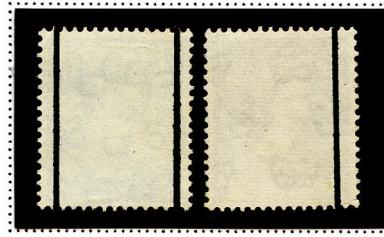


The Beginnings of Postal Automation



There have been four methods generally used to detect the postage: the first, used by Great Britain, was measurement of the reflectivity of the stamp compared to that of the envelope. This was unsatisfactory and the next step was to imprint the backs of the stamps with electrically conductive stripes of graphite-containing ink.

The different classes of mail could be distinguished by using either one or two stripes of graphite. The stamp location and the number of stripes were detected by sensors which measured the change in the conