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Submission No. LC/21
Received
Road Safety Committee

BY:.....



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4 October 2007

Ms Alexandra Douglas
The Executive Officer
Road Safety Committee
Parliament of Victoria
Parliament House
East Melbourne
Victoria 3002

Dear Ms Douglas,

Ref: Safer Railway Crossings for Victoria

Further to my letter to your office of 1 August, EV Alert is pleased to provide a detailed proposal for the improvement of safety at level crossings throughout Victoria.

EV Alert is a collision warning system that provides both visual and audible warnings for as little as \$12,000 (approx) for each of Victoria's powered and non-powered railway crossings and approaches. The Victorian Government will be able to improve the safety of all 1628 crossings in Victoria for under \$20M (approx) rather than spending the budgeted \$27M on only 328 crossings.

What does this mean for the Victorian government? Potentially the safest rail crossings in Australia.

EV Alert is an Australian designed and manufactured system that is as effective as the C3 Trans System under trial in the USA, which, I understand the committee is aware of. EV Alert's system has been used for many years by the Queensland sugar industry (rail) and has numerous mining and industrial applications throughout Australia.

I would like the opportunity to provide further information and to arrange a demonstration of our system and I look forward to hearing from you at your earliest convenience.

Regards,

A handwritten signature in black ink, appearing to read "Greg Blackwood", is written over the "Regards," text.

Greg Blackwood
Managing Director
EV Alert Pty Ltd
greg@evalert.com.au

HOW IT WORKS

The transmitters send out a coded 2-part signal when active. The coded signal when detected by a receiver, is decoded by the circuit confirming that part A and part B of the signal have both been received, before allowing the receiver circuit to activate an output relay. This feature safeguards against false alarms caused by any form of external frequency interference. The transmitter also has an inbuilt receiver. This receiver is isolated from the devices own transmitter. The receiver was designed to detect other transmissions in the area and alert the user that another vehicle etc. is in proximity. The standard EV-Alert transmitter has a signal range to 500 metres. An increase in distance of approximately 700 meters total can be achieved by using high gain antennae on both the transmitters and receivers. Distances in excess of 500 metres can be achieved by placing repeaters between initial transmitters and the final, signal-activating receiver.

N.B. EV Alert can readily develop a new transmitter to transmit up to or beyond one kilometre.

In all cases, the frequency selected will enable the system to 'penetrate' most objects such as other vehicles and buildings, which often contribute to accidents by blocking the driver's sight.

Similar systems which use radar or laser devices are unsuitable, as they are restricted to 'line of site' and have difficulty in penetrating buildings, rain, snow or fog, as well as not being multi-directional in their normal applications.

RAIL APPLICATION

As terrain and landscape can differ from site to site and tracks are not always straight, it is beneficial to configure the system to an individual sites specification.

An EV-Alert transmitter is positioned at an appropriate distance down the line on both sides of the rail crossing to be controlled. This transmitter would be mounted on a pole or similar structure in a weather protective cabinet containing the transmitter, voltage regulator and rechargeable battery, timing relay etc. The system can be solar powered or connected into the supply voltage if on a powered line. High gain antennae to maximize signal distance and a solar panel would be fitted externally to this cabinet.

A sensor placed on or at the tracks would be connected to a timing relay so that when the sensor is activated by a passing train it in turn starts the relay which allows power to the transmitter to transmit the coded signal. The timer relay is used so that when the last bogey has passed this point it does not shut the transmitter off but continues to transmit for a pre-determined time to allow the train to fully pass the crossing.

At the crossing, a receiver or receivers would be mounted with the solar panel and antenna mounted atop a pole, with a protective cabinet housing the receiver, batteries and control relay etc. In addition, a strobe light beacon suitable for road use would act as the warning device to road users. Also the crossing receiver can transmit to a rail crossing ahead warning sign positioned on the approach.

The EV Alert transmitters can be set with unique ID's so that when the locomotive signal is received at the crossing and activates the bells/lights Etc, the crossing transmitter can send a coded ID signal back to the locomotive as confirmation that the bells/lights are active.



