....	24
Recommendation	24
The Response of the Tasmania Fire Service.....	24
(a) Systematic Failure by Tasmania Fire Service	35
(b) Failure to Isolate Power and Isolation of Sprinkler Systems	41
(c) Contributing Factors - Other Errors	46
Findings.....	47
Recommendations.....	48
The Response of the Tasmania Police	51
Finding	54
Recommendations.....	54
The Response of Aurora	54
Finding	55
Recommendation	55
THE STATE OF THE MYER BUILDING AT THE TIME OF THE FIRE	56
Whether it had appropriate fire prevention/retardation systems.....	56
Findings.....	57
Recommendation	58
FIRE SAFETY MEASURES IN SURROUNDING RETAIL BUSINESSES	58
Findings.....	60
Recommendation	61
WHAT, IF ANYTHING, COULD HAVE BEEN DONE TO PREVENT OR LIMIT THE SPREAD OF THE FIRE AT THE MYER PREMISES	61
Findings.....	63
Recommendations.....	64
WHAT, IF ANY, IMPROVEMENTS COULD BE MADE IN RESPONSE TO SIMILAR FIRES IN LARGE RETAIL BUILDINGS IN THE FUTURE	64

BACKGROUND

On Saturday 22 September 2007 the Myer store, situated at 98-108 Liverpool Street, Hobart was destroyed by fire.

The premises consisted of 3 buildings and was owned by the Retirement Benefits Investment Trust and was leased to Myer since 1987.

The Liverpool Street store consisted of 4 trading floors and was one of the largest department stores in Hobart. The Liverpool Street store had entrances connecting it to surrounding stores and the Cat & Fiddle Arcade.

The Liverpool Street store was completely destroyed and significant damage caused to the contents of surrounding stores. Fortunately no person died or suffered significant injury in the fire.

The jurisdiction of a Coroner to investigate a fire (in the absence of a death) is contained in s40 of the Coroners Act 1995 which states:

“(1) A coroner has jurisdiction to investigate a fire ... if the fire ... occurs in the State and the coroner believes that it is desirable to conduct an investigation;

(2) A coroner must investigate a fire ... if the Attorney-General or the Chief Magistrate directs that an investigation be held.”

A Coroner is required to hold an Inquest in the circumstances set out in s43 of that Act.

Section 43 states:

“(1) A coroner must hold an inquest into a fire or an explosion if the Attorney-General or the Chief Magistrate directs that an inquest be held.

(2) A coroner who has jurisdiction to investigate a fire or an explosion may hold an inquest if the coroner believes it is desirable.”

On 24 September 2007 the Chief Magistrate, A G Shott, directed me, Magistrate C P Webster, a Coroner, to investigate the fire that occurred at the Myer building at Liverpool Street, Hobart on 22 September 2007 and to include an investigation into any fire in adjacent buildings if any.

THE ROLE OF THE CORONER

The role of a Coroner in this investigation is to conduct a quasi-judicial inquiry into the circumstances of the fire and to make recommendations to prevent similar fires and/or make recommendations as to how similar fires are to be handled by Emergency Services and the occupiers of large department stores or the occupiers of shops in shopping precincts, particularly shopping arcades.

The Coroner is concerned with the cause and other factors that may have contributed to the extent of the damage that occurred as a result of this fire, so as to make recommendations which may prevent similar fires. In addition, the Coroner is concerned with using the inquiry into the management of this fire by the Emergency Services and others to improve the management of similar fires in Tasmania where, thankfully, the occurrence of fires on a similar scale are rare.

The power of the Coroner when investigating a fire is set out in s45 of the Act:

“(1) A coroner investigating a fire or an explosion must find if possible-

- (a) the cause and origin of the fire or explosion; and*
- (b) the circumstances in which the fire or explosion occurred: and*
- (c) the identity of any person who contributed to the cause of the fire or explosion.*

(2) A coroner may comment on any matter connected with the fire or explosion including public health or safety or the administration of justice.

(3) A coroner must not include in a finding or comment any statement that a person is or may be guilty of an offence.”

Following a series of conferences of interested parties it was decided by myself that a Public Inquest concerning the Myer fire would be held.

The Inquest sat for 15 days during parts of April and June 2009 and a considerable number of witnesses gave oral evidence and the sworn written evidence of others was adduced.

For convenience a document entitled 'Terms of Reference' was produced to define the areas to which evidence would be directed.

The Terms of Reference are as follows:

- [1] The cause and contributory factors to the start and spread of the fire.
- [2] The state of the Myer building at the time of the fire and particularly:
 - (a) whether it had appropriate fire prevention/retardation systems;
and
 - (b) how effective would its sprinkler system have been in containing or combating the spread of the fire?
- [3] The state of fire safety measures presently existing in the surrounding retail businesses and whether as a result of the Myer fire these measures should be changed or improved.
- [4] What, if anything, could have been done to prevent or limit the spread of the fire at the Myer premises?
- [5] The appropriateness of the response of:
 - (a) the Tasmania Fire Service;
 - (b) the Department of Police and Emergency Management; and
 - (c) the Myer management to the fire at the Myer building;and particularly -
 - (i) Should the Tasmania Fire Service have turned off the sprinkler valve prior to locating and controlling the fire?
 - (ii) Was it appropriate for the Tasmania Fire Service to turn off the sprinklers due to a concern about electrocution instead of isolating the building power and requesting Aurora to shutdown remaining power?

- (iii) Did the Tasmania Fire Service comply with their own and generally accepted fire fighting training and standard operating procedures?
- (iv) How effective was the decision by the Tasmania Fire Service to reactivate the sprinklers by attempting to open the sprinkler valve in controlling the fire?
- (v) Should the Tasmania Fire Service have utilised available boosters to increase the water pressure prior to attempting to reactivate the sprinklers?

[6] What, if any, improvements could be made in the responses of these bodies to similar fires in large retail buildings in the future.

I am conscious of the fact that the Terms of Reference though a useful tool for dealing with the issues before the Inquest does not in any way enlarge or confine my jurisdiction, and that the provisions of s43 and s45 of the Coroners Act set out my powers and obligations.

I am also conscious that it is not the Coroner's role to usurp the function of the Civil or Criminal Courts and that it is not the Coroner's task to make findings of liability nor to apportion any blame in respect to the fire and its effects. I accept Crown Counsel's reference to me of *R v Doogan : ex parte Lucas v Smith & Others* (2006) 158 ACTR 1 which states:

“In litigation *inter partes* the nature of the questions that the judicial officer is required to determine can generally be found in the pleadings, but Coronial inquiries have no pleadings and, strictly speaking, no parties. The task of a Coroner is not to determine whether anyone is entitled to some legal remedy, is liable to another or is guilty of an offence. The Coroner's task is to enquire into the matter specified in the relevant section of the Coroners Act ... and make, if possible, the required findings and any comments that may be appropriate.”

Nevertheless, in determining the matters which I am required to consider pursuant to s45 of the Coroners Act it will be necessary to identify persons who caused the fire or

contributed to the fire and the reasons upon which I make such findings. I agree with counsel for Myer and FM Global in their submissions in reply where they submit:

“The only sensible purpose behind having a coronial inquest into a fire is to try and ensure that, to the extent possible, the risk of any recurrence of such a fire is minimized. If that process may be assisted by a recognition of fault or liability or blame, then there is no reason in law or logic why the coroner ought not proceed to so find and determine”.

I am of the view that “the fire” which I am required to investigate is not merely the initial ignition of the fire but the fire from the time of its ignition to the point of extinguishment.

In my discussion of the evidence, findings and recommendations I will attempt, for convenience, to address the Terms of Reference conscious of the fact that there is considerable overlap in the Terms of Reference and that the issues raised in s.45 of the Act must be covered.

THE CAUSE AND CONTRIBUTING FACTORS TO THE START AND SPREAD OF THE FIRE

The initial cause and origin of the fire

The Myer Liverpool Street premises were old. The Liverpool Street store consisted of a conglomeration of at least 3 older buildings formed into one premises and adjoined to the Murray Street premises and other buildings in the Cat & Fiddle complex on a number of levels by ramps, doors and stairs.

Myer had been operating in the Liverpool Street premises since 1959 having purchased an existing business which operated on that site. Some of the original buildings in the Liverpool Street conglomerate are said to date back to 1836.

As a consequence of this history there has been substantial structural and electrical work performed by numerous electricians and tradesmen over the years and a comprehensive history of electrical and structural work is not available.

Additionally, the building's history has resulted in structural peculiarities which cannot be readily seen by a casual observer. An example is that there are at least two voids between the ground floor (i.e. street level) and the first floor. The first void being the void between the original first floor and the pressed tin ceiling of the original ground floors. The second void being between the pressed tin ceiling of the original ground floor and the "new" ceiling of the ground floor, which was created to lower the ceiling of the ground floor.

The evidence was that there were many holes or gaps in the pressed tin roof such that at some places the existence of two voids between the ground and first floors may have been more notional than actual.

On Saturday 22 September 2007 at about 3pm staff at Myer working in the cosmetics area, which is on the ground floor of the Myer Liverpool Street premises (at the same level as Liverpool Street), noticed flickering of lights and then the failure of the lights above both the Mac and Clarins cosmetic counters.

Shortly after the first stage fire alarm sounded there was a public address announcement that there was a power outage and that Fire Wardens should go to the red telephones.

Whilst this address was being made staff in the cosmetics area could smell smoke.

Shortly after the second stage fire alarm sounded the staff could see smoke, which was brown in colour and quite thick, coming from a heater/air conditioning duct in the ceiling which was located above a door leading to Liverpool Street. Shortly after, the same coloured smoke was seen coming from above the other door leading to Liverpool Street.

The third stage alarm sounded almost at the same time that staff noticed fire officers in the store and the store was immediately evacuated.

By this time water was observed by staff members flowing out of fittings and ceiling gaps above the cosmetic section. Some assumed that the water sprinkler system was operating.

At the time of evacuation the Myer staff did not notice any smoke in other areas of the building.

The time from when the lights first flickered and went out to the commencement of evacuation of the building was minimal, estimated by staff to be approximately 15 minutes.

The smell which was smelt by the Myer staff was described by all staff, who offered a description of what they smelt, as an electrical smell.

The only place from which the smoke was observed to be coming was from vents and heaters in the ceiling of the ground floor of the Liverpool Street building in the cosmetics area.

Staff working on the first floor of Myer noticed the lights on their floor go out and while preparing for evacuation noticed firemen come onto the first floor. These staff members had not observed smoke or smelt smoke at that stage. Staff working in the

lower ground floor did not observe any smoke, smell any smoke, or observe any problems with the lights prior to the attendance of the fire brigade.

