Responses to questions raised at Senate Estimates Committee Hearings 24 May 2004 regarding ACA report: *Telstra's handling of calls to 000 on the morning of 3 December 2003*

Emergency events of 3 December 2003

- A severe storm in Melbourne on 3 December 2003 led to an extremely high number of calls to the 000 emergency call service.
  - Between midnight and 3:00am, 1,005 calls were transferred by Telstra call-takers to Emergency Communications Victoria, for the Victorian police, fire or ambulance services. On a normal evening there would be around 220.
  - During the same midnight to 3.00am period there were 5,827 calls made to 000 nationally, substantially more than would normally be expected for that time of night (about 1,750).
- At 1:50am, a house in the suburb of Gilmore, ACT caught fire and was subsequently destroyed.
  - Six neighbours attempted to call 000 from fixed line telephones to request assistance from the ACT Fire Brigade. Due to the high volume of calls, these calls were not answered immediately by the Telstra call-takers, causing the callers hung up and redial.

ACA investigation

The ACA provided two reports to the Minister for Communications, Information Technology and the Arts:

- the preliminary report was completed on 19 December 2003, 16 days after the incident;
- the final report was completed on 27 February 2004.

In conducting its investigation, the ACA:

- conducted seven face–to–face interviews with people known to have experienced delays when calling 000 in relation to the two specific emergencies in the ACT (records of interviews were provided to all interviewees and confirmed as accurate by them);
- obtained and analysed traffic data from Telstra regarding specific calls to 000 during the emergencies and general call volumes outside this period;
- contracted an independent expert in call centre traffic management and call queuing theory to review the adequacy of Telstra's arrangements (including staffing) for the handling of calls to 000 generally and specifically in the early morning of 3 December 2003; and
- obtained and analysed information from Telstra's 000 call management practices, and the specific actions it took during the morning in question.

The emergency call service – Telstra's and state/territory responsibilities

In order to assess Telstra's performance in handling calls on 3 December 2003, it is important to understand the delineation of responsibilities of the emergency call person (Telstra) and those of state and territory emergency service organisations

(ESOs). The following extract from the ACA's preliminary report outlines these responsibilities.

> An emergency call person is responsible for receiving calls made to emergency service numbers and, as appropriate, ensuring successful transfer of calls to the relevant ESO. Under the ACA's *Telecommunications (Emergency Call Persons) Determination 1999*, Telstra is the emergency call person for calls to 000 and 112[1].
>
> The handling of calls to 000 involves a two step process. Calls are initially answered by Telstra as the emergency call person before being transferred to the ESO requested by the caller.[2]
>
> Incoming calls to 000 are typically answered within 5 seconds. The Telstra call-taker will ask the caller "Emergency. Police, fire or ambulance?" Once the caller has responded and identified which ESO is required, the call–taker will transfer the call to the ESO answering point that it is closest to, and in the same state or territory as unless the caller requests otherwise.[3]

A Telstra call-taker is required by the Emergency Call Persons Determination to transfer a call to the appropriate ESO. As an extra precaution, in practice, Telstra call-takers remain connected to the caller until the ESO answers the call and a 'hand-over' can be completed. This standard procedure ensures that an ESO is still alerted to a potentially life-threatening or time critical emergency should a caller collapse or otherwise become unable to proceed with a call to 000.

> If the transferred call is not answered by an ESO call-taker within nine rings (24–27 seconds) or in the case of Victoria, 75 seconds, Telstra will re–present the call to the ESO's nominated 'second choice' answering point. This second choice is ideally a different call centre at a different geographic location to guard against a problem within one ESO call centre affecting the successful transfer of all calls to that ESO, but in the case of Victoria is the same call centre. The Telstra call-taker will continue to re-present an unanswered call through the list of 'second choices' until the call is successfully answered.
>
> The transfer of calls to the appropriate ESO is usually completed within 16 seconds.[4]

The process described above indicates that Telstra's ability to answer subsequent calls is contingent on the performance of ESOs in taking calls transferred to them from Telstra. Staffing of ESO call centres and the traffic dimensioning at these centres is the responsibility of the respective ESOs. The management of ESOs is a matter for state and territory governments.

