



## **DELIVERING THE NORTH-WEST RAIL LINK EPPING TO ROUSE HILL OR CHELTENHAM TO ROUSE HILL**

### **2. Safety Issues**

Nasty things can happen in the running of trains in long and/or deep tunnels. Train failure can occur through breakage of the 1500 Volt DC contact wire, tangles between the contact wire and pantographs, axle breakage, foreign objects fouling the track, equipment fires, the driver dying or becoming incapacitated at the controls, etc., etc. Imagine any one of these events occurring in an unbroken seven km of tunnel between Epping and Cherrybrook or five km between Cheltenham and Cherrybrook.

A fire in a tunnel, especially a single track one, can see people asphyxiated in minutes. Even without a fire, a significant proportion of the occupants of a passenger train can be anticipated to be incapable of walking anything like two to three km. Others will collapse and/or die in the stress of the situation. Passengers setting out to walk to safety may delay rescuers coming in or be disabled by rescue plant. All of this has happened in the London Underground with its close-spaced stations and despite the relatively low 600 Volt DC track voltage with simple facility for prompt shut off.

London's deep level tube tunnels have been increased in diameter over the years with the most recent ones being 4.8m to accommodate a safe walkway at carriage floor level. Older tube tunnels can but rarely be enlarged to include walkways; although tube tunnels made over to the Docklands Light Railway can and do have walkways added.

The Channel Tunnel includes two single track train tunnels; both connected to a central emergency tunnel - another possibility for the underground 13/15km to Bella Vista.


Irrespective of the enlargement of the running tunnels to permit safe walkways at Sydney's double deck carriage floor level, or the provision of a central emergency tunnel, the tunnelling effort will soar. Add the cost of intermediate shafts positioned at suitable intervals between underground stations, fit them with appropriate intercom facilities, lighting, hoisting plant; employ trained passenger recovery teams on a 24/7 basis and the line's operating costs will also soar.

Leave out all possible protective facilities, have but one serious incident similar to those previously encountered in the London Underground and the Government will fall.

I should be pleased to take part in discussions concerning the construction, operation and protection of the North-West Rail Link. Please note, however, that I am but an observer in railway matters. I do not hold qualifications in any of the areas touched upon.

Unfortunately, I have a prior commitment to be away from Sydney from the morning of Monday 30 April until the afternoon of Thursday 10 May.

Yours faithfully



David Hart

30 April 2012