Mr Tabor, a Fire Warden, was asked to accompany fire officers to a switchboard which was located in a storage room on the mezzanine floor, situated above the cosmetics section on the ground floor. Thick black smoke was billowing from that room.

Fire officers were notified of a fire at Myer at 3.06pm on 22 September 2007 automatically as a result of the activation of the alarm and arrived at 3.08pm. They went immediately to the mezzanine floor. They could smell what appeared to be plastic or rubber burning, a smell similar to electrical wiring or insulation burning.

The evidence of the fire officers as to their efforts to fight the fire will be discussed in a different part of this report. At this stage it is sufficient to state that the firemen had considerable difficulty locating the seat of the fire.

They removed part of the ceiling in the cosmetics section and smoke and water came down from the ceiling and later when the ceiling partially collapsed flames could be seen in the ceiling above the cosmetics area. Later firemen on the first floor located the fire in the gap between the ceiling of the ground floor and the floor of the first floor. By the time the site of the seat of the fire was located it covered an area approximately 20 metres x 1.5 metres between the ground floor and the first floor.

It was the evidence of both Mr Mark Klop (Senior Fire Investigation Officer Tasmania Fire Service), and Mr Bob Coulter (an Electrical Engineer engaged to investigate the fire by Aurora Energy) that the fire originated in an area above the plaster ceiling above the cosmetics section of the Liverpool Street store and the ground floor.

I am able to conclude with confidence that the origin of the fire was in the ceiling between the ground and first floor immediately above the cosmetics counter in the Liverpool Street store, midway between the two lights closest to the ceiling mounted heater as marked on Exhibit C142 by Mr Klop.

This conclusion is supported by:

- (a) the evidence of the staff at Myer as to the apparent source of the smoke;
- (b) the location of the fire at that point by the fire fighters;
- (c) that the smoke detector in the vicinity was the smoke detector initially activated;
- (d) the activation of the sprinkler gong and discharge of water in the cosmetics area; and
- (e) the opinions of Mr Klop and Mr Coulter Fire Investigators.

The more difficult question to determine is the cause of the fire.

One of the consequences of the age of the building was that over the years much electrical work has been carried out and the wiring was old and redundant in parts.

Evidence of the state of the electrical wiring was given.

Mr Joel Millhouse, a qualified electrician employed by Spotless Services Ltd (which had the electrical contract for Myer for 3 years up to June 2006), stated in his affidavit that the switchboards at Myer did not have up-to-date schedules that is, that there was insufficient record on the switchboard to show what work had been done by different electricians. He said:

“The passage of time and the evolution of the Myer site meant that the schedules provided limited detail and could not accurately be relied upon. The situation could only be rectified by a complete audit and tracing of all incoming and outgoing cables. We were not tasked or contracted to do this, nor were we required to complete an electrical asset register.”

He also described the state of wiring in the void (near the seat of the fire):

“Around the switchboard was a void and this led into the void between the lowered ceiling of the ground floor cosmetics and first floor supports ... through into this void you could see the fluoro lights recessed into the roof over the cosmetics ... Most times I looked through there I focused on looking at the wirings and fittings located in the lowered cosmetics ceiling. Extensive wiring could be seen from the void alongside the main switchboard. There

was no old wiring connected to the mains board, but in the void you could see old wiring including VIR (vulcanised Indian rubber), TRS (thermo rubber sheathing) and Cap Casing (wooded ducted cabling with lid usually containing cable with cloth like material as sheathing). Whilst none of this cable work came from the mains board, I am unable to say what may have been alive or otherwise ...”

Mr Glenn McDonald, a qualified electrician employed by BSH Electrical (which was contracted to complete certain electrical work for Myer at the time leading up to the fire) described entering the void above the ground floor earlier:

“Immediately on entering the void I was required to negotiate a substantial amount of electrical cabling. This cabling was running just inside the void ... There was a myriad of various electrical cabling. Someone previous to me had separated the cabling and lifted portions up and attached it with cable ties to the top of the void to assist in creating a gap for a person to climb through the ceiling to access the void. There was a complete mixture of types, thickness and age of cabling, vulcanised Indian rubber (VIR), the orange cabling ... and modern TPS cabling. Whilst I didn’t trace the cabling it was obvious to me that it was coming from the main switchboard in the mezzanine floor ... I would describe the cabling as a total mess; it was the worst that I have seen in my time as an electrician. I would estimate that there would have been 50 cables running through the area.”

Mr McDonald then described splits in the outer casing of cables and that he could see bare wires.

Following the fire he was involved in reviewing the electrical wiring in the Myer premises in Murray Street, which relevant witnesses thought would have had electrical wiring similar to that in the Liverpool Street premises. He stated:

“Since the fire I was involved in completing electrical work in the Murray Street Myer building. During the assessment process, which I was a part of, we conducted numerous tests on the existing circuits and switchboards. We received results that couldn’t be explained and all indications were that the wiring was totally unsatisfactory. We therefore would not reconnect the power. Aurora Energy also was part of the process and they agreed. The Murray Street building required substantial rewiring. In the course of removing electrical infrastructure I observed that there were numerous amounts of old rubber cabling that clearly had been part of the active electrical infrastructure. I observed old cables connected with new and many unsatisfactory cabling arrangements. This involved rubber connected to TPS, cables in some places had been run through light fitting ... This is unsatisfactory due to heat produced by the fitting.”

Photographs showing the electric cabling in the Murray Street building were tendered at the Inquest.

BSH Electrical was sub-contracted in about July 2006 to undertake electrical work at the Myer stores. The contract was with Program Maintenance Services and essentially consisted of a fixed number of hours devoted to lighting maintenance and undertaking repairs and lighting where warranted.

BSH Electrical undertook other electrical work for Myer through the head contractors Program Maintenance Services, but such other work was on an ad hoc basis and subject to separate accounting and charges.

In July 2007 BSH Electrical agreed to undertake work involving the relocation of the Electrical/Home Entertainment Department in the Liverpool Street store. That work was completed about 28 July 2007 when some additional circuits had to be installed in the lower ground floor sub board.

The work was performed in the lower ground floor and consisted of the installation of 34 double 10amp general purpose outlets (GPOs), 2 single 10amp GPOs, and four 50watt low voltage down lights.

On 31 July 2007 BSH Electrical were engaged as subcontractors to undertake electrical work in the cosmetics section of the ground floor in Liverpool Street. This work involved alterations and disconnection of GPOs and lighting points from existing counters to allow the installation of new counters. This project did not require new circuits to be installed or circuit breakers to be replaced.

The new display counters were built and pre-wired by others and were plugged into 10A 3 pin plug bases on GPOs installed by BSH.

From the dates of the completion of the electrical work in respect of the relocation of the Electrical/Home Entertainment area and the cosmetic problems there were no problems with electrical equipment which could be attributed to the work of BSH Electrical.

Regular walkthroughs and repairs were undertaken on the regular weekly schedule under the existing contract between BSH Electrical and Myer without detecting any electrical issues of note.

In early September 2007 Myer Operations Manager reported that there was smoke in an area in the upper part of the mezzanine floor; BSH's representative Mr Hedges, an electrician, attended. He entered a confined area which was full of boxes and sales stands. Mr Hedges saw a light blue haze of smoke. He did not consider the smell to be that of an electrical fault or fire but rather to be wood smoke. The area was checked and cables were found not to be hot. A search initially failed to locate the source of the smoke but on a subsequent visit that day Myer staff pointed to a burnt fluorescent light and attributed the earlier problems to that source, although Mr Hedges did not consider that likely to be the cause of the smoke.

On 15 September 2007 a fault was reported with 12 halogen spotlights over heating in the cosmetic area. This problem was fixed.

On 21 September 2007 a fault was reported regarding lack of power to cash registers in the roof top control room in Murray Street but this was attributed to a fault with the computers.

It has been suggested by some interested parties that:

- (a) work performed by BSH caused the fire by overloading the electrical wiring; and/or
- (b) that BSH, and/or other contractors, contributed to the fire by failing to warn Myer, Aurora Energy and others of the poor state of wiring existing at the Myer site immediately prior to 22 September 2007.

At this stage it would be useful to consider the opinions of the various witnesses as to the cause of the fire.

Mr Mark Klop by a process of elimination concluded that the cause of the fire "appeared to be some type of degradation, overloading or fault within the cabling to cause the cables to overheat or a short circuit fault to occur".

He said at p27 of his report dated 27 October 2008:

“All ignition sources not in the area of fire origin were eliminated throughout the investigation process.

Malicious damage, sabotage and arson have been discounted as a possible cause for this fire.

All electrical appliances adjacent to the area of fire origin including light fittings, junction boxes and switchboards were inspected by Aurora Inspector Tim Hopper, Bob Coulter Electrical Engineer and myself and eliminated as a possible ignition source.

The only likely remaining ignition source in the area of fire origin were electrical cables located in the ceiling spaces. In this area it is believed that a great number of cables were located and were not installed or suspended in a manner consistent with installation standards.

It would appear there has been some type of degradation, overloading or fault within these cables that have caused the cables to over heat or a short circuit fault to occur.

These defects would provide a cause for an electrical ignition of combustible materials in or around the area of the defective cable or cables. The over loading or fault within the electrical cables may have been due to the installation of extra loading to the existing electrical circuits from alterations made within the basement (new television display area) and other areas to the Myer Liverpool Street building some weeks prior to the fire.”

Mr Coulter in his report agreed that the likely cause of the fire was some defect in the wiring or cabling.

He listed 13 possibilities. In his report he states:

“The defects found relevant to electrical fire ignition are summarised as follows:

- TPS cable connected to rubber insulated cable and using non-compliant insulation.
- Lighting cable (1.5mm²) supplying equipment that should be supplied from power circuits.
- Equipment connected to the active conductor of one circuit and the neutral conductor of another and paralleling connections between active conductors. This can lead to gross overloading of neutral conductors that will not be protected by phase overcurrent protective devices.
- Cable joints wrapped in insulating tape.
- Inadequate cable support and fastening arrangements.
- Cables running through light fittings and across ballasts with inadequate temperature rating (V75 instead of V110).

- Exposed bare conductors.
- Incorrectly terminated cabling and use of automotive type connectors in power circuits.
- Old rubber insulated cables some with perished (brittle) rubber insulation.
- Junction boxes not adequately supported.
- Replacement of switchboard bus connections with wire connections having inadequate short circuit rating.
- Thermally damaged wiring.
- No satisfactory identification of circuits on switchboards.”