The rapidity of the onset of the storm in Melbourne on the morning of 3 December meant that the emergency service organisations (ESOs) in Melbourne could not adjust staff levels quickly enough. This meant that despite being able to receive emergency calls from the public, the Telstra operators were not able to reach a person in the Melbourne ESOs to whom they could pass on the caller seeking assistance. This in turn meant that additional Telstra operators also would not have been able to reach operators within the ESOs so additional Telstra staffing would not have improved emergency response times.

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[1] Australian Communications Authority, December 2003, "Telstra's Handling of calls to 000 on the morning of 3 December 2003 – Preliminary Report", p13.
[2] ibid
[3] Australian Communications Authority (December 2003), above at p14.
[4] ibid.

Questions from Senator MacKay:

1. **I refer to the article by Megan Doherty on 5 December in the *Canberra Times* outlining events surrounding the tragic house fire in Gilmore in the early morning of 3 December. I would like to ask the ACA for some feedback regarding comments Mr Horsley made about those events. In the article it is asserted that Mr Horsley described the events of that morning as 'a once in a 100 year event' – I am quoting from the article. Are you aware whether he has been quoted correctly?**
Are the reports in the article true that Mr Horsley said that putting on more lines or opening your call centres might be, and I will quote from the article, 'an excessive response'?

The article in question states:

> ...ACA deputy chair Allan Horsley has described the Melbourne storm early on Wednesday which overloaded the tripl-0 service as a once-in-100-year event and said putting on more lines or opening new call centres might be an "excessive" response.

This is an accurate reflection of Mr Horsley's words, which are discussed at greater length in response to question 3.

2. **But did not the ACA's own final report into this matter say that the call load at that time was quite 'modest' compared to loads during the recent Canberra bushfires and the Sydney hailstorms?**

It is important to place the ACA's comments in context. The section of the ACA's final report that refers to the call load as 'modest' is discussing reports of 'ring out and changes in ring tone'. The term 'modest' is used by Telstra and quoted by the ACA in the context of the system's ability to handle simultaneous calls before a fault condition such as 'ring out' might be received. The capacity of the system to handle simultaneous calls is quite different to the staffing capacity of both Telstra and ESO emergency call-takers to handle call traffic.

The adequacy of Telstra's staffing on 3 December is discussed at length in the ACA's preliminary report, based on analysis provided by the ACA's independent call centre traffic management expert.

The ACA Final Report stated:

> Despite the extraordinary volume of calls to 000 on 3 December 2003, the volume was not great enough to overload the terminating exchange, to cause a failure in the cancellation of the 90 second time supervision or to create any change to the consistency of the ring tone. Telstra noted that the 000 call traffic load levels on the night of 2/3 December 2003 were modest compared to the 000 call traffic loads associated with the recent Canberra bushfires and severe Sydney hailstorms.[5]

3. **I am wondering why terms like a 'once in 100 years event' and 'excessive response' to the suggestion about putting on more lines or opening new call centres were trotted out so quickly before the matter had even be properly investigated.**

The reference to a one in 100 year event was a common one in the days following the Melbourne storm, and used frequently in the media to highlight its unusual character.

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[5] Australian Communications Authority (February 2004), "Telstra's handling of calls to 000 on the morning of 3 December 2003 – Final report", p16.

The quote originated from a statement made by the Bureau of Meteorology describing the severity of the storm as a 1:100 year event in the suburbs it affected. Readings received from Melbourne Water from some of its gauges substantiate the claim that it was a downpour that would statistically occur in a specific location only once in 100 years.

Mr Horsley's remark that increasing the number of staff in Telstra emergency call centres could be an excessive response was designed to place the overall incident in context and reduce speculation regarding possible recommendations of the ACA's investigation before it was complete, rather than a suggestion of what the outcome might be.

