

CORRESPONDENCE

SIR,

Cdr. Alston's letter in the April number of the Journal raises a point which has been a matter of argument since the early days of electrical engineering.

In an installation to the I.E.E. Regulations the earth wire if properly fitted and connected does provide complete protection under all circumstances. The unfortunate porter was killed, not because the metal of the lamp holder was earthed through the earth wire in accordance with correct practice, but because the vacuum cleaner was defective and not correctly wired. Had it been correctly wired and complete with an effective earth connection, the fault in it would have blown the fuze. As it was, the fault, a loose connection, made the non-current carrying metal of the cleaner "live". In this condition the cleaner was a potential hazard in any circumstances; had the porter touched a gas tap, a radiator, the metal of the fireplace, a water tap or a metal stair bannister he might easily have been killed. The earthed metal of the lamp holder was only one of the many things which could have completed the chain. The real cause was the absence of an earth connection on the vacuum cleaner. These are often used with 2-pin plugs and sockets and if they develop a fault they are dangerous.

In a completely "earth free" location, portable equipment would be quite safe without the earth connection but one can never guarantee that equipment will always be used in earth free locations and it should be designed to be safe in any circumstances.

If the wiring regulations of the I.E.E. and Home Office are followed intelligently the installation is as safe as is reasonably possible. The weakness of British practice lies in the freedom which allows manufacturers to sell potentially dangerous equipment and anyone, however inexperienced, to carry out electrical installation work. In America and Canada 2-pin wiring is permitted for portable equipment on 115-volt systems but all equipment must be approved by an independent testing authority before it is allowed to be sold; double insulation and other precautions are required for portable equipment, installation work can only be carried out by registered electricians and all installations are inspected and tested by an independent inspector before being put into service. By these means, American domestic installations although theoretically more hazardous than the ideal British installations are in practice probably safer.

It is worth noting that the U.S.N. Bureau of Ships which originally accepted 2-pin plugs and sockets in cabins and similar locations in U.S.N. vessels changed their policy in 1942 and now insist on 3-pin wiring and an earth connection.

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