When cross-examined by Mr Estcourt QC he conceded that there were 3 more possible causes of fire originating in the wiring/cabling, namely:

- overloading and/or inadequate rating;
- vermin damage (at p619 of the transcript he states “well vermin damage is - is a possibility with low voltage cables, yes, and in this situation more likely rats than anything else.”)
- an unprotected circuit.

Mr Coulter agreed that any of the 16 possibilities could have caused the fire. Although he considered some less likely than others he conceded at p621 that there were 12 or 13 equal possible causes of the fire.

I do not find any inconsistencies between the evidence of Mr Coulter and that of Mr Klop. Both are attributing the cause of the fire to some type of fault or problem with the electrical cables. Neither can say on the balance of probability what was the particular problem with the cables; a rat is just as likely to have caused the ignition in the cabling as overloading.

In these circumstances I am unable to reach any conclusion as to the cause of the fire.

In the absence of a finding as to the initial cause of the fire it follows that I could not conclude that any action by BSH contributed to the ignition of the fire either by contributing to the overloading of the electrical cabling or by failure to advise the owner/occupier of the property of the apparent poor state of the cabling.

In any event I believe it is unlikely, even if overloading or inadequate derating was the cause of the fire, that work done by BSH caused or contributed to the initial ignition for the following reasons:

- (a) The length of time between the work done by BSH and the fire commencing;
- (b) The minor nature of the work undertaken by BSH;
- (c) The location of the source of the fire in relation to the work undertaken by BSH; and
- (d) I am satisfied that BSH when undertaking electrical work undertook sufficient safety checks to ensure the electrical cabling was not overloaded.

Most of the possible causes of the fire involve possible inadequate cabling or faults with the cabling.

In the circumstances it may be that the fire was caused as a result of the sub-standard state of the cabling. Where a building is old and there is likelihood that existing cabling no longer meets modern standards of safety or there is likely to have been a deterioration of the electrical cabling. Owners of such buildings, the insurer of such buildings, and/or Aurora should ensure that electrical systems are regularly checked to ensure such systems remain safe.

Aurora should ensure that regular audits are conducted of the electrical systems of all commercial buildings to confirm that they comply with modern standards.

It is suggested that such audits could be undertaken by Aurora or by approved Electrical Contractors approved by Aurora but engaged by the owner or by Aurora itself.

Such audits should be conducted on a regular basis at such intervals which would not impose a significant financial burden on the owner of the premises but at sufficiently close intervals so as not to allow the electrical systems to deteriorate. Such inspections might be at intervals of 10 or more years depending on expert advice as to the optimum interval.

Findings

- 1 The origin of the fire was the area between the ground floor ceiling and the first floor immediately above the cosmetics section of the Liverpool Street store of Myer midway between the two lights closest to the ceiling mounted heater (as marked on Exhibit C142 by Mr Klop).
- 2 The precise cause of the fire cannot be determined.

Recommendation

- 1 That Aurora ensure that regular audits are conducted of all electrical systems of all commercial buildings to confirm that they comply with modern standards.

The Response of the Tasmania Fire Service

At 3.06pm on 22 September 2007 Senior Station Officer (SSO) Plummer was contacted by the Tasmanian Fire Service's communications operators ("Fire Comm") and by a pager in relation to an alarm at Myer.

SSO Plummer arrived in Hobart Appliance No 1.2 at Myer Murray Street with firemen Vinen, Jones and Gray at 3.08pm. At Myer the firemen met the Senior Fire Warden at the fire alarm panel.

The firemen then went with the Fire Warden to the switchboard room located at the mezzanine floor in the Liverpool Street store of Myer. As they walked across the floor towards the switchboard room SSO Plummer smelt what he thought was plastic and rubber burning. On entering the switchboard room fine wisps of grey smoke were evident. This smoke appeared to be coming out of gaps at the tops of the walls on the Liverpool Street side of the building.

SSO Plummer was able to identify the smoke detector which had activated and immediately requested the Fire Warden to inform the Chief Fire Warden to initiate a total evacuation of the premises.

The gong which indicated that water was flowing through the sprinkler system was activating by this stage. The process of evacuation of the Myer building commenced immediately.

SSO Plummer returned to the first floor and there was no evidence of smoke on that floor. He then went towards the ground floor and on his way down the stairs radioed to Fire Comm with a request that the response to the fire be upgraded from an alarm call to a structure fire, and advised that a backup crew was required to go to the Liverpool Street entrance and that two officers were to don their breathing apparatus.

At the bottom of the stairs SSO Plummer met firemen Vinen and Jones and requested them to conduct another investigation of the first floor switchboard room and the store area of the mezzanine to try to locate the seat of the fire. They donned their breathing apparatus and went to the first floor whilst SSO Plummer went to the Liverpool Street entrance. They checked out spaces, storage rooms and voids with a thermal imaging camera (TIC) with no result. They observed small amounts of grey smoke coming from the wall. They considered that the source was below the first floor level.

SSO Plummer went to the ground floor to the cosmetics section which he estimated to be directly below the switchboard room where he had previously seen smoke. There he observed water coming out of the gaps in the ceiling and small amounts of smoke coming out of gaps in the ceiling above a door heater unit located above the entry to Liverpool Street.

By this stage a fire engine, referred to as “Appliance Hobart 1.1”, and crew had arrived at the Liverpool Street entrance.

SSO Plummer returned to the ground floor between the cosmetics section and the Miss Shop and there had met firemen Jones and Vinen who had by then returned. While Officer Jones and SSO Plummer were discussing turning off the sprinkler system fireman Vinen started using a pike pole to remove parts of the ceiling to look for the fire. Smoke and considerable water was coming from where the ceiling had been pulled down and electrical wires were dropping down. Electrical power was still

connected and there was a build up of water on the floor. Officer Vinen was standing in a quantity of water and with an electrical cable hanging from the ceiling he was fearful of electrocution.

It was suggested by fireman Jones that in order to avoid the risk of electrocution the sprinkler system should be turned off. He then proceeded to the stop valve located in the basement and turned off the system. Initially the officer had difficulty as the sprinkler system was secured by a code lock. After unsuccessfully trying to find an employee with the code he gained access using a sledgehammer.

Access to the sprinkler system was also difficult as the sprinkler room had been used as a storeroom for the home entertainment goods and it was necessary to move items to get clear access to the narrow passageway to the water valve. The 10 metre long passageway itself was obstacle free but was narrow and access was difficult wearing breathing apparatus.

The main shutoff valve was chained and locked so Officer Jones had to again use the sledgehammer to twist and break the padlock.

At the same time there was a discussion as to whether the removal of the ceiling should be ceased due to the risk of electrocution and that further attempts should be made to locate the seat of the fire on the first floor.

Acting Station Officer (ASO) McGrath and Officer Benson, who had arrived in Appliance Hobart 1.1, together with Officers Jones and Vinen proceeded to the first floor to attempt to find the seat of the fire. They were equipped with breathing apparatus and a thermal imaging camera (TIC). They took a number of 2.3kg dry chemical extinguishers but did not take any hoses with them to connect to fire hydrants on the first floor nor did they unroll a hose from the ground floor or take a guide rope to assist them to return in the event that visibility was lost.

On the first floor visibility was good although the amount of smoke had increased. Smoke was issuing from all gaps in the walls and smoke level was down to about 2.5m above floor level. The remainder to floor level was hazy.

Whilst standing approximately halfway from the top of the stairs at the Liverpool Street entrance a popping and crackling noise was heard from the floor. The TIC was

used and it indicated a heat strip about 1.5m wide running the length of the floor approximately 10 metres either side of where the fire officers were standing.

The carpet was raised and a hooligan tool (a type of crow-bar) was used to pierce and lift the particle sheet which was over the floorboards. When the sheet was raised Officer McGrath applied the 2.3kg dry chemical extinguisher under the sheeting and the sheeting was lowered. The sheet was lifted again and it was realised that immediately underneath the sheets there were timber floorboards which had prevented the chemical extinguisher reaching any fire.

The firemen decided that it was necessary to get cutting equipment to properly get at the fire and Officers Vinen and Benson were sent to get cutting equipment and a hose line.

Officers Jones and McGrath began to clear an area to work removing clothes stands and carpet but while doing that they heard an unusual noise behind them. When they turned around they saw a “blowtorch like flame” erupting through the floor about 1 metre in height.

This occurred within the heat strip previously located and it continued to burn through the floor like an oxy cutting torch expelling considerable amounts of embers and thick black smoke.

The officers attempted to quell the flames with extinguishers with little effect.

By this stage the floor was losing stability with the hole rapidly becoming greater.

The smoke was engulfing the officers right to floor level. There was no visible light from the fire. The helmet torches of the officers were ineffective and they became aware that they were running out of oxygen and could not find a way off the first floor.

Officer Jones issued an emergency call on the breathing apparatus radio. There was no reply to the call and the call was repeated to no avail.

The officers who had never lost contact with each other at that time reached an area where the carpet converged with the vinyl which covered the main passageways leading to the stairs.

They were then located by Officer Vinen who had responded to their emergency call. He had approached SSO Plummer only minutes before and asked him if he wanted him to go and get Officers Jones and McGrath. SSO Plummer also had not heard the distress call, and did not realise the danger to those fire officers, replied affirmatively and Officer Vinen went alone to the first floor. This action by Officer Vinen was against standard operating procedure which required fire fighters to work in pairs.

When Officer Vinen reached the first floor he began to crawl towards where he had last seen the other two officers.

He crawled a short distance and found Officers Jones and McGrath at the intersection of the vinyl and carpeted areas and directed the others to the stairs. As Officers Jones and McGrath reached the top of the stairs the warning whistle on Officer Jones' breathing apparatus sounded indicating a nearly empty tank of air.

Earlier, when Officers Vinen and Benson left the first floor to get cutting equipment and a hose Officer Vinen noted visibility on the ground floor was good and that there was only a slight haze of light grey smoke.

As they reached the door at Liverpool Street the ceiling on the ground floor fell exposing a 10 x 5m hole in the Miss Shop ceiling. Orange flames were visible in the area burning freely under the first floor. At this time SO Terry, who was inside the Miss Shop, stated that he was going to turn the sprinklers back on.

Officer Vinen grabbed a hose reel and proceeded back into the cosmetics area and turned the hose onto the fire using pulses to avoid electrocution as the power was still on. This seemed to have a positive effect but the power was arcing and he was told to stop until the power was turned off.

Officer Vinen went to change his air cylinder outside and as he left the building he heard Officer Jones' distress call. Officer Vinen knew by the tone of voice that Officer Jones was in serious trouble and required urgent assistance.

