

## DE-ICING OF CONDUCTOR RAILS

One of the major causes of delay and cancellations in the winter months is ice on the head of the conductor rail, which prevents the shoe from collecting current. Historically, spreading oil onto the surface of the conductor rail to prevent ice bonding to the rail-head was a principle solution to combating the problem.

This reports considers what further action could be taken to either prevent the formation of ice on the conductor rail or to remove it once it has formed. A number of potential solutions were identified:

- Heating the rails, either by passing the current down the rail or by a separate heating element bonded to the rail.
- Using an induction heater mounted to the front of the train to break the bond between the ice and the rail.
- De-icing by steam heating.
- De-icing by mill scale hammers.

Of these, the use of a heating element bonded to the rail to prevent ice formation appeared to be the best technique.