TECHNICAL SPECIFICATIONS

The transmitters are available in three configurations:

- 12/24VDC for vehicle fitting
- mains 240 volt
- solar powered

System Frequency	70.1 Mhz (standard)
Range	500m radius, nominal
Transmitter Power	10MW
Compliance	SMA – C.Tick N.169
Operating Temperatures	-30°C to +80°C
Operating Humidity	0 – 94%

The transmitter is available in three configurations:

Mobile Unit for Locomotives

Dimensions	120 x 70 x 42 mm
Antenna	Selected according to vehicle type
Power	12/24VDC
Fitting	Inside vehicle

Fixed Position Solar Powered

Dimensions	300 x 500 x 250 mm
Antenna	Normally ¼ wavelength
Battery	Sufficient back-up for 21 days without sunlight (nominal)
Fitting	On existing structure or new pole

Fixed Position 240v – Mains Powered

Dimensions	300 x 400 x 150 mm
Antenna	Normally ¼ wavelength
Power	240VAC
Battery	24 hour back-up
Fitting	On existing structure or new pole

COMPLIANCE

- Compliance – Transmitters are fully compliant. C-Tick approved
- Radio Communication Class – ‘low interference potential device’. Requires no license. Rated output 100 milliWatts
- Power Sources – Most products are 12VDC / 24VDC. Low cost solar or mains units are available.
- In Australia, the approved frequency is 70.1Mhz.

CLIENTS

The EV-Alert technology is currently in use by the Melbourne Metropolitan Fire Brigade, forest & logging industries, sugar cane trams, school buses and mining applications. Some of our clients include:

AUSTRALIA

NEC

Patrick Logistics

Sumitomo

Synchrotron

Australian Paper

Cadbury Schweppes

Deaf Children Australia

Herald & Weekly Times

Inghams Enterprises

Kerang Country Bakehouse

Green Triangle Forestry

Huon City Council

Boyne Smelter

CSR

Rio Tinto

Loy Yang Power

One Steel Distribution

INTERNATIONAL

Evans Grading, USA

GAP, USA

International Paper, USA

Solid Energy, USA

Rhodia, USA

Rio Tinto, Belgium

Alcan, USA



FACT SHEET

Is EV Alert an Australian product?

EV Alert is Australian designed, made and owned.

What is EV Alert?

EV Alert is a VHF short-range coded signal transmitter and receiving system with a range adjustable from 0-500mtrs that has been designed to alert of near proximity of people and/or equipment to prevent collisions and accidents.

What is the difference between EV Alert and other similar products?

Similar products are infrared, which is line of sight or inductive loop technology. The infrared system requires expensive repeaters to vary from line of site transmission, as the infrared beam does not go through solid objects. The inductive loop system requires invasive and messy preparation of the site by cutting into the concrete floor to install the system.

EV Alert uses an Omni directional radio signal, which passes through solid objects such as wood, brick, metal etc. EV Alert also has 2 switching outputs to control any external device(s).

In what types of applications can EV Alert be used for?

EV Alert is not limited to any one application or industry type, for example EV Alert can be used as a collision avoidance device between vehicles to other vehicles, people, fixed or moving hazards, for many differing industries & work places, emergency services and traffic flow applications

What is EV Fork?

EV Fork is a short-range coded signal transmitter and receiver adjustable from 0-40mtrs that has been designed to alert of near proximity of people and/or equipment to prevent collisions and accidents. EV Fork uses a UHF signal to avoid signal bounce in high metal areas such as warehouses with metal racking.

In what types of applications can EV Fork be used for?

EV Fork is not limited to any one application or industry type, for example EV Fork can be used as a collision avoidance device between vehicles as in forklifts, trucks, etc to other vehicles, people, fixed or other moving hazards, for many differing industries & work places. The unique feature of the EV Alert system is its ability to provide a 2-way warning, therefore taking the onus off the driver only to avoid accidents. With EV Alert, pedestrians wearing an EV Alert unit send and receive a signal.

What is the size and weight of the units?

The pedestrian unit is 105mm x 60mm x 20mm & weighs 160g

The units mounted on vehicles are 120mm x 70mm x 35mm and weigh 200g.

Can I tune the system to the distance I want?

Yes, within the ranges of the unit i.e. 0-40mtrs on the UHF system and 0-500mtrs on the VHF system. The transceivers have dip switches for transmit, receive, transceiver settings.

Who can tune the system?

Users may follow basic supplied instructions to make adjustments to the tuning.

Are there limitations to how the system can be tuned?

Only where the range of the system cannot be exceeded (see FAQ No. 23)

Can I add to the system after installation?

The EV systems can be added to at anytime as all components are compatible with each other with no configuration required bringing new units into the network "other than tuning the distance required".

Can the EV system activate other equipment?

The EV Fork transceivers have 2 voltage outputs these can be for a low voltage strobe/LED and/or Buzzer, or to switch a relay for higher voltage/current equipment horns, gates, motors Etc.

Can the EV system transmit an alternative warning signal as the hazard gets closer?

On the dual zone system the transceiver has 2 trim pots allowing 2 signal distances to be set, for example the full strength signal (40mt) when received can activate an indicator lamp, when the second signal is received (10mt) an alarm/buzzer can be activated.