At approximately 3.20pm Station Officer (SO) Paul Terry arrived at the fire. At the time of his arrival there were two appliances (crews) on site.

He spoke to SSO Plummer who was Incident Controller. SSO Plummer indicated he had 4 officers in breathing apparatus looking over the source of the fire and that he had isolated the sprinkler system. Officer Terry noted that the water on the floor of the Miss Shop was 50mm deep and was dropping from the ceiling in the front section of that shop.

SO Terry called for further backup including the “Snorkel” (a fire truck with extendable ladder fitted for elevated fire fighting above ground). He established himself as Incident Controller and SSO Plummer as Operations Officer. He requested police to block all streets and evacuate all buildings in the area.

He observed a haze of smoke on the ground floor and that a section of ceiling had collapsed in the Miss Shop area and that electrical equipment was arcing in the ceiling. At approximately 3.39pm he contacted Fire Comm and requested the grid to be shut down so that the fire could be extinguished.

Shortly after SO Terry noted an increase in smoke away from the building and that another part of the ceiling had collapsed. He saw a fire officer (presumably Officer Vinen) trying to extinguish the fire with water and directed him to stop. He noted that the smoke level had increased again and contacted Fire Comm again indicating the urgency of the situation.

SO Terry decided to reactivate the sprinkler system. He went to the basement and turned the sprinkler valve on.

Shortly after his return to the ground floor level there was a major collapse of the ceiling. Due to the risk posed by falling objects and electrocution the ground floor area of the Liverpool Street store was declared off-limits to fire fighters and efforts to access and fight the fires were to be made from other access areas. By that stage fire crews had been located in buildings abutting the Liverpool Street Myer building so as to prevent escape of the fire into other buildings.

At approximately 3.19pm, shortly prior to the arrival of SO Terry at the fire scene, the Fire Service had initial contact with Aurora regarding the fire at the Myer site and advised Aurora of the existence of the fire and that further contact would be made.

There were three ways by which the power could have been isolated to the Myer building by Aurora. These methods were:

- By sending an Inspector to the Myer building for the purpose of isolating the power in the building;
- By sending a Disconnect Crew to the Aurora transformer which supplied the power to the Myer building and isolating power at that source.
- By remotely disconnecting all the power to the area surrounding the Myer building and isolating power to the Myer and surrounding buildings.

The first two methods required the physical attendance of Aurora personnel and would take approximately 30 minutes. The third method involved the use of a computer and the isolation of power from the Aurora control centre. This method would take approximately 10 minutes. As the third method involved loss of power to buildings surrounding the object building obviously such a method of isolation should be used only when justified.

At 3.24pm a request was made to Aurora from the Fire Service for an Inspector to be sent to isolate the power at the Myer site. At 3.26pm it was confirmed by Aurora that an Inspector would arrive in half an hour.

At 3.39pm the Fire Service asked Aurora of the “practicalities of turning off the grid around the area” and were told that a disconnect crew would be sent to isolate the nearby transformer.

At 3.45pm the Fire Service requested Aurora to “... isolate the grid remotely” which was understood by Aurora to mean “... knock the whole feeder off to the centre of the city ...”. Aurora confirmed at 3.52pm that the power had been isolated as requested.

At 4.15pm District Officer Freeman arrived and became Incident Controller and SO Terry became Operations Officer. Additional crews were requested. By this time all

buildings on the city block surrounding Myer had been evacuated. None of the firemen located around the Myer building were able to access the seat of the fire.

Snorkel operations smashed the windows in the Myer building but the effect of the snorkel was limited as there were walls built internally against the windows. An external attack to try to extinguish the fire continued for some 30 minutes to no avail until the smoke changed in colour and increased in volume dramatically. The smoke turned to flames of up to 10 metres. At that time it became apparent that all floors of the Liverpool Street building would be lost and fire fighting was confined to saving other surrounding buildings.

Only after the snorkel had been used to contain the fire was District Officer Freeman advised by a representative of Aurora that the power had been isolated to the Myer building. DO Freeman then asked him to make arrangements for the isolation of the whole block. He was later advised that this had been done.

Much criticism was made during the Inquest of the Tasmania Fire Service response to the fire and it was contended by many interested parties that an inadequate and/or inappropriate response by the Tasmania Fire Service contributed to the spread of the fire so that damage caused was significantly greater than it would have been if the response by the Tasmania Fire Service had been adequate and/or appropriate.

The criticism can be summarised as follows:

(1) Lack of pre-incident planning

The Tasmania Fire Service had not developed a pre-fire plan for the Myer building prior to the fire, or if there were any plans such plans had not been communicated to the fire fighters.

As a result of lack of a pre-fire plan no plan was in operation for tackling a fire in Myer (or similar buildings). The fire fighters were not aware of:

- safety systems, such as sprinklers, which may have been in the building;
- the basic structure of the building include the existence of voids;
- location of power supply and switchboards;

- the existence and location of internal hose reels and hydrants and the booster inlet for the sprinkler system

(2) Inadequate resources

The Tasmania Fire Service failed to adequately use the resources at the scene in that it:

- failed to set up hoses, and use hoses, as soon as possible after realising there was a fire; and
- failed to use the thermal imaging camera in a timely manner.

In addition there was a delay in getting back up resources to the fire as soon as a fire was reasonably suspected, in particular:

- other available resources should have been called in from other stations immediately; and
- crews off duty should have been put on alert and/or called in to assist.

(3) Delay in finding the fire

The fire was not located until over 30 minutes after the arrival of the fire fighters.

This was the result of lack of familiarisation with the building (i.e. lack of pre-fire plan) and inadequate training with the use of thermal imaging cameras.

(4) Failure to isolate the power

The power was not isolated to the Myer building as soon as possible to enable the fire fighters to fight the fire with maximum resources.

If, as alleged by the fire fighters, it was dangerous to fight the fire with hoses or to allow sprinklers to run while electricity was present it was necessary to isolate the power as quickly as possible. This was not done.

(5) The isolation of the sprinkler system

The fire fighters should have been familiar with the capabilities of sprinkler systems and should not have turned off the sprinkler system as its continued operation provided the best method of limiting the spread of the fire, and that the isolation of the sprinklers meant that it would be fully effective once reactivated.

The isolation of the sprinkler system had two effects:

- it meant that there was no method of suppressing the fire in the void area; and
- that when the fire broke out onto the fire floor the fire fighting operations were deprived of the use of a sprinkler system to combat the spread of fire on that level either because the system was still isolated or was less effective when no longer isolated.

Prior to considering the issues enumerated above it is appropriate for me at this stage to acknowledge the hard work and courage of fire fighters involved in fighting the fire at the Myer building on 22 September 2007.

It should also be noted that notwithstanding the significant loss of the Myer building and the financial implications the fire fighters managed to limit the fire to only one building, in difficult circumstances of interconnecting buildings, without any loss of life or significant personal injury.

I also appreciate that the fire fighters in charge had to make decisions without benefit of significant time to consider and without what Mr Turner, Counsel for the Crown, refers to as the “miraculous prism of hindsight”. The Coroner, of course, has the benefit of the use of this “prism of hindsight” in this and other such Inquiries to improve future fire fighting and outcomes from fire fighting.

I am satisfied that a sprinkler system existed in the void between the ground floor and the first floor and that the sprinkler system within the void was operating at the time of the arrival of the fire fighters at the fire scene.

Messrs McDonald, Hedges, Mills and Lada (tradesmen who had worked at the Myer premises) had all been in the void between the ground and first floors and had seen sprinkler heads there. In particular the first three mentioned had seen sprinkler heads

immediately above the cosmetics department in the vicinity of the point of origin of the fire.

Mr Sherman, a builder who was the principal with M & S Builders which had a facility maintenance contract with Myer since 2002, gave detailed evidence of the existence of the sprinklers attached to the underside of the floor joists in the void.

At p1521 of the transcript the following exchange occurs:

“And the sprinklers that we come to now were on range pipes that protruded from the I-beams or somewhere else?.....No, look the sprinkler pipes, certainly the ones that I witnessed, and they were pretty typical throughout the store, were either attached over the actual underside of the floor joists come bearer and if there - where the head had been extended down it may have been extended down to prevent the shadowing of the sprinkler, so in the areas that I recall, I recall the sprinkler head and the actual pipe being attached to the underside of the joist.

So the pipe work came along horizontally, then vertically and then horizontally and vertically again to get over -Look, I don't recall in that area. From what I can remember I remember them to the rear of the store being attached across the actual joists themselves. In that immediate area I recall the same process.

When you're saying attached across the joists you mean not ceiling joists, you're talking about floor joists?.....Floor joists.

So they're above you?.....That's correct.

This is in the Cosmetics side?.....Yep.

And was there - when you say 'attached' are they going through the pressed metal where it was?.....No look, certainly, it - the areas that I saw, I didn't actually witness them attached to the underside of the pressed metal, bearing in mind that the area that we were accessing had most of it removed for - for whatever reason during the constructions and renovations there of earlier time, so I only recall the ones where we directly were around, and certainly in those ones they were taped or saddled the underside of the joist - to the floor joist above.”

The existence of the sprinkler system in the void is also supported by the existence of plans dating from 1933 and the 1987 plans which although dealing with the system to be installed beneath the plaster ceiling contains a notation “existing sprinkler protection above F(also)/ceiling to remain.”

If the sprinkler system existed in the void at the time of the ignition of the fire it is likely to have discharged as a result of a fire in the proximity in the void area; the whole purpose of a sprinkler system being to put out a fire in its vicinity.

Some of the fire officers at the scene of the fire assumed that water discharging from the ceiling was the result of the sprinkler system operating and employees of Myer who observed the water coming from the ceiling reached the same conclusion.

Other fire officers including SSO Plummer formed the view that the water discharging into the void was caused by a fractured sprinkler pipe. They thought that the water pipe had fractured when a heater above the door had fallen from its support fracturing the pipe. They surmised that the Oregon bearer, in the void, which had supported the heater had burnt through when the fire was in its infancy causing the heater's support to fail. These officers were unaware of the existence of sprinklers in the void and even continued to doubt the existence of a sprinkler system in the void at the Inquiry. I consider it unlikely that an Oregon bearer would have burnt through sufficiently to allow the support for the heater to fail. In any event if sufficient temperature had been sustained for a period sufficient to burn through the bearer it is likely that there would have been sufficient heat to activate the sprinkler system in the void.

I am satisfied, for the above reasons, that the water discharging from the ceiling at the time of the arrival of the fire fighters, and during their fire fighting activities, was from the sprinkler system within the void and not from the heater system or any fractured pipes.

I agree with much of the criticism made by Counsel for Myer and FM Global of the response to the fire by the Tasmania Fire Service, specifically:-

(a) Systematic Failure by Tasmania Fire Service

The basic failure of the Tasmania Fire Service was that it failed to have in operation any pre-determined strategy for fighting fires in multi-storied buildings which their fire fighters knew must be followed strictly except in exceptional circumstances.

The importance of having a pre-determined strategy is because fires in multi-storied buildings or sprinklered buildings in Tasmania are rare and as a consequence the opportunity for fire fighters to have accumulated sufficient experience in fighting such fires is non-existent.

Evidence at the Inquest of experienced fire fighters with over 30 years experience was that they had never attended a fire in a multi-storied building.

SSO Plummer, an experienced fire officer, had only attended one small fire involving a fire sprinkler system.

At p169 of the transcript the following exchange takes place:

“Have you attended fires in buildings?.....Yes.

Have you attended any fires that had sprinkler protection systems installed in those buildings?.....Yes.

So you’ve previously prior to the Myer fire attended a fire that had a sprinkler system installed in the building?.....Relatively small, but yes.

Yes. That fire that you attended was in a multi-storey building or a single-storey building?.....A multi-storey.

And can you recall what that was?.....A small fire in a car park underneath a multi-storey building.”

In the absence of actual experience it is important that fire fighters be given training to compensate for that inexperience and that it be stressed that there be little departure from the principles taught at that training.

Training either by practical training or by manuals or written standard operating procedures allow the best Australian and worldwide methods of tackling multi-storied fires to be taught to local fire fighters. These lessons or manuals only have effect if the importance of adhering to the lessons and/or written manuals is emphasised.

A fire fighting team’s first experience with a multi-storied fire is not an appropriate occasion for the team to learn how to fight such fires.

When the fire fighters arrived at the Myer fire on 22 September 2007 it should have been evident at an early stage that there was a fire as:

- there was smoke in the switchboard room;
- the smoke detector had been activated: and
- the sprinkler system gong was sounding.

The probability of a fire was, in fact, recognised and Fire Comm was notified of an upgrade to a structure fire and back up crews requested and two officers donned their breathing apparatus. Fire fighter Jones and SSO Plummer both thought there was in fact a fire (see evidence of Jones at p409 transcript and SSO Plummer at p179).

A strategy for fighting fires in multi-storied buildings, which had been pre-determined and its use emphasised to the firemen, would have been of invaluable assistance at that stage and on the balance of probabilities would have prevented subsequent mistakes in the approach to fighting the fire by the fire fighters present.

A pre-determined strategy would have ensured, in part, that:

- (a) Fire fighters were familiar with the characteristics and capacities of automatic fire sprinkler systems and their importance and would not have turned off the systems;
- (b) Fire fighters immediately arranged for the isolation of power to the building in the most appropriate manner rather than leave the decision as to whether and how power was to be isolated to the discretion of the fire fighter in charge of the operation.

It would have been of great benefit to fire fighters at Myer on 22 September 2007 to have had the benefit of a pre-incident plan for the Myer building. Such plan would have identified the fire fighting aids specifically available at that site and the location of isolation switches, water sprinkler systems, and peculiarities of the site.

A number of standard operating procedures (SOPs), which would have been of great benefit to the fire fighters, were in fact in existence at the time of the fire. The problem being that although there was an SOP or specific training the fire fighters were allowed to develop the attitude or belief that such SOPs or training were only guides which could readily be departed from in the absence of urgent reasons. The fire fighters were led to believe that even though they had, in effect, no experience in fighting multi-storied fires the training and/or SOPs were for their guidance alone.

In other cases the Tasmania Fire Service did not implement their own SOPs.

Prior to the fire there was in existence a Pre-Fire Planning SOP which in part provided:

“SAFETY CONSIDERATIONS:

- 1 ALL TFS personnel must make themselves familiar with all Pre-Fire plans produced for their fire district and those of a high risk level in adjacent brigade districts.

PROCEDURE:

- 1 Brigade Management should develop a list of all high and medium risk occupancies in the brigade area of responsibility and establish on that list a prioritisation as to the order in which occupancy should be assessed.
- 2 ...
- 3 ...
- 4 ...
- 5 ...
- 6 Pre-fire plans must be dated and reviewed wherever a significant occupancy change occurs or every 5 years where no change takes place.”

Despite the SOP requiring pre-fire plans there was no pre-incident plan in place for the Myer store at the date of the fire though SSO Plummer, who was unaware whether or not there was such a pre-fire plan available to him whilst at the fire, did not make any request for any pre-fire plan in any event.

While it is accepted that the Myer store may not have been at the top of the buildings which should be prioritised for preparation of a pre-incident plan certainly after a period of 9 years from the date of introduction of an SOP regarding pre-fire plans a pre-incident plan should have been prepared in respect of the Myer store, or at least some other multi-storied store as an example of similar stores, by the time of the fire.

The preparation of a pre-fire plan prior to 22 September 2007 would have alerted fire fighters to features such as installed fire fighting equipment (fire hydrants, booster stations, and sprinkler systems), the position of power boards and how to isolate the

supplies, and importantly in this case, the general structure of the building and the location of sprinkler systems which may not have been in ready sight.

There was also in existence at the time of the fire an SOP entitled 'Electrical Equipment involved in Fires' which relevantly stated the following:

“PROCEDURE:

- 1 The incident controller will size up the incident and:
 - 1.1 Arrange for power to be isolated for any building on fire or where electricity energy forms a hazard to fire fighters/rescuers or incident victims.
 - 1.2 Aurora disconnection crews **MUST** be called in these circumstances.

NOTES:

- 1 ...
- 2 Generally safe distances are 8 metres clear of downed or “live” cables of unknown voltage. For life rescue, etc maintain a minimum safe clearance of 3 metres.”

There was no SOP specifically related to sprinklers at the time but the training manual clearly provided to instructors that sprinklers should not be turned off until the fire was extinguished and/or under control.

The relevant passages from Exhibit C405 appear as follows:

“PUAFIR 206A - Check Installed Fire Safety Systems at page 2-6 where it is stated under the heading “Main stop valve”:-

It is important to ensure that the main stop valve is not operated until the officer-in-charge is certain that the fire is completely extinguished. This is because, once the main stop valve is operated, no water is available to the sprinkler system.

Tasmania Fire Service “check installed fire safety systems” in Chapter 2 headed ‘Sprinklers and Suppression systems’ (at page 30 of 65) the following appears in the ‘Introduction’ namely:

The most important principle of successful fire suppression is to attack an outbreak immediately. It follows that any device which can detect a fire automatically and then help to extinguish it with a minimum of

property loss will prove of great value. Automatic sprinkler systems using water as the extinguishing medium have been adopted for this purpose. Sprinkler systems have been used for over 100 years and have been installed in thousands of buildings throughout the world.

...

An automatic sprinkler installation comprises a system of pipes erected at, or near, the ceiling of each floor of a building and connected, through controlling valves, to one or more water supplies.

The sprinklers are so spaced, that in the event of two or more heads operating simultaneously, the area sprayed by each sprinkler overlaps the area sprayed by its neighbour, thus leaving no part of the floor area unprotected.”

As stated previously in some cases the underlying problem was not the lack of training and/or relevant SOPs but rather the failure of the Tasmania Fire Service to emphasise to all their fire fighters the importance of following the training and SOPs.

SSO Plummer agreed that he had received training that a sprinkler system should only be turned off when the fire is under control but despite this training he believed that his operational experience (despite the lack of experience in fighting multi-storied fires) could override such training taking each situation on its merit. This view was shared by a number of SSO Plummer’s fellow fire fighters even after the fire.

A similar view existed that SOPs were discretionary and could be overruled at the absolute discretion of the fire fighters.

This belief arose as a result of a letter from Chief Officer J B Gledhill which formed a covering letter to the SOP. The reason for the letter is somewhat vague but appears to have been written to overcome the Fire Fighters Union’s concerns that individual fire fighters might become liable for legal or other action if they did not strictly adhere to the SOPs.

The letter, which forms part of the SOPs (Exhibit C414) which were tendered, specifically states:

“SOPs should not be seen as a set of inflexible rules. Whilst all must be strictly complied with in relation to safety, there are aspects of some which are somewhat discretionary. However, anyone departing from them will be accountable for their decisions and actions ...”

Most of the fire fighters who gave evidence (including senior management) interpreted that letter as endorsing the right of the fire fighter not to strictly comply with the SOPs. Although I accept as genuine the belief of those fire fighters, my interpretation of the letter is that it confirms that all SOPs relating to safety must be complied with strictly.

The fault with the Tasmania Fire Service is that it allowed the fire fighters to have that belief and through training and SOPs did not emphasise sufficiently the importance of adherence to principles of training and SOPs.

(b) Failure to Isolate Power and Isolation of Sprinkler Systems

I have no doubt that the two specific errors which contributed most to the spread of the fire were:

- (a) the failure to isolate the power in a timely manner; and
- (b) the isolation of the sprinkler system.

SSO Plummer's evidence was that the fire fighting crew was in danger of electrocution as water was causing arcing in the ceiling of the ground floor.

The dangerous combination of electricity and water led SSO Plummer to the conclusion that both the sprinklers had to be turned off and fire fighting with hoses had to cease, and that fire fighters had to be evacuated from the immediate area of the fire on the ground level.

This in effect meant that the fire would burn, unhindered by either fire fighters or any fire sprinkling system until the power was isolated. As Mr Tree SC observes "there was no single identifiable benefit to fire fighting efforts achieved through turning off the sprinklers ...".

On SSO Plummer's own version of events and reasoning nothing could be achieved by the fire fighters until the power was isolated yet he delayed in making any decision as to isolating the power, despite having received training to the effect that in such situations he should "arrange for power to be isolated for any building on fire or where electricity energy forms a hazard to fire fighters ...".

SSO Plummer states that he was not aware that, if requested, Aurora could have isolated the power to the Myer site within a very short time and chose not to make a request that the power be isolated immediately. In fact when requested to remotely isolate the grid Aurora did so within 7 minutes of receiving the request.

As stated earlier it was obvious to the attending fire fighters at a very early stage that there was a fire in the building and the fire alert had been upgraded to a structural fire. At that stage SSO Plummer should have sought to have the power isolated. At the very latest this request should have been made when the decision was actually made to isolate the sprinkler system. (That is at that stage he should have requested a close down of the power grid instead of isolating the sprinkler).

