

THE DEVELOPMENT OF SHED PROTECTORS FOR PORCELAIN INSULATORS ON BRITISH RAIL

For many years British Rail has suffered vandalism directed against porcelain insulators on electrified lines. The immediate effect of breaking one of the sheds (the ridges around the insulator which increase the creepage path) may be small, but may increase flashovers and disrupt the service. If damage occurs near the core of the insulator, the line may fall or a hanging fragment may pass through a cab window and injure the driver. An insulator with more than one damaged shed will be replaced on a non-urgent basis - the labour cost of this replacement can be significant.

Two approaches have been adopted to improve the reliability of the system: replacing the porcelain insulator with a vandal-resistant alternative, and protecting it from impact by projectiles.

This report describes a novel form of shed protector designed for Mk3 porcelain insulators on BR. It is available in two materials and has satisfied the relevant electrical type tests. It has a resistance up to ten times greater than the unprotected porcelain insulator, and three times greater than the high alumina anti-vandal insulators currently in use. Service experience should now be obtained in parallel with further long-term testing.