RADIO SPECTRUM MANAGEMENT

Electric Fence Interference

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MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
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Introduction

If you're hearing electric fence clicks on your telephone line, it's virtually certain you'll be getting reduced Internet performance on your dial-up connection. This is because the clicks cause errors in the modem data stream, which means the modem is always re-transmitting data. This will happen even on a perfectly good telephone line.

This document explains how electric fences cause the clicks, what you can do about it, and how to get the best performance out of your dial-up connection.

Amendment History

Issue	Date of effect	Description of amendment
1	Late 1980's	First edition by Telecom.
2	July 2014	Minor editorial changes.

Contents

Your fence could be the problem

Your electric fence could be interfering with your Internet access. The tell-tale signs are:

- Clicks on your phone line.
- Slow or unreliable Internet connection.

Finding the problem fence

It can sometimes be hard to find the electric fence that is causing the problem. It could be anywhere along the path of the telephone cable - from where it starts at the telephone exchange or roadside cabinet to the customer who is furthest away.

Often the fence owner does not get interference on their own line, but their neighbours do - and those neighbours could live several kilometres away.

Fixing the problem

Complete this five-step electric fence check if your fence is causing the interference.

Please seek expert advice before constructing, extending or altering electric fences to minimise the risk of them interfering with your or your neighbour's phone line.

Do not be tempted to increase the size of the electric fence energiser to overcome poor electric fence performance due to the lack of fence maintenance. Instead, fix the faults on the fence.

Find out more

A Standards New Zealand standard on the installation and operation of electric fences, ASN25 3014, is now available. Just go to the Standards New Zealand website (www.standards.co.nz) and type '3014' in the 'Name, Keyword or Number' window. Appendix B of the standard describes how to prevent interference to communications cables and is available in PDF format free of charge.

These organisations also provide useful information:

- Tru-Test (www.tru-test.com) - phone 0800 878 837
- Gallagher Animal Management Systems (www.gallagher.co.nz) - phone 0800 731 500
- Federated Farmers (www.fedfarm.org.nz) - phone 0800 327 646

Things you should know

Interference caused to telephone lines by electric fences is outside the responsibility of Radio Spectrum Management and we do not locate problem electric fences.

Five-step electric fence check

Find out where there are telecommunications cables or phone lines on or near your electric fence. This includes both buried and overhead wires and cables. They usually run along, near the roadside reserve, or along driveways. A marker post or grey connection pillar should be nearby. Call Telecom on 124 for help if you cannot work out where they are.

Identify the electric fence wires and connecting leads within 100 metres of the phone lines and running either parallel or nearly parallel to them. Long sections running parallel to the phone lines and feeding other fence sections are more likely to be a problem than short sections that go nowhere else.

Check the current in these wires. To do this, you can use a Gallagher SmartFix or StaFix Fence Compass, or a Speedrite Fault Finder or Pakton Power Probe. The current in a well-maintained fence should be less than two amps per kilometre of energised fence line. If it's higher, there could be a short on the fence, too much overgrowth, live wires contacting the ground or old deteriorating insulators.

Find a way to feed the main supply through sections of fence further away from the phone line if, after fixing faults, the current is still too high. For example, feed the power out through fences in the middle of the farm, away from the phone line, rather than through the roadside boundary fence next to the phone lines or cables.

Check the earthing system meets the manufacturer's instructions. Make sure it is at least ten metres from any other earthing system. Also check the energiser, earth electrode connecting lead and output leads are well clear of phone lines.

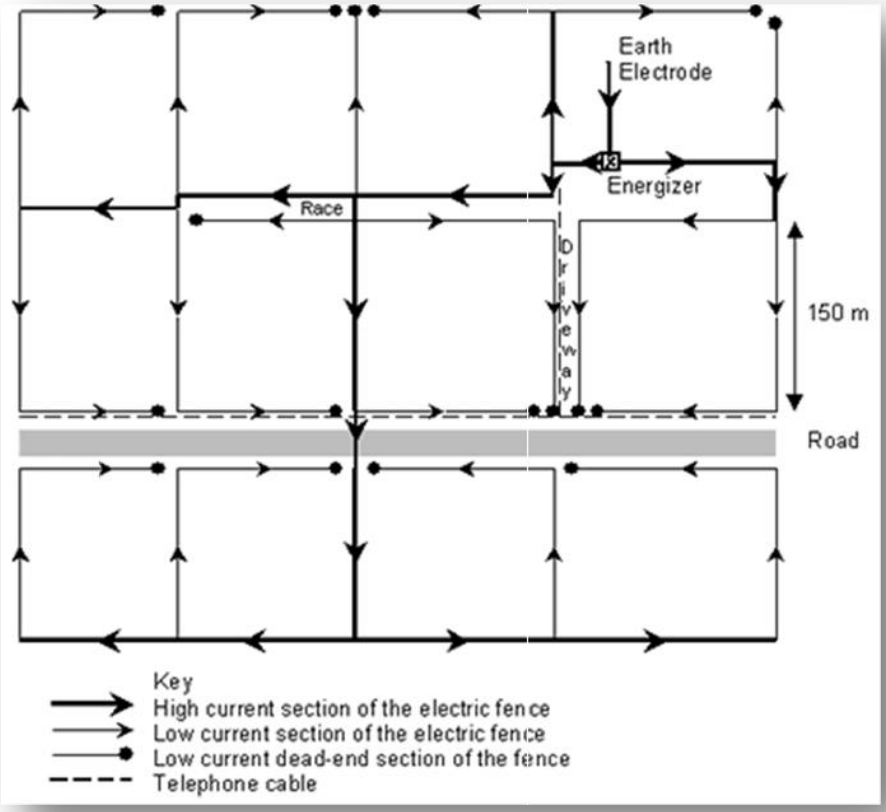
Be careful!