As indicated by the evidence of Mr A Fenner (Aurora), and what actually happened on the day of the fire, a request from Tasmania Fire Service to Aurora to disconnect the grid would be done quickly and without any argument by Aurora.

The relevance of not disconnecting the power at this early stage is that fire fighters could not work in the vicinity of the live power cables and thus locate the fire, nor fight the fire with water, nor allow the sprinkler system to operate whilst fire fighters were in the immediate vicinity.

There remain other possibilities such as awaiting the arrival of the Aurora personnel at the site to close the sub-power station or to isolate the power at the main switchboard of Myer. In these cases the area near the fire could have been evacuated leaving the sprinkler system on to come into immediate operation when activated by fire.

The decision to isolate the sprinkler system was unnecessary and contributed most to the spread of the fire.

I am satisfied that the sprinkler system was already operating in the void at the time of the arrival of the fire fighters.

I am also satisfied that the discharge of the sprinklers in the void was having some suppressant effect on the fire in that the sprinklers were spraying some water onto the fire and pre-wetting the surrounding areas and absorbing heat in the area.

I am not satisfied however that even if the sprinklers had been left on that the fire would not have spread and broken out onto the first floor, but I am satisfied that if the sprinklers had been left on the sprinklers on the first and ground floors would have been available to assist in the suppression of the fire and perhaps extinguish the fire.

The first problem of isolating the sprinklers was that as a result of the draining of the system that even when turned back on there would be considerable delay before the system was again operational. This is because when isolated the sprinkler system will empty and when reactivated will take time to fill back up and regain its optimum operating pressure.

The second problem of isolating the sprinklers is that heat will cause the non-operational sprinkler heads to activate so that when the sprinkler system becomes operational again there will be more than the optimum number of sprinklers operating. A sprinkler system relies on the gradual activation of sprinkler heads to remain fully effective, and will lose effectiveness if too many sprinkler heads are activated.

The preponderance of expert evidence, which I accept, is that the sprinklers would have had a significant effect on the fire once the fire had emerged onto the first floor.

Mr G W Mullock (Technical Officer, Fire Safety for SEMF Consulting Engineers), at p1210-1211 of the transcript, agreed that it would be an almost unprecedented fire that would not be at best suppressed by 16 activated sprinkler heads. He thought that the sprinklers would have suppressed the fire at the first floor level though not necessarily by itself putting out the fire.

Mr A J Murtzer (Chief Engineer, Technical Specialist at FM Global) speaking of the escape of the fire onto the first floor, at p1496-1497 of the transcript, states:

“... then it finally broke out and then we had the ceiling sprinklers going on. But with the ceiling sprinklers controlling the energy that’s being released out into the first floor to very manageable levels and controlling that fire down to that one megawatt or less even as its consuming the floor from underneath we also, from what I understand, had the ceilings collapse and then the fire became visible from underneath, but with sprinklers operating in the - in the void and if any fire fell down we’d have sprinklers underneath that could operate as well, control the fire on the first floor. That combination would, as far as I can determine, control the overall development of the fire to just that area and not allowing it to spread anywhere within the first floor area and also

limiting the spread within the ground floor, even though we now have air coming in and its probably getting a little bit near the heat release where it is growing, but still we have reserves of other sprinklers in the void and underneath to handle that extra energy being released as well as what's up in the ceiling. So the combination of all that water being discharged all around this particular fire I would see as controlling its spread to a point where other things could be done manually.”

Later when asked about the extent of damage caused to the Myer building if the sprinkler system had been left on at all times he states at p1498:

“The structural damage would be a hole in the floor and a bigger hole in the ceiling but the building structure would have been intact, allowing clean up and rebuild ... on the internals and get back in operation a lot quicker.”

Mr N G Kurban (Fire Safety Engineer) was of the opinion that the sprinkler system would easily have put out the fire emerging onto the first floor. At p1472-1473 of the transcript the following exchange occurs:

“HIS HONOUR: Are you able to shed any light on whether or not it would have put out the fire?

WITNESS: My view is that it - it was easily within the - the capability of the sprinkler system on the first floor, yeah.

MR TURNER: (Resuming): Which depends entirely upon the magnitude of the fire emerging?.....Yes.

And if it was greater than what you've suggested then that observation is not necessarily correct?.....Well the observation comes from the fire-fighters' recollection of the flame height.

Oh well that's a verification of the model, I think you undertook?.....That - that's used as the input. So assuming that that's a correct approximation of the fire size at the time it burnt through the floor, then I'm - I'm very confident that the results are accurate, yes.

Well the assumption that you make is that it was around about 1.5 megawatts - correct?.....Based on the flame height and diameter of the fire.

And that's significantly greater than the model?.....No, I - I - I did that as an order of magnitude assessment, if you like. I didn't compare that with the model, as in the heat release rate, because the model's not capable of dividing up that heat release rate.

Okay. So you can't work out from the model what the magnitude of the fire was at the time of it emerging?.....Coming through the floor, no. No, I can't.

Nor at any other point?.....No, I can work out from the model that the sprinkler activation based on it being 16 megawatt in the floor - in the ceiling void, sorry, and burning through the floor gives me that sprinkler activation sequence. That's the computational fluid dynamics model.

On the first floor sprinkler activation?.....Yes. So the sprinkler activation sequence that's been determined is based on the model burning through the floor. I did an order of magnitude separate assessment to just see what the likely heat output of the fire on the first floor was at that time and came up with about 1.5 megawatt. My conclusion to that was that 1.5 megawatt is easily within the capability of a sprinkler system designed to that hazard classification."

Mr R E Bucholtz (former Chief Superintendent of the New South Wales Fire Brigade) gave evidence as to the ability of fire sprinkler systems to put out or contain structural fires. He gave examples of structural fires or Department shop that he had attended over his long career with the Fire Brigade and the ability "of a few sprinkler heads ... to either control and keep in check or actually extinguish fires in premises".

At p1367 of the transcript he states that if the fire had broken through to the first floor the sprinkler system would have activated and would have had an effect by putting water onto the fire itself and onto the goods stored in there. He said "...it would have wet those goods, which would have prevented combustion".

Mr G H Almond (former County Fire Officer and Chief Executive for the Fire Authority for Greater Manchester in the UK) stated at p1169 that he believed that operating sprinklers on the first floor would have controlled the fire by extinguishing it.

At p1178 the following cross-examination occurred:

"Where the fire came through was obviously - it was obviously a very intense fire, wasn't it?.....Yeah, but it came through in one spot.

And was described as eating away through these floor boards and whatever else was above it, just like a match held under a piece of newspaper?.....Yeah.

That's a pretty hot fire, isn't it?.....Oh no doubt it was.

And you don't know how far that fire extended into the building along the void, do you?.....No, but you can assume it covered the - it covered the area where the hot spot was found.

And can we also assume that it may be - been a fire in there twenty metres long by two metres wide?

HIS HONOUR: Well I think it might - are you conceding that, that it could've been twenty metres long and two metres wide?

WITNESS: Oh yeah, it could've been, it could've been.

MR GUNSON SC (Resuming): Are you suggesting that if the fire had burst out completely along that length and breadth that sprinklers would've contained it?.....Yes.

A fire of that intensity would require more than sprinklers, wouldn't it?.....Not necessarily.”

In summary the evidence of these witnesses was that the sprinklers would have either controlled the fire to permit manual extinguishment or extinguished it without further assistance.

Additional support for this view is contained in the text of H W Marryatt : *Fire - A Century of Automatic Sprinkler Protections in Australia and New Zealand 1886-1986* which gives only a few examples of sprinkler protected buildings having been destroyed. It appears however that in such cases there has either been some fault with the system or tampering of the system.

I do not accept the evidence of Mr Mon - Cheung Hui (Fire Engineer) as to the limited effect of the sprinkler system upon the fire emerging onto the first floor as his opinion was based on a scenario which was erroneous, namely there being no sprinkler system in the void and was against the opinions of seemingly more experienced experts both in the theoretical and practical areas. In any event I prefer the evidence of the experienced fire-fighters Mr R.E. Bucholtz and Mr G.H. Almond to that of the experts in the theoretical areas.

(c) Contributing Factors - Other Errors

I agree with submissions made that the fire fighters failed to prepare hoses in preparation to fight the fire; that they failed to use the thermal imaging camera in a timely manner; and that they failed to direct available resources to the fire at the earliest opportunity. I am not convinced that these factors contributed to the spread of the fire to any significant extent. No effective fire fighting action would have been

taken by the fire fighters in any event until the power had been isolated and/or the sprinkler system had been reactivated.

Similarly, the failure of the fire fighters' radio system, failure to conduct a meaningful post fire analysis, and failure to follow SOPs regarding unrolling safety lines and hoses when using breathing apparatus are matters which and will be the subject of comment and/or recommendations but these matters did not contribute to the spread of the fire.

Finally, criticism was made of the Tasmania Fire Service allowing SSO Plummer, who had been off operational duties for several years, to be the officer-in-charge of the fire whilst he was still on a familiarisation phase of a return to operational duties program following a long time in non-operational areas.

Obviously some other fire fighters would not have made the decisions he made but it is clear that others would have made similar decisions (Officer Jones suggested turning off the sprinkler system).

The problem was not that the specific fire fighter had not undertaken fully operational duties for some time but that he (amongst others) thought that SOPs and training were only general guidelines which they could disregard and that Tasmania Fire Service did little, if anything, to dispel that attitude.

Having had the opportunity of hearing SSO Plummer give evidence to the Inquiry over two days I am convinced that SSO Plummer would probably have made exactly the same decision regarding the isolation of the fire sprinkler system even if he had never had a break in his operational duties as his attitude to training and SOPs appeared cavalier and ingrained.

Findings

- 3 There was an operational sprinkler system present on 22 September 2007 in the void between the ground floor and first floors of the Myer building.
- 4 That the Tasmania Fire Service and its personnel did not have in operation prior to the fire an adequate pre-determined strategy for fighting fires in multi-

storied buildings and that this led to many errors in the fighting of the fire which hampered the effective fighting of the fire.

- 5 That the fire fighters' decision to isolate the sprinkler system, which was necessitated by their failure to isolate the power to the building in a timely manner, caused the fire to spread to a greater extent than it would have otherwise done.
- 6 That the Myer building would not have been totally destroyed but for the action in isolating the sprinkler system and that the fire damage though significant would have been limited to internal structures within the Myer building.