4. **The report, as you indicated, effectively cleared Telstra by concluding, 'The current emergency call centre arrangements are functioning well.' Given that the family's house was destroyed by fire whilst six Gilmore residents tried to call 000, how could it be concluded that Telstra's current emergency call centre arrangements are working well?**

The ACA's preliminary report found:

> 2. Telstra was adequately staffed to handle the expected number of calls to 000 on the morning of 3 December 2003. Based on analysis provided by the ACA's independent call traffic expert, Telstra had adequate staff to handle the actual number of calls on 3 December, if the normal time taken to transfer a call from 000 to an ESO was met, however, its answering times were affected by delays in transferring calls to Victorian ESOs.[6]
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> ...
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> 8. The main cause of Telstra's delays in answering calls to 000 in the early morning of 3 December was the delay in transferring calls to the ECV call-takers responsible for MFESB[7] calls who were managing an unprecedented level of calls.[8]

As referenced in the ACA's introductory comments, the ACA's jurisdiction and Telstra obligations in relation to emergency calls extend only to the operation of the national emergency call centres. Neither the ACA nor Telstra have any control over the operation of the state emergency service organisations. In the early morning of 3 December 2003, the main cause of Telstra's delays in call handling was caused by delays in answering by Emergency Communications Victoria call-takers.

The following extract from the ACA's preliminary report shows that 000 answering delays were caused by downstream delays in call-handling by Victorian ESOs.

> Figure 4 shows the average call holding time for calls to Victorian ESOs during each half-hour period from midnight. While calls for Victoria Police and MAS[9] were generally connected under 1 minute 10 seconds and 1 minute 50 seconds respectively, the time taken to transfer calls to the ECV call-takers responsible for MFESB calls continued to increase as more and more callers to 000 sought assistance during the storm.

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[6] Australian Communications Authority (February 2004) above, at p8.
[7] Metropolitan Fire and Emergency Services Board
[8] ibid, at p9.
[9] Metropolitan Ambulance Service

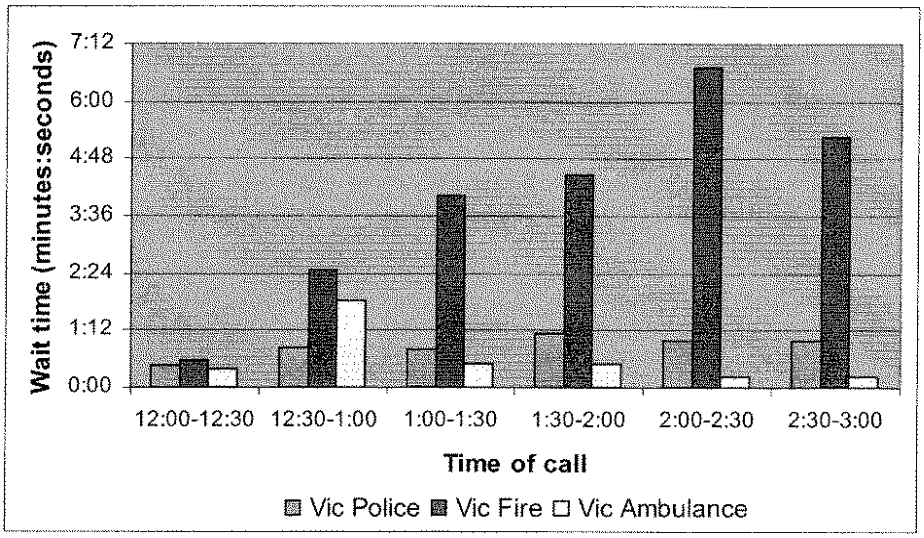

Figure 1: Average wait time for connection to a Victorian ESO — morning of 3 December

The single longest holding time for a call to:

- Victoria Police was 11 minutes and 28 seconds for a call made at 1:52am;
- MAS was 7 minutes and 12 seconds for a call made at 12:33am, although the caller hung up after 2 minutes and 7 seconds; and
- MFESB was 41 minutes and 37 seconds for a call made at 2:21am, although the caller hung up after 13 minutes and 29 seconds.

This compares to an average holding time of less than 16 seconds in normal circumstances. As noted earlier the Telstra call-taker will still complete the transfer of calls where the caller hangs up prior to connection to ensure that information about the potential emergency is still provided to the requested ESO.[10]

All Telstra processes and procedures were operating as expected and functioned properly.

After consultation with the ACA's Emergency Services Advisory Committee, which is constituted of members representing various state and territory emergency organisations, telecommunications carriers and emergency call persons, a number of recommendations were made by the ACA in its preliminary report to improve the operation of the Telstra emergency call centres following this incident. Many of these recommendations have already been implemented, as outlined in the ACA's final report, such as the introduction of recorded voice announcements to alert callers that they have successfully connected to 000 so they will not hang up and redial to re-enter the 000 call queue.

5. **Whilst analysing the calls made by the Gilmore residents, the ACA concluded that there was no evidence to substantiate reports being made by three callers that some of their calls to 000 on 3 December 'rang out' before being answered. The ACA also concluded that there was a satisfactory explanation. Is it true that in the report, when presented with conflicting accounts of that night's events from Canberra**

[10] Australian Communications Authority (December 2003) above at p20.

residents and from Telstra's call records, the ACA simply decided to agree with Telstra?

As explained in the following extract from the ACA's final report, the ACA investigated extensively reports from callers that calls had 'rung out'. All reports where the ACA was able to identify the person who had made the report were followed up with a face-to-face interview. These interviews were conducted within eight days of the incident. This demonstrates the ACA's commitment to investigating these reports. All records of interviews were subsequently confirmed with interviewees.

> As noted in the preliminary report, two of the six Gilmore residents that attempted calls to 000 to report a house fire around 2:00am on 3 December 2003 reported that they had hung up and redialled because they believed that their calls had 'rung out' after the ring tone reportedly changed. In Conder, ACT, a family reported that two of its calls to 000 rang out around 2:20am.
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> The ACA has investigated these reports and the potential circumstances in which a 000 call could ever ring out or be perceived to have rung out due to a change in ring tone. Among other things, this has involved the analysis of the network traffic records for the relevant callers. Network traffic records are produced automatically by the exchange for each call attempt made by a caller except where a caller dials a number that the network does not recognise (eg. 008).[11]
>
> ...
>
> In addition to analysis of Telstra's network traffic data and call records, the ACA has also investigated the potential circumstances that could cause changes to occur in ring tone, calls to 000 to ring out, or calls to 000 to be perceived to have rung out.
>
> To ensure a high quality and reliable emergency call services, calls to 000 are treated differently to non-emergency call traffic. All calls receive ring tone generated by the originating exchange and are subject to a 90 second time supervision which causes calls to time out if the call is not answered within 90 seconds.
>
> This 90 second time supervision is immediately cancelled for calls to 000 once the call reaches one of the four terminating exchanges that are dedicated to the handling of emergency call traffic. This typically occurs within a few seconds of the caller dialling 000.
>
> For calls to 000, the terminating exchange sends an answer signal to the originating exchange that cancels the time supervision. Once the time supervision is cancelled, the originating exchange ceases to provide the caller with ring tone. From this point the terminating exchange is responsible for providing the caller with ring tone until the call is answered by a Telstra call-taker.
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> These arrangements are designed to ensure that calls to 000 do not time out and extends the time that a call to 000 can potentially wait to be answered from 90 seconds to more than 30 minutes[12].

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[11] Australian Communications Authority (February 2004), above at p14.

[12] If a call had been waiting for more than 30 minutes, it would be automatically rerouted to the alternate 000 call centre to circumvent any node-dependent queue congestion.

Although it may be possible for the change in the provision of ring tone (from the originating exchange to the terminating exchange) to be perceptible to an attentive caller, as this change-over occurs within the initial seconds of a call to 000, it is unlikely that this would have been the change in ring tone that callers reported that they heard on 3 December 2003.

If a wrong number was dialled instead of 000, that call would be subject to the normal time supervision limitation and would 'ring out' if unanswered after 90 seconds. While this would have explained the reports of calls 'ringing out' on 3 December 2003, the Telstra network traffic records in Tables 1, 2 and 3, show that no wrong numbers were dialled by these callers.

Despite the extraordinary volume of calls to 000 on 3 December 2003, the volume was not great enough to overload the terminating exchange, to cause a failure in the cancellation of the 90 second time supervision or to create any change to the consistency of the ring tone. Telstra noted that the 000 call traffic load levels on the night of 2/3 December 2003 were modest compared to the 000 call traffic loads associated with the recent Canberra bushfires and severe Sydney hailstorms. Telstra advised that there were no complaints about ring tone performance or instances of calls "dropping out" or "ringing out" during those severe events.

During the peak of call activity on 3 December 2003, there were 1,472 calls to 000 over the course of half an hour. The emergency call service is dimensioned to accommodate up to 1,240 calls to be made to 000 *simultaneously*. Such dimensioning makes it extremely unlikely that a call to 000 would ever receive an engaged signal unless there was a network fault causing the signal.

The potential for a network fault to have caused the reported changes in ring tone has also been examined. Both Telstra and the vendor of the special emergency call exchanges have confirmed that there are no known fault conditions or circumstances that might have led to the changes in ring tone that the callers reported that they heard on the 3 December 2003.

The ACA has not found any evidence to support the reports made by callers on 3 December 2003 that the ring tone changed significantly or that calls to 000 'rang out'. The ACA notes that the Telstra network is designed to safeguard against such occurrences.

The ACA does not propose to investigate these events any further, but will monitor future events related to the 000 service to examine whether there are any reports of a similar nature. Should there be a recurrence of these reports, the ACA will, as appropriate, investigate the reports at that time.[13]

6. Whom did the ACA interview with respect to this inquiry? I am advised that one of the people who were interviewed was the Gilmore family's neighbour. Is that correct?

The ACA conducted six interviews with neighbours of the family whose home was destroyed on 3 December. The ACA has the name and contact details of the

[13] Ibid at pp15-17.

interviewees, but has not provided their details for privacy reasons (which is why they were not named in the ACA's preliminary and final reports).

The interviews were conducted with all neighbours that the ACA was able to identify who attempted to call 000 regarding the Gilmore house fire. Interviewees included two neighbours across the road from the Gilmore residence, two from an adjoining street, and one from another street in a house with an elevated position which provided a view of the house fire.

There was no response from the next door neighbour referred to by Senator MacKay despite repeated requests for contact by the ACA.

The following extract from the preliminary report shows the call records for the neighbours surrounding the Gilmore house fire.

> Table 1 shows how many calls each neighbour made and how long they waited for their call to be answered, based on network traffic data obtained from the Telstra[14] exchange in Gilmore, ACT. The average time spent waiting by these callers was 45 seconds.

Table 1: Calls made by Gilmore neighbours to 000

Name	Number of calls	Time spent waiting for 000 calls to be answered by Telstra (minutes:seconds)
Neighbour 1	7	0:30, 0:29, 0:44, 0:10, 0:23, 0:49, 1:04
Neighbour 2	1	1:47 (call answered by Telstra)
Neighbour 3	3	0:18, 1:20, 0:56
Neighbour 4	2	0:02, 1:09
Neighbour 5	2	0:29, 0:30
Neighbour 6	5	1:38, 0:26, 0:16, 0:55, 1:02

> The successful caller (Neighbour 2) made only one call to 000 and waited the longest for the call to be answered. If the first call to 000 that was attempted that morning was answered, the ACT Fire Brigade may have been alerted to the fire a few minutes earlier.[15]

7. That neighbour [the next-door neighbour in question 6], I am also advised, drove to the Chisholm fire station to alert fire fighters following problems getting through to triple 0. Is it the ACA's contention that his assertions were incorrect?

According to the statements of other witnesses, the Senator is correct in stating that the next-door neighbour drove to the Chisholm fire station to alert fire fighters following problems getting through to 000. However, this was not a matter independently investigated by the ACA, for reasons indicated in the previous response.

8. In its report did the ACA establish at exactly what time the first triple 0 call was made by the Gilmore residents regarding the house fire?

The first call regarding the Gilmore house fire was made at 1:52am by the next door neighbour to the fire. As outlined in the preliminary report:

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[14] In its capacity as a carriage service provider.

