

Telecom Australia

Minute

File HA-AC 4/1/18 Subject GRADE OF SERVICE COMPLAINT
MR ALAN SMITH 055-26 7267

Phone 055-73 0200

From [REDACTED]
CUSTOMER SERVICES MANAGER
HAMILTON - VIC/TAS REGION

To [REDACTED] - NETWORK OPERATIONS
[REDACTED] - FAULT BUREAU VIC/TAS

Please find enclosed documentation in regard to a Grade of Service Complaint from Mr Alan Smith of Cape Bridgewater.

Our local technicians believe that Mr Smith is correct in raising complaints about incoming callers to his number receiving a Recorded Voice Announcement saying that the number is disconnected.

They believe that it is a problem that is occurring in increasing numbers as more and more customers are connected to AXE.

Can you please investigate this problem and provide me with a written reply so as I can forward this to Mr Smith and our local Federal Member, before what is already a difficult situation, gets right out of hand.

[REDACTED]
Customer Services Manager - Hamilton

2/7/92

16A

[PROOF COPY]



COMMONWEALTH OF AUSTRALIA

PARLIAMENTARY DEBATES

SENATE

Hansard

ESTIMATES COMMITTEE A

FRIDAY, 25 FEBRUARY 1994

CORRECTIONS TO PROOF ISSUE

This is a **PROOF ISSUE**. Corrections that honourable senators suggest for the Bound Volumes should be lodged with the Assistant Chief Reporter (Senate), Department of the Parliamentary Reporting Staff (Facsimile (06) 277 2977), as soon as possible but not later than Friday, 4 March 1994

BY AUTHORITY OF THE SENATE
CANBERRA 1994

[PROOF COPY]

16 A

Senate Estimates Hearing - 25 February 1994

Telstra Corporation Limited

Senator Alston asked the following Question on Notice:

25. An Internal Telecom Minute in relation to Mr Alan Smith of Cape Bridgewater states "Our local technicians believe that Mr Smith is correct in raising complaints about incoming callers to his number receiving a recorded voice announcement saying the number is disconnected. They believe that it is a problem that is occurring in increasing numbers as more and more customers are connected to AXE" (Attachment 1)
- a) Could you explain why more problems are occurring as more and more customers are connected to the upgraded AXE exchange and has this problem since been rectified? If not, why not?
 - b) Could you advise how widespread this problem is with other exchanges which have been upgraded to AXE?
 - c) As Telecom intends on upgrading all exchanges to AXE by 1997 does it expect the same problems to occur as outlined in this minute?

Answer

The issue referred to relates to the procedures for the initial loading of data into AXE exchanges which, at the time, did not ensure a centralised approach. The problem arose from the method of preparing and verifying routing data for loading into AXE exchanges, particularly as more small analogue exchanges were converted to digital. Network Operations management was already aware of the need for centralisation and tighter control over verification and was in the process of developing this when the fault report from Mr Alan Smith was received. A two pronged approach has been implemented to improve the processes:

- 1) The Data Production Group underwent a quality accreditation process to ensure that the data received by the Data Cells in the field locations was error free.
- 2) The number of groups loading these data changes into the AXE sites was significantly reduced. In country Victoria, it was reduced from 40 to 5 and it is planned to be further reduced.

The substantially reduced numbers of staff involved allow better training and control procedures to be implemented and there is no record of any further faults of this type occurring in the Country Victorian network.

In summary, there was a single fault incident which affected Portland AXE Exchange for a short period of time. This was not a generic problem in the network, but reflected the need for improved verification in the data preparation and loading procedures relating to AXE exchanges. Revised procedures were introduced promptly.

- a) The reference in Question (a) is considered to relate to the potential for loading errors if verification procedures for routing data were not tightened.
- b) This issue is now believed to be resolved.
- c) The new procedures now successfully implemented will ensure that this particular problem does not recur.