Consult your electrician if you are not familiar working with electric fences.

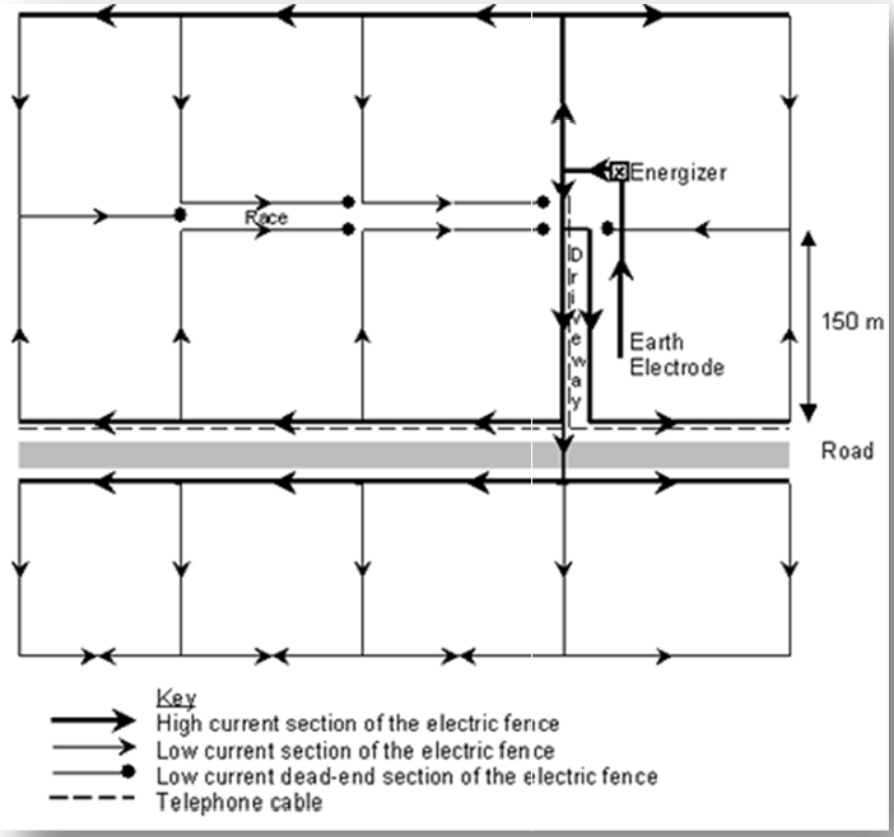
How to lay out your fence

The ideal way to set up your electric fence to minimise interference is to feed the power out from the energiser in a ‘star’ fashion, with no closed loops, and only low currents in those parts of the fence that closely parallel phone lines.

The right way



The wrong way



Find out more

Before buying a new computer or modem, it is a good idea to talk to your retailer about a modem that will work satisfactorily from your premises, particularly in a rural situation.

Other noise interference problems

Here are some quick checks if you have other noise interference on your phone line.

Is it a hum, whine or buzz?

A mains powered appliance - such as a light dimmer, florescent lamp or electric motor - may be to blame.

Is it a harsh static, distorted speech or radio programme?

It may be caused by radio interference from a broadcast transmitter, amateur radio, CB radio, mobile or portable phone, unsuppressed electric motor or welding plant. As telephone lines and customer equipment (other than cordless telephones) are not supposed to react to radio signals, equipment manufacturer advice should normally be sought in regard to screening or filtering to eliminate the effect.

Can you find the noise source?

Check it is the source by switching it off. Then have it checked to ensure it's not faulty, get it fixed or locate it further away from the telephone wiring.