

# Industrial emergency repairs

ALTHOUGH THE DIAL TYPE DC CONTROLLER IS FAST DISAPPEARING, there are still enough around to keep the maintenance section worrying over the shortcomings inherent in the design. Repairing the nichrome-steel wire in the resistance coils mounted in the hollow cast-iron base is both tedious and viciously hot work that should be best delayed until weekend shutdowns make the work more convenient and leisurely. The innermost tier of coils is the first to fail, because of the entrapped heat. By the same token, it is the most difficult to get at for repairs.

The severe arcing at the contact segments as a resistance coil opens provides a way to make an emergency repair that will hold until normal shutdown can be arranged. Remove the two arcing plates (segments) and insert two thicknesses of brass shim stock large enough to cover the dual spot in one solid piece (see diagram). By drilling proper screw holes in the shim stock, you can replace the segments, place over the shims and secure them with the usual screws. Now the brass shims bridge the gap in the defective resistance coil and service is restored in a matter of minutes (if you have the shunts cut and perforated beforehand).

The slightly increased elevation of the shunted segments offers practically no obstruction to the passage of the carbon brushes on the rotating arms, since the rounded edges of segment and brush provide smooth motion. We have had as many as three shim shunts in place on as many old dc cranes, awaiting an opportune time to dismantle the interior of the hollow cast-iron base to replace those troublesome resistance coils.—Paul C. Ziemke