Dwyer, Kevin

From: Dwyer, Kevin
To: Gamble, Peter
Cc: Humrich, Alan
Subject: RE: Software query
Date: Thursday, 24 February 1994 11:07AM

Peter,

You are quite correct in your thought that the anecdotal reference applies more to AXE than ARE-11. 'Lockups' are generally well-known as a problem in AXE exchanges, not only in Australia but in overseas countries as well. A number of upgrades have included software which would reduce the incidence of lockups.

There is nothing to add to my previous notes on ARE-11 exchanges concerning claims of 'incompatibility' problems.

Regarding the problems in AXE:

In the NASM database (which has a record of faults reported from AXE exchanges, dating from 1988 when it was introduced, although it was not in widespread use till 1992/3) there are 105 reports of Lockups affecting customers. Two of these reports refer to PBX services, but there are no reports referring specifically to 'Commander' services.

The TR database (Trouble Report system controlled by TNE to monitor problems reported, passed to Ericsson, and fixed by Ericsson) which was used prior to NASM for all records of faults does show lockups on AXE equipment which would have affected customers and PBX functions, but does not provide any realistic count of problem occurrences. It does not record any lockups specifically related to 'Commander' systems.

As a general comment, if the first line was locked up and calls allowed to flow on to the other lines, then no calls would be lost until all lines were busy, so I fail to see how an estimate that "call loss could be up to 15%" could be made or repeated with any degree of integrity.

There is also another NSIS database which would contain records of AXE faults which I have not checked yet but which I believe has records of large numbers of lockup instances affecting individual customers lines. I am reluctant to initiate a search of the NSIS database at present as the faults recorded therein would have no bearing on the CoT services in question, unless the fault occurred on their individual line.

Kevin,

From: Gamble, Peter
To: Humrich, Alan; Dwyer, Kevin
Cc: Wagland, Fran
Subject: Software query
Date: Thursday, 17 February 1994 7:04PM

Fran, I am not sure where Alan is - please pass to him if he is on the 24th floor.

A13980

Kevin, Alan

Kevin, I did not use your comments on software (COMPATBL) at this time as they didn't seem relevant to the additional information that Austal have provided. John MacMahon writes as follows:

"I have references to Ericssons having considered a lock up fault which was occurring where the first line would be locked out and this would allow calls to flow to the other lines. It was said to arise through the

16 B

incompatibility of exchange software and Telecom's equipment. Ericssons apparently provided a solution and advised that particular Commander systems were most vulnerable. Ericssons are said to have suggested that call loss could be up to 15%.

Any thoughts on this new line? It sounds a bit like AXE rather than ARE to me!

Peter.

A13981

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GEORGE CLOSE & ASSOCIATES

DATA-TELECOMMUNICATIONS CONSULTANTS

ADDENDUM ONE

- **Top Ten List Problems in AXE Exchanges**
- **“Restarts with Easy Call” and multiple other problems**

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TOP TEN

Fault Description.	SE/TR	Status	APT/ APZ	Comments	EPA Contact	Telecom Contact
CAW LU	8331 TA-S335-0931	EPA 28/6/93	T	11 Vu in August. No correction area available.	King Fo	Craig Tucker
H'19 LI2 LU	9165 TA-S335-0978	EPA 11/8/93	T	Post 4A4/3R7. Trap patch version 2 at WAMX.	So	Bob Drinkwater
GSMUP Lockup CNA4	9469 TA-S335-0996	EPA 31/8/93	T	Post CNA 4. Dump sent to EA Waiting analysis.	King Fo	Neil Spencer
CP ERROR 23	4621 TA-S155-0080	ATC 17/6/92	Z	Monitoring going on. Initial observe, caused by heavily load RIA RPs.	So	Murray Hughes
F/C 1305 DUE TO BLRPE	7645 TA-S112-0071	ATC 8/4/93	Z	SE is FINISHED. Corrections available. Limitations on correction area.	Birgitta Ervik	Mahar Mansur
F/C 1803 Reload	9647 TA-S115-0060	EPA 7/9/93	Z	APZ211-10 P1. Investigation ongoing. Trap Patch to be used	Birgitta Ervik	Mike Roderick
AOM Link bounce	8063 TA-S155-0132		Z	First package to be reloaded and more tests performed.	John Willenston	Soon Tek
DUMP LOCKUP		EPA 17/8/93	Z	Many lockups at DKNJ. SE to be advised.		Murray Hughes
TCAJI DNW	6923 TA-S335-0719	EPA 4/1/93	T	With design.		Dave Connolly

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SEP 29 '93

10:29PM N. S. I. P. MELBOURNE 613 6544601

ATTACHMENT 1

REPORT ON KNOWN PRINCIPLE CAUSES IN THE NETWORK AT
LARGE GIVING -

DROP OUT, NOT RECEIVING RING (NRR), BUSY TONE WHEN NOT
BUSY (BWN) AND ANSWER NO VOICE (ANV).

The following list identifies the main equipment items known to be potentially involved in network fault conditions causing Drop Out, NRR, BWN and ANV:-

- *LMUX - (2Mbps Systems) Can give wrong numbers (WN's), cut offs (C/O's), poor transmission, one way conversations which manifest as ANV's or CNV's (see attachment).
- *FIR's - Faults in devices (usually wear and tear) can give wrong numbers (WN's), NRR, ANV's & CNV's
- *SR's - Faults in devices can give NRR, ANV's, and CNV's.
- *AXE Exchanges - Can cause symptoms of ANV and CNV as a result of under-dimensioning of Software Devices (eg. PD, CL etc.) causing one burst of ringer.
Time Slot slippage in BT7 Devices (faulty DIP's) causing ANV's, CNV's and poor transmission.
See also the attached list showing the current Top Ten design issues
- * Customer Equipment - Customer Premise Equipment has been known to cause symptoms of CNV's, ANV's, WN's, C/O's, NRR and BWN's. eg. T200 and Commanders - due to slow recognition of calling A party release.

K40603

16c

Dwyer, Kevin

From: ~~Ericsson, Peter~~
To: ~~Ericsson, Peter; Dwyer, Kevin~~
Subject: ~~Ericsson - Valley~~
Date: Wednesday, 22 June 1994 11:57AM

You may recall that we were trying to find a reference in our software problem data bases that matched a query from John MacMahon at AUSTEL. We were looking, as I recall for a problem that might have caused a compatibility problem with CPE.

We first searched the ARE data base and then the AXE data base with no luck. AUSTEL accused us of looking with too narrow a search criteria, but would not give us any real details to go on.

The "Telecommunications Survey Analysis and Report" recently lodged by Ann Garms provides the following handwritten file note:

"Ref: 1993/16

May 1993

Rob Brooker of Ericsson Australia advised that Telecom had a problem for a long time with an incapability problem with computer software in their exchanges and telephone equipment. The call loss resulted in a 50% loss.

Took 1st of all along time to identify. After some time Ericsson were asked to solve the problem. Took them 9 months to identify. Rob Brooker advised that this was substantially delayed because Telecom did not place this problem in the top 10 faults."

Kevin, does this shed any more light on it ?

If not, can I suggest that you contact Rob Brooker directly and get his side of the story. As we will want to present this as part of our rebuttal of Ann Garms claim, we will probably need to eventually get a statement in writing.

Peter.

*Hold off calling Rob Brooker. He gave some time ago to Alan Hummich, & Alan will check details of what he was on about at that time.
The 'top 10' reference implies AXE, while GARMS problems were ARE-related and that was the implication in the request from Nilsen for us to investigate.
Insert further info from A.H.*

*For coming, with Notes & references from Ericsson
copy of questions from GARMS to BROCKER
" " response " BROCKER to GARMS.*

A13725

16D

Internal Memo



To Difficult Network Fault Customer Co-ordinators (see list)

From Peter Gamble
Manager Planning

Commercial and Consumer

File

Date 29 November, 1993

Commercial Operations Support
8/242 Exhibition Street
Melbourne
Vic 3000
Australia

Subject DNF Customers - Service Data

Telephone (03) 634 8436
Message Bank
Facsimile (03) 634 8474

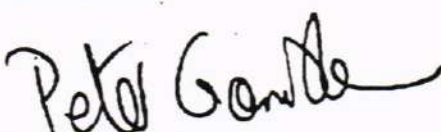
Distrib. Ken Beattie, Regional General Manager, Queensland (Fax: 07 210 0847)
Rosanne Pittard, Regional General Manager, Vic/Tas (Fax: 03 562 1926)
Janet Sayer, Regional General Manager, NSW (Fax: 02 397 4155)
John Harrison, Area Manager, Canberra Service Centre (Fax: 06 257 3737)
Graham Powles, Customer Service Manager, Queensland
Cheryl Prins, Customer Service Manager, Vic/Tas (Fax: 03 562 0765)
Ian Redfern, Manager, Sales Branch, Vic/Tas (Fax: 03 574 9461)
Ed Blake, Manager, Operations Support, Commercial
Don Pinel, Manager, Austel Inquiry, Commercial (Fax: 07 221 7274)

As part of the resolution of a series of Difficult Network Faults, your assistance is sought in urgently checking the service data for the customers for whom you are responsible. The information is being used to arrange and co-ordinate a detailed set of Customer Access Network measurements and the attached list represents the best information available in this office at this time and has been compiled from a number of sources. The information required is all service numbers that enter a customer's premises, together with any information regarding the CPE that is connected to that service (eg Commander System, T200, fax line, Gold Phone etc).

Where the service includes a Rotary (or PBX Working) facility, the directory number and all of the auxiliary numbers should be specified. It is noted that there is a "myth" circulating in some areas that "AXE Rotary services do not have auxiliary service numbers". This is not the case as is evidenced by some of the listings in the attachment. It would also be useful to know (for AXE services) whether the hunting arrangement was sequential or "random". This latter case could give the impression (depending on the CPE equipment) that calls were somehow being "missed".

The complete list of all service numbers is required to ensure that all services entering a customer's premises are measured and analysed. Where more than one line enters the premises, it is useful to compare the measurements on all lines, and important information has been gleaned from this process, *even though the customer may have only been reporting difficulties on one of the lines*. Difficulties have recently arisen where only one of the two lines entering a remotely located customer's premises were measured because not all of the service data was readily available.

Would you please confirm the details of the relevant service to me in writing by COB Tuesday 30th November 1993. Should you have any queries, please do not hesitate to contact me.


Peter Gamble


R09919
16 E

30/10/88

10/114

SUBJECT: GOLDEN MESSENGER

PHONE: 428 8933

FROM: P. Killeen

To
MANAGER - BCS NORTH (VICTORIA)
Attention: Mr T. Hoskins

S

Regarding the service received by customers off North Melbourne exchange, the following information is provided.

At the last meeting between Telecom and Golden Messenger (G.M.) resolved that Network Investigations would assist with problems where customers could not reach G.M. , and tah G.M. would provide a list of such customers.

IS

We have only ever obtained one list of customers names and numbers on the 27/7/88. This highlighted that 10 of the 12 customers were served by AXE exchanges, the remaining 2 by ARE. All customers reported that they had experienced "engaged tone" with 11 of the 12 reporting the cases on or before 6/7/88. It is presumed by NI that this may be busy tone or congestion tone as customers can generally not discern the difference.

It was found that at or before this time there were changes made in the trunking of IDN originated traffic to North Melbourne, and Footscray DSC realizing that the IDN exit route from Footscray Node to North Melbourne was severely congested initiated action to increase the number of circuits. This route has subsequently been increased from 37 circuits to 57 at 5/7/88 and then to 81 approximately one week later.

No further complaints have been received by this office from G.M. at that time.

More recently the route has been increased to a total of 111 circuits. Metro Network Engineering advise that this route is designed to be 180 circuits for the 8th Axe Bulk Order. Current traffic readings show that the 111 circuits are carrying a TCBH traffic of 86 Erlangs which means it would be offering a grade of service of better than the designed level of 0.002. However the traffic is increasing and discussions between this section and MNE has resolved that the route will be increased by a further 10 to 15 circuits, depending on GV inlets and MUX availability at North Melbourne.

R30014

16F

Stockdale, David

From: [redacted]
To: [redacted]
Subject: RE: Further to my original message.
Date: 19 August 1993 9:23

David,

Incidences of LI devices held in state busy are quite common in both mainstream and rural and require Test System procedure to release them.

Often faults are reported to NSS Field support involving locked up devices e.g. SULTD/SLCT or BT in which the involvement of an LI device may not be evident. Call traces do not always reflect the complete picture. RE individuals, for example, may have multiple users. Interim Operating Procedures address these lockups, with recommend call traces, having particular reference to look for PD individuals which may incur ongoing metering after the termination of a call.

→ Lockups not deemed to be affecting customer services are not given priority over those that do.

When lockups of this nature are subsequently cleared, devices not evident in call tracings may be cleared as a matter of course.

Lockups are not automatically cleared by the system if they are under external control. E.g. requiring a clear forward signal from a supervisory device as you described in the case of SR-B or a locked up junction relayset holding a BT device. If other software devices (e.g. CJ, CL, RE, PD, CAW, MCT) are involved, they too will not be released.

This is a possible scenario under which LI devices may be held in state busy. I'm sure others exist and as CAW penetrates further into the Network (particularly in AXE Rural), the incidence is likely to increase. Such lockups have been addressed with Ericsson Australia but solutions are slow in coming due to the difficulty in trapping them as they occur. We don't have the luxury of LI audit or ROSI as is the case with /66 and we are not likely to.

Regards

[redacted]
For manager NSS Central West

Subject: Further to my original message.
Date: Monday, 16 August 1993 5:36PM
Priority: High

I have been discussing the sequence of events on this call with a colleague and we have realised the probable scenario for this odd call sequence.

The SR - B at Horsham will be set for Last Party Release and will not therefore provide a clear forward should the A party hang up. When the B party hangs up the call, the charging point exchange does not pass the B party clear back to the originating exchange immediately due to the 90 second time supervision period. Even though the A party hangs up after this point, the clear forward does not occur due to the Last Party Release condition at the SR-B, therefore the B party will be held in the "awaiting time supervision expiration" phase for 90 seconds. Once the time supervision period expires a force release will be generated from the charge point exchange and the call will be cleared down.

This answers the oddity observed during testing, but my original question still stands: Do you know of any event or sequence of events in a 104 which would result in a call be held or a B party LI be held Busy for an extended period of time (e.g. > 120 minutes)?

I look forward to discussing this with you further, and apologise for not realising the correct sequence of events for the test call before I sent you the original mail message.

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ATTACH 4

AXE software performance since December 1991

After nine months of operating as an AXE cell, it is timely to look at the performance of the AXE software. Listed are figures for each of the nodes we maintain.

<u>LCHF</u> /17	System initiated restarts	9.
	Manual restarts after software faults	7.
	Other restarts (CNA/ISU)	6.
<u>SPNF</u> /17	System initiated restarts	9.
	Manual restarts after software faults	18.
	Other restarts (CNA/ISU)	4.
<u>LCHG</u> /36	System initiated restarts	3.
	Manual restarts after software faults	4.
	Other restarts (CNA/ISU)	3.

These numbers indicate to me the poor standard of Ericsson software. For as long as we have had AXE we have been having software lockups and almost every CNA/ISU that comes along promises a solution to this problem but they still occur. ←

In the last while we have had a return to the bad old days with software upgrades causing disasters. SPNF was loaded with CNA16 and had to be reverted back because of a software fault in block IT3 where an Ericsson patch had replaced a Telecom patch. Attempts to load CNA16 and some corrections into LCHF were an absolute disaster. The first attempt was foiled after five restarts and a reload back to the previous CNA between 5.30 am and 6.47 am. The second attempt resulted in a small restart at 1107 and a large at 1112 followed with a large at 1258 to revert back when the previous CNA was loaded into the standby side and a side switch.

Incomplete.

L23848

16H

File:

Subject: Recorded Voice Announcement

Phone: 8375057

From: Mick Ryves

To:



The network problem of receiving a Recorded Voice Announcement along the lines of "This number has been disconnected, please consult your telephone directory", to current telephone numbers has at last been identified with some degree of certainty.

