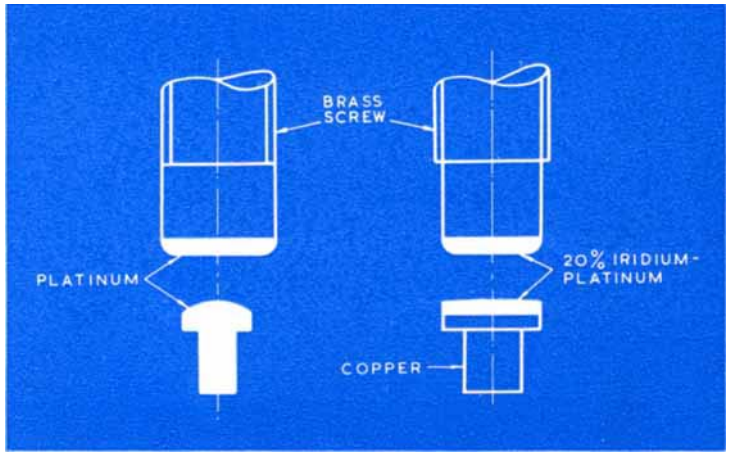

The original design of the contacts (left) and the revised design employing a larger iridium-platinum-faced copper contact

as Piccadilly Circus would probably be operated about five million times a year. The figure for the average intersection would be more in the order of two and a half millions. As a life of ten years is expected from a capsule, the contacts and all other parts are required to be capable of standing up to at least fifty million operations.

On a laboratory life-test which is still in progress these capsules have done over a hundred and ten million operations without failure. However, the only real life-test is that obtained in actual service, and time alone will confirm that the decision to use iridium-platinum contacts has been sound. All that can be said at the present time is that to date some fourteen thousand capsules having iridium-platinum contacts are operating in many parts of the world and are giving satisfactory service.

Oxide Films on Platinum Electrodes

Platinum, equally with gold, serves to typify the ideal of a noble metal. It neither rusts nor tarnishes in air whether it is kept for centuries in industrial or marine atmospheres or in clean country air, or whether it is heated in air to high temperatures for long periods. In all these conditions, it is normally considered that a platinum surface will remain clean and bright and free from any tendency to scale, tarnish or develop protective surface oxide films as do the base metals.

Similarly, a platinum anode is commonly considered to present always a clean metallic surface to the electrolyte in which it is immersed, so that electrons can pass freely between the metal and the liquid unimpeded by any oxide barrier.

However, when the conditions at the anode are strongly oxidising, a platinum electrode sometimes behaves as if it were protected by "a film of platinum oxide, which prevents more than superficial oxidation of the platinum and yet permits electron transfer processes". In a recent contribution from the Department of Chemistry at Harvard University (*J. Amer. Chem. Soc.*, 1957, **79** (18), 4901–4904), F. C. Anson and J. J. Lingane have provided some most convincing evidence that such films really exist. They have succeeded in stripping the films chemically from oxidised anodes and in determining their weight and composition. The films are comprised of PtO and PtO_2 in a molar ratio close to 6 to 1.

These data constitute the first direct chemical proof of the formation of platinum oxide films. J.C.C.