Recommendations

- 2 That the Tasmania Fire Service establish clear systems and protocols for dealing with fires.
 - (a) It is recommended that Tasmania Fire Service provide a further written direction as to the requirement of fire fighters to follow standard operating procedures except in exceptional circumstances. That direction should be unequivocal in its terms and should not be open to interpretation by individual members.
 - (b) That there be a system established for accountability for deviation from training on SOPs during operations. Such a system should ensure the following:
 - (i) there is a formal de-brief after any significant incident;
 - (ii) the de-brief is conducted by someone outside the TFS;
 - (iii) all breaches of training and SOPs are noted;
 - (iv) the person responsible is asked for proper justification of why there was such a departure from the SOP or training;
 - (v) the person responsible is rigorously assessed as to whether the decision to depart from the training or SOP was correct in the circumstances; and

- (vi) in the event that the departure was unwarranted, the person responsible must undergo further training to ensure that a similar breach does not happen again.
 - (c) That Tasmania Fire Service complete pre-incident plans for all major buildings in the central business districts and for large industrial buildings in suburban areas and ensure:
 - (i) That fire fighters of Tasmania Fire Service make themselves familiar with pre-incident plans.
 - (ii) That fire fighters regularly attend on site inspection of buildings to familiarise themselves with the pre-incident plans and update the pre-incident plans as necessary.
 - (iii) That pre-incident plans are readily available to fire fighters at the scene of a fire.
- 3 That the Tasmania Fire Service provide further training in respect to sprinkler systems, namely:
 - (a) That fire fighters of Tasmania Fire Service receive further training in the operation of sprinkler systems.
 - (b) That fire fighters incorporate into their pre-incident plans the location of sprinklers in void spaces in buildings.
 - (c) That fire fighters make themselves familiar with the valve operation of sprinkler systems in buildings.
- 4 That the Tasmania Fire Service provide additional training in the use of thermal camera imaging:
 - (a) That the recommendation of Tasmania Fire Service at p32 of its report to the Coroner (Exhibit C136) be accepted, that being that fire fighters receive additional training in the assessment of thermal camera images.

- 5 That the Tasmania Fire Service provide additional training in power disconnection and improvements in communication between Tasmania Fire Service and Aurora:
- (a) That fire fighters receive training as to the available methods for power disconnection.
 - (b) That Fire Comm operators receive training as to the available methods of power disconnection.
 - (c) That fire fighters and Fire Comm operators establish protocols which clearly identify the type of power disconnection which has been requested, that being:
 - (i) disconnection at a sub-station and the attendance of a Field Operator;
 - (ii) disconnection of a grid.
 - (d) That Tasmania Fire Service and Aurora Energy establish clear protocols as to the type of power disconnection available so that a clear and unambiguous request can be made by Fire Comm to Aurora which will be acted upon in a timely manner and appropriate personnel dispatched.
 - (e) That fire fighters receive training as to the length of time that it would take for Aurora to dispatch a Field Operator so that appropriate decisions can be made on the fire ground as to whether a grid disconnection is required.
- 6 That the Tasmania Fire Service consider improvements in radio units installed in breathing apparatus:
- (a) It is recommended that investigations, which the Tasmania Fire Service already initiated, continue as to alternative radio units to be installed into breathing apparatus but until a suitable replacement unit is found that specific training be given to fire fighters not to rely solely upon breathing apparatus radios for communication. Specific training

should be directed at fire fighters to assist them in emergency situations when breathing apparatus communications fail.

The Response of the Tasmania Police

At 3.06pm on 22 September 2007 the Tasmania Fire Service (TFS) attended the fire at Myer store.

The TFS notified Tasmania Police Radio Dispatch Service of the fire at approximately 3.15pm and police attended the scene at 3.19pm. The initial attending officer, A/Sergeant Semmens, immediately commenced the evacuation of vehicles and pedestrians from the immediate area of the building, and commenced liaison with the Manager of Myer to ensure a successful evacuation.

The initial police response was primary directed to supporting the TFS by providing traffic and crowd control and ensuring evacuation from the Myer building and adjoining buildings.

The Myer building was evacuated in accordance with the Myer evacuation plan and the Officer-in-Charge (by then Inspector G Johnstone) was advised of the successful evacuation at 3.38pm.

Initially 22 police officers were deployed around the area to ensure security and management of the scene. As there was a shift change at 4pm the number of police officers available was increased by keeping the officers, on the earlier shift, on duty after the normal shift change time. The number of police officers immediately available after 4pm to assist was 34.

These police officers were initially involved in evacuation of persons from the affected area, the prevention of people entering the evacuated area, re-direction of traffic (both foot and vehicle) around and away from the affected areas and ensuring that the Fire Service had unimpeded access and egress to fight the fire.

As the intensity of the fire increased a Police Forward Command Post was established and after consultation with the Fire Service a decision was made for the evacuation of

all persons from the block in which the Cat & Fiddle Arcade is located. All persons were evacuated from this block without any deaths or reported injury.

In the days following the fire the duties of the Police involved security of the fire site and surrounding buildings; the escorting of affected shop owners back onto the premises to collect belongings and valuables; and traffic control, both foot and vehicle, around the affected streets both to allow easy flow of traffic and to prevent people being in the vicinity of affected buildings which were being demolished or might otherwise pose a risk to the public.

At all times Tasmania Police was responsible for advising the public of police operational matters and conducting investigations of the cause(s) of the fire at the request of the Coroner. These duties included liaison with a large number of Loss Assessors and Fire Investigators and the interviewing of numerous witnesses as to the cause of the fire; the attempts to put out and prevent the spread of the fire; the evacuation of the affected areas; and affected business owners.

There was some confusion between the Coroner and Tasmania Police as to their respective roles where an Inquest has been directed into a fire at an early stage but these problems, which were the result of there being insufficient major fires in the past for a protocol to have already been established, were quickly resolved.

To the Coroner's knowledge there was no criticism from any quarter of the police response to the fire nor any suggestion that the police action contributed to the spread of the fire or damaged caused by the fire. No criticism was raised at the Inquiry by any interested party.

Following the fire the Tasmania Police reviewed its response and considered problems it had encountered with their response to the fire and what they should do to minimize or eliminate these problems in the event of a similar emergency. Such a response is to be commended as it is important to use experiences gained in emergency situations to improve responses to future such events.

Problems identified by the police included the following matters:

- (a) The necessity of the Police Forward Commander to work in the near vicinity of the Incident Controller for the Tasmania Fire Service;

- (b) The fact that there was a delay in the technical hardware (communications equipment and computers) in the Major Incident Room becoming operational;
- (c) That there was a need for key police personnel to wear badges identifying their role for incident response and emergency management;
- (d) That there was a need to identify persons who may be living in commercial premises;
- (e) That the Public Information Area should be established in a separate area to the Police Forward Command Post (PFCP) or alternatively that the PFCP should be established in an area accessible to the public on the edge of the police perimeter;
- (f) That there is a need for guidelines to be established regarding investigative roles and responsibilities of the police and others when an Inquest has been commenced into a fire cause while police are still investigating and dealing with the immediate aftermath of a fire;
- (g) The management of communication with the Media during a major emergency;
- (h) The effective registration of all businesses affected by the fire;
- (i) The rostering of staff over the course of the operation and the contacting and recall of appropriate staff in the event of an emergency;
- (j) The appropriateness of clothing and equipment used by or available to police officers responding to a fire particularly if there are hazardous chemicals present;
- (k) The necessity of warnings to police officers attending emergency situations if hazardous materials or chemicals are present;

- (1) The difficulty of managing an emergency scene in the absence of specific legislation authorising senior police officers to declare “a major crime scene”.

Finding

- 7 The response of Tasmania Police to the fire was both professional and appropriate and did not contribute to the spread or damage of the fire.

Recommendations

- 7 That the Coroner prepare a discussion paper and draft guidelines for the clarification of investigative roles of the Tasmania Police Service, the Tasmania Fire Service, and the Coroners Office for adoption in relation to future fires where a Coroner’s Inquest is established.
- 8 That the recommendations contained in the Police Operational Debrief Report of 22 October 2007 to 7 November 2007, submitted to the Coroner, be further considered by the Tasmania Police for adoption where considered appropriate by Tasmania Police.

The Response of Aurora

The communications between the Tasmania Fire Service on 22 September 2007 has been covered earlier under the heading ‘The Response of the Tasmania Fire Service’.

I am satisfied that Aurora acted appropriately in that it met all requests by the Tasmania Fire Service in a timely manner.

As stated by Mr A Fenner (Aurora), and what actually happened on the day, a request to Aurora to disconnect the grid would have been done quickly and without argument by Aurora. The time Aurora took to disconnect the grid from the time it received the request to do so was 7 minutes.

Finding

- 8 That Aurora acted professionally and appropriately and its actions did not contribute to the spread of the fire.

Recommendation

- 9 That Tasmania Fire Service implement Recommendation 5 above; and that Aurora continue to co-operate with that Service.

THE STATE OF THE MYER BUILDING AT THE TIME OF THE FIRE

Whether it had appropriate fire prevention/retardation systems

The details of the construction of the building and its fire protection features are set out in Part 2 of the report of Tasmania Fire Service to the Coroner (Exhibit C136). The relevant contents of that report were not in dispute by the interested parties.

The building was classified under the Building Code of Australia as a Class 6 building, that is, a “shop or other building for the sale of goods by retail”.

As a result of an inspection of the building by the Tasmania Fire Service in 1989 Myer engaged consulting engineers in 1990 to improve its fire retardation systems and subsequently the fire safety features were upgraded by late 1991 to meet, or exceed, the legislative requirements for fire safety in a Class 6 building.

In particular the building had the following fire safety features, namely:

- (a) Smoke detector alarms;
- (b) A smoke extraction system;
- (c) An emergency warning inter-communication system (EWIS);
- (d) A fire indicator panel to control smoke doors and the EWIS;
- (e) Internal hydrants and reels;
- (f) Smoke curtains;
- (g) Fire doors;
- (h) A booster inlet after the main sprinkler valve;
- (i) A well maintained sprinkler system.

It was necessary for the Myer building to have an evacuation plan approved by the Chief Officer of the Tasmania Fire Service. Such a plan had been approved in September 2003 and complied with legislative requirements when approved and at the time of the fire.

Practice evacuations were required annually and Myer conducted practice evacuations since 2003 every six months. The last practice evacuation before the fire being conducted in March 2007 and the last fire warden training was held in August 2007.

The evidence shows that shortly after there was evidence of a fire at the premises the fire wardens took their positions; public address announcements were made; the Senior Warden had met with fire fighters; and evacuation commenced. All occupants were evacuated within 13 minutes of the direction to evacuate being given.

The only criticism that can be made of the fire safety features in the Myer building is that a number of fire doors between Myer and other adjoining buildings were of the type activated by glass bulb links or solder links.

This type of door relies upon sufficient heat being in the vicinity of the door to cause the solder or glass bulb to react to the heat and thus cause the door to close. The problem with this type of door is that there is a delay in the closing of the door which allows smoke to pass through the door or, as happened in the Myer fire, falling debris resulting from the fire in the vicinity of the door falling so as to prevent the door properly closing.

The more modern fire doors, not required under existing building codes, are activated by smoke detectors rather than heat and as a result the doors will close at an earlier stage preventing both the escape of heat and/or smoke.

Significant amounts of smoke entered the Murray Street Myer store, and other buildings, through the doorways as the doors were designed to operate by heat and not smoke and to stop the spread of heat not smoke.

It is not possible to conclude that any extra damage was caused as the result of the inadequacies in the fire doors.

Findings

- 9 The Myer building had appropriate fire retardation systems except for the fire doors.

- 10 That Myer had an appropriate evacuation process for the evacuation of staff and customers from its premises and completed the evacuation in an exemplary manner.
- 11 It is not possible to quantify what/if any additional damage was caused to surrounding premises or stock as a result of any inadequacy in the fire doors.

Recommendation

- 10 That any building fitted with heat-activated closing devices or fire and smoke doors be assessed to establish if it constitutes a fire hazard under section 165 of the *Building Act 2000* and that, where appropriate, such doors be replaced with smoke activated doors.

FIRE SAFETY MEASURES IN SURROUNDING RETAIL BUSINESSES

Upon the realization that a fire was burning in the Myer Building no immediate steps were taken to evacuate staff and customers from the surrounding shopping precinct (which included Cat and Fiddle Arcade and Elizabeth Plaza).

At 3:40pm, some 15 minutes after the evacuation of the Myer building had been completed, smoke was observed in the Cat and Fiddle Arcade in the vicinity of the opening between the Arcade and the Myer building which was seeping around the roller-shutters that Myer employees had closed as they had evacuated the Myer building.

It does not appear that the surrounding buildings were evacuated until approximately 4:00pm although there is some conflict of evidence regarding the precise time of evacuation.

Between 3:25pm (when Myer was evacuated) and 4:00pm foot traffic continued to use Elizabeth Plaza and Cat and Fiddle Arcade. However some shop owners encouraged by employees of Centro (the operator of the surrounding Arcade) had closed their shops. There was a reluctance by other shop keepers to close their shops.

It was only at 4:04pm that a smoke detector activated in the Cat and Fiddle Arcade and by 4:24pm when the Mount Nelson Fire Brigade arrived to assist the Hobart Fire Brigade the Arcade had been evacuated.

An investigation of the area ascertained that there was no fire burning in the area and at 4:38pm the fire alarm was reset and occupants and shoppers were allowed to re-enter the area.

At 5:08pm a smoke detector in the same area again reactivated and tenants and shoppers still in the Arcade were directed to leave. It was not until approximately 5:20pm that the surrounding Arcades and shops were finally evacuated.

The Tasmania Fire Service report to the Coroner concerning the Myer fire dated 22 September 2007, together with the affidavits of witnesses, indicate that the response of the surrounding businesses and the evacuation of shop keepers and customers from surrounding Arcades and shops was poor and a number of deficiencies identified.

Deficiencies identified included:

- Failure to evacuate customers and shop keepers in a timely manner and once evacuated failure to keep the customers and shop keepers from returning to the shops. This had the effect of placing these people in danger if the fire had unexpectedly spread from the Myer site and also from keeping non-essential personnel away from the Myer fire so those essential personnel could perform their tasks without interference.
- Communication between fire-officers and on-site Centro staff was limited so that Centro management was not advised of the seriousness of the Myer fire and desirability to evacuate Arcade and shop centres.
- There was a lack of fire training for employees of surrounding businesses. In particular there was a lack of practice evacuations; training for fire wardens; posting of evacuation plans; and fire wardens had limited understanding of their roles and responsibilities.

Since the fire a number of steps have been taken to improve the response of the businesses in the Myer block to any fire alarm namely:

- A review has been conducted by Chubb Fire Safety of an evacuation plan and the maintenance of such plan for the Arcade and Plaza. The plan received in principle approval from the Tasmania Fire Service Chief Officer in December 2007 subject to improvements in the EWIS system (from alarm panels) and satisfactory practice evacuations. Final approval had not been given as at June 2009 but there had been several practice evacuations by that time.
- The separate EWIS systems on the Cat and Fiddle Arcade and Elizabeth Plaza have been amalgamated into a single system.
- Training for fire wardens has been conducted
- Practice evacuations have been held
- Two major adjoining businesses Harris Scarfe and Target have initiated their own evacuation procedures in the event that the Cat and Fiddle Arcade and Elizabeth Plaza are evacuated.
- There has been an upgrade on Fire Protection Systems in the Arcade (detailed in Exhibit C488)
- An Emergency Procedures Manual for training and use by employees of Cat and Fiddle Arcade and Elizabeth Plaza has been prepared and is in operation (Exhibit C446).

Findings

- 12 The fire safety measures existing in the retail businesses surrounding Myer were inadequate at the time of the fire.
- 13 That the inadequacies which existed have now been rectified and sufficient procedures are in place to evacuate the surrounding buildings in the event of a fire in those buildings or those buildings nearby.

- 14 These inadequacies in fire safety measures did not contribute to any damage caused by the Myer fire.

Recommendation

- 11 That the Tasmania Fire Service conduct an audit of all shopping centres to ensure that there exists within those Centres adequate Fire Protection and Evacuation Systems.

WHAT, IF ANYTHING, COULD HAVE BEEN DONE TO PREVENT OR LIMIT THE SPREAD OF THE FIRE AT THE MYER PREMISES

This question has been dealt with earlier under the heading “The Cause and Contributing Factors to the extent and spread of the Fire” and is specifically addressed under subheading recommendations.

[5] THE APPROPRIATENESS OF THE RESPONSE OF

- (a) The Tasmania Fire Service**
- (b) The Department of Police and Emergency Services; and**
- (c) The Myer Management**

These issues have already been canvassed at length except the following questions require further answers:

- (a) How effective was the decision by the Tasmania Fire Service to reactivate the sprinklers by attempting to open the sprinkler valve in controlling the fire?; and
- (b) Should the Tasmania Fire Service have utilised available boosters to increase the water pressure prior to attempting to reactivate the sprinklers?

In answer to the first question above it is clear from the evidence of the experts that I have preferred, that the impact of the sprinkler system in controlling the fire when the sprinkler system was reinstated was minimal.

By the time that the sprinkler system was reactivated the number of sprinkler heads that had been reactivated in the void alone was more than the water supply could adequately support and the system would have lost its effectiveness for reasons set out on page 43.

Even if SSO Terry did not reactivate the sprinkler system fully and it was, as I accept, only turned on to the extent of approximately 60% he at least recognized the problem of leaving the sprinkler system isolated and tried to do the best he could. Any mistake by him was in the “agony of the moment”.

The failure to reactivate the sprinkler system fully did not contribute to the spread of the fire or damage caused by the fire as a fully operational system would still have been hopelessly overwhelmed by the fire at the time it was reactivated.

The problem with reactivating the sprinkler system and its ineffectiveness once reactivated simply provides a further illustration of why the sprinkler system should not have been isolated in the first place and highlights the need for fire fighting personnel to be familiar with the operation of sprinkler systems. Recommendations have already been made to remedy these problems.

It appears that no consideration was given by the fire-fighters to the utilization of available boosters to increase water pressure into the sprinkler system. Presumably this was because the fire-fighters thought, erroneously, that the sprinkler system had been fully activated and would operate at full capacity immediately. These assumptions again illustrate the lack of knowledge of the fire-fighters of sprinkler systems. Given the fire-fighters lack of understanding of the state of the sprinkler system when reactivated and the nature of the Myer Building (not a particularly high building) it is understandable that the use of the booster system was not seriously considered (if at all).

If, however, the fire-fighters had had sufficient understanding of fire sprinkler systems they should have realised that the fire sprinkler system would not have been fully functioning when turned on as that the activation of sprinkler heads whilst the sprinkler system was off was likely to compromise the sprinkler system. In such a case it would have been prudent to utilize the boosters immediately on the reactivation of the sprinkler system.

Mr G. E Mullock, Consulting Engineer for SEMF gave evidence as to the use of boosters.

The following exchange took place at p12056-1206:

MR McKEE: (Resuming): Now you're aware that there was a booster system available to be used by Tas Fire Service for the sprinkler system?.....Yes, I'm not – I don't I recited it but I was advised that there was booster on the Liverpool Street Side of the building and it would have been on the ground floor above where the control valves were located.

If the booster system had of been utilized what impact would that have upon the operation of the sprinkler system?..... I'd have – I have a form of theory here that there would have been – the brigade booster system which I understand is capable of supplying pressures up to twelve hundred KPA would have significantly improved the opportunity for the system to discharge more sprinklers and at the correct pressure.

So it would be acted upon the system's ability to put out any fire on the first floor and the ground floor?.....I would say it would, yes.

Would it have dramatically increased the sprinkler system's ability to do that?.....Probably.

Findings

- 15 The reactivation of the fire sprinklers had little or no effect on the control of the fire.
- 16 The Tasmania Fire Service fire-fighters should have utilized available boosters when reactivating the sprinklers.
- 17 The failure to utilize the booster system when reactivating the sprinklers meant that there was no mitigation to the problems which resulted from the isolation of the sprinklers.

- 18 If the fire-fighters had used the booster system it would have assisted in retarding the spread of the fire and damage caused but I am unable to reach any conclusions as to the degree that it would retarded the fire or lessened damage.
- 19 The booster system should not have been needed as the sprinkler system should not have been isolated. It is the isolation of the sprinkler system which contributed significantly to the spread of the fire and additional damage.

Recommendations

These have been given elsewhere.

WHAT, IF ANY, IMPROVEMENTS COULD BE MADE IN RESPONSE TO SIMILAR FIRES IN LARGE RETAIL BUILDINGS IN THE FUTURE

A number of recommendations have been made throughout the course of these findings.

Finally, I conclude by again thanking all emergency services employees for their efforts and courage in fighting the Myer fire on 22 September 2007.

It is hoped that the process of the Inquiry and its analysis of the fire-fighting activities at the Myer fire will result in improvements in the fighting and containment of similar fires in the future so as to minimise damage.

C.P. WEBSTER
CORONER
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14 AUGUST 2009