This problem has been evident for some considerable time and has been progressively getting worse. The illusive nature of this problem has been the main reason for the lack of results of many investigations into this problem. However thanks to Bill Hinds & Chris Pitman from Sunshine Coast EMG for their extensive efforts, the problem has been identified as follows :-

The problem seems to occur to calls that suffer a change of discipline. i.e. Where a call from an analogue to an analogue exchange is routed via an AXE exchange or any combination thereof. If a call switches via an AXE exchange and the first choice route is full, an alternate route is selected, as a result a second restart is required from the analogue origin. The ZOO digit sent forward for charging purposes is analysed as the first digit of the B subs number, whilst the correct parameters exist on the I/C route. This problem appears to apply predominantly to /36 exchanges but may well involve /17 exchanges also.

The progressive increase in this problem reflects the increasing use of AXE as a network switching medium, and is a serious cause of dissatisfaction to our customers. This problem has been referred to National Switching Support for action, however as this is most likely a national problem and of some significance. I feel that an adequate priority should be assigned to the problem.

R09660

16-1

Internal Memo



To [redacted]
Grp. Managing Director, Commercial &
Consumer

Network Investigation SA&NT
Networks & Interconnect
Network Operations Division
Network Products Business Unit
Australia

From [redacted] T
PTT02

Telephone [redacted]
Facsimile [redacted]

Subject Fault Management

Date 29 November 1993

File

Attention

I trust the previous correspondence sent early in November has been received. ✓ 10/11 to Ian Campbell see Jan 1994 a block

There is so much opportunity for real improvement in Telecom; the difficulty is knowing where to start and how to best achieve genuine improvement. Certainly change for the best is unlikely to be realised if there is not a complete and intimate knowledge of the industry by those formulating the changes.

* The attached report mainly relates to the Fault Management process; its deficiencies, and concerns about the direction it is heading. My interest is not recent nor opportunistic; it would be easier to back off but that would kill work interest. My research and reading has been largely in my own time but is of reasonable breadth. The undertaking of the Associate Diploma in Accounting was motivated by the perception this knowledge was wanting in the Telecom engineering discipline at least. It also became obvious, if I was ever to make a real contribution, then knowledge in finance, particularly with respect to financial decision making and management, was required. It is also clear if this contribution is ever to be realised, then I must act now; hence the above quasi job application.

As the performance quality of the network is directly translated to customer satisfaction and cost and quality of Fault Management, caution is also expressed about the decision on which switch should be used for FMO. I have long held the view the AXE switch provides an inadequate and crude Fault Analysis & Diagnostic tools. Attempts to have

improvements incorporated have been acknowledged, but nothing has changed. I consider the minimum additional AXE requirements for effective fault investigation are:


- The capability to monitor detail of incoming traffic to customers connected to AXE eg. time of call, duration of ring and conversation, identification of calling party.
- The option to remove the need for switch hook flash or call time out with the Malicious Call Trace facility.
- The capability to dump to file, on a needs basis, information relating to call establishment in the switch.
- The inbuilt capability to log CCS7 signalling without the need to purchase costly add on test equipment. The importance of this function cannot be emphasised enough; it should be an obligatory requirement in the specification for the selection and purchase of any switch from this time on. - refer pg.5 of the Draft Report previously sent "Telephone Service:- False Fault Reports.

Adding emphasis to this need for the employment of these tools is the large current level of outstanding network faults Phantom Rings, Not Receiving Ring, and RVAs indicating the called customer is no longer connected. It is not possible with present fault analysis tools to easily and quickly determine what are genuine network faults and what is inadvertent customer misoperation, wrong numbers, not listening for dial tone etc.

At present actual network failures as opposed to misoperation cannot be quantified but instances have been confirmed eg. the called party received only a couple of rings, the calling party was traced and queried, they received an RVA indicating the number was no longer connected.

FMO must proceed, but service provision must not be compromised by an unacceptable fault incidence or shortcomings in diagnostic tools if the customer is to be satisfied and costs contained.

T

 (PTT02)
National Network Investigation
Networks & Interconnect
28th November 1993

* REPORT NOT ATTACHED