[15] Australian Communications Authority (December 2003) above, at pp23-24.

In all, the neighbours made 20 calls to 000 from six telephones between 1:52 and 2:05am, of which only one was answered by Telstra and successfully transferred to the ACT Fire Brigade. [16]

9. I want to know exactly what time any triple 0 calls concerning the fire were actually answered by a triple 0 operator. I notice from a cursory reading that this information is not readily available in the report.

In its preliminary report the ACA stated:

> Figure 6 shows the time at which each of these calls was made and the time the caller waited for the call to be answered before hanging up. Included in this figure is the answered call which was made at 1:59am and was answered after a wait of 1 minute and 47 seconds (107 seconds). [17]

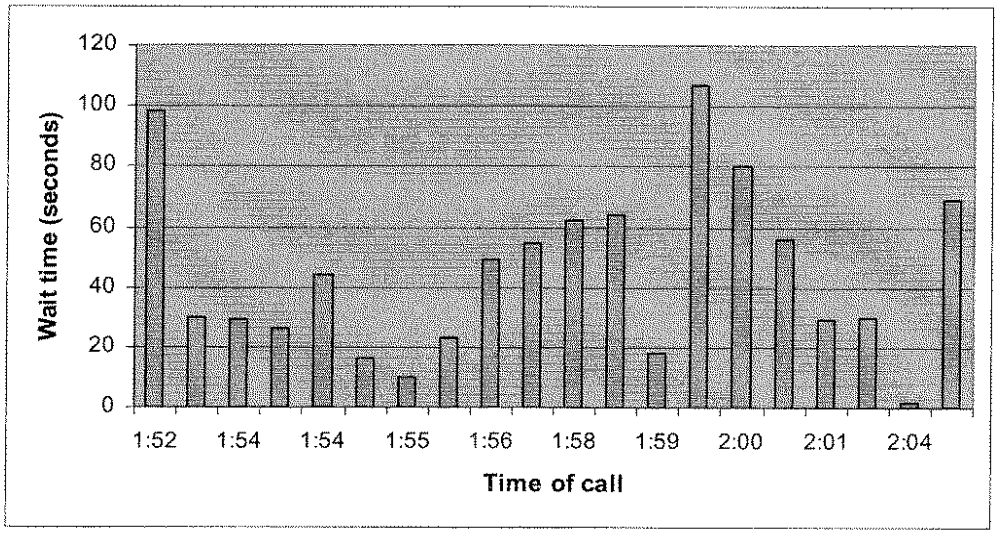

Figure 6 - Wait times for calls to be answered

The successful call was made at 01:59:52am, and answered after a wait of 107 seconds. It was therefore answered at 02:01:39am. The call was completed after 145 seconds (02:02:17am), following the reporting of the incident to the ACT fire brigade.

All other calls to 000 regarding this incident were terminated by the callers before they could be answered.

10. Is the ACA aware of allegation in Western Australia of the transfer of emergency calls being delayed ... from Telstra's Melbourne and Sydney call centres because staff in those centres are unfamiliar with Western Australian place names?

The ACA is not aware of any such allegations.

The ACA occasionally receives complaints about Telstra call-takers being unfamiliar with place names, and investigates these complaints as a matter of course.

Telstra call-takers are not required to be familiar with specific locales to transfer calls. Telstra practice is that if a call is made from a fixed line, the call-taker will confirm with the caller that the calling line identification details provided to the call-taker, including address, are correct. Where a call is made from a mobile phone, if there is a

[16] Australian Communications Authority (February 2004), above at p23.
[17] ibid.

problem with the location name the call-taker will ask the caller to spell it. If they cannot, then the caller will be asked for their next nearest town and connected based on this information. If all else fails the call is connected to the relevant state capital city.

11. Are you aware that Telstra is downgrading access to special triple 0 ring times for emergency workers in Western Australia?

The ACA is not aware of any such downgrading, but would investigate on receipt of further information.

It is important to note that the Telstra emergency call service is a national service, operated on a national basis, and the quality of service provided is the same for all states and territories.