

and fines, oversize, magnetics and ground pellets are each treated separately and assayed for platinum content. In this way, a very accurate measure of the actual weight of platinum in the whole consignment is built up. Check weighings are made at the beginning and end of sampling to eliminate errors caused by changes in weight, and dust losses are carefully controlled.

After sampling, the spent catalyst is roasted under carefully controlled conditions to remove the organic contaminants and then goes forward for treatment. The operations

are carried out entirely in closed systems from which no losses are possible, and all the effluents are monitored and treated, if necessary, for the recovery of traces of colloidal or particulate platinum.

Because of the accuracy of sampling and assay, and the control over all sources of platinum loss, that have been achieved in this plant, it is possible to carry out this difficult recovery operation at a very low cost and to make a major contribution to the overall economic success of platinum reforming in the petroleum industry.

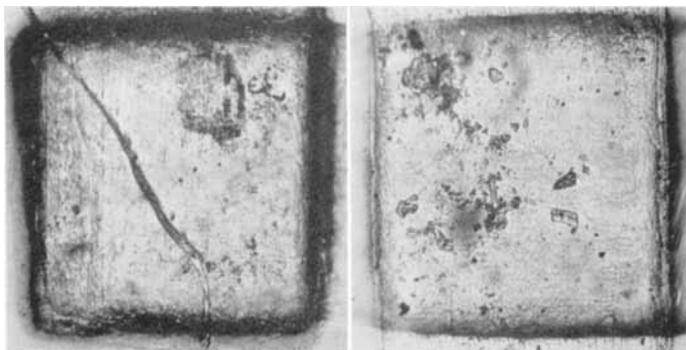
Contamination of Electrical Contacts

A PLASTIC REPLICA METHOD OF EXAMINATION

Many millions of relays in the telephone and communications field depend for their successful operation on the contacts, and while the use of platinum and palladium virtually eliminates trouble due to tarnish films some inexplicable failures occasionally arise, more especially under very sensitive conditions. These are usually accounted for by the presence of dust, fumes, erosion products or other extraneous matter, but the examination of failed contacts and the identification of the contaminant is an extremely difficult and delicate task.

An elegant method of contact study has recently been described by two engineers of the Bell Telephone Laboratories, H. W. Hermance and T. F. Egan (*A.I.E.E. Com-*

munications and Electronics, 1958, Jan., 756-762). The technique consists of pressing the warmed contact into a clear thermoplastic material, which reproduces faithfully all surface details in the contact in reverse relief, while solid deposits on the surface adhere to the plastic. Foreign material suspected of impairing contact operation is thus made available for microscopic study on a clear and relatively inert base to which chemical tests may be applied. Using this method, an astonishing variety of materials has been identified as causing contact failure in individual cases. Most open-circuit conditions examined were found to be due to fibrous dusts from workers' clothing, from packing materials or from insulating materials.



Two typical replicas of palladium relay contacts after failure in service. That on the left shows a large cotton fibre with smaller fibre fragments and some erosion dust. On the right, phenol fibre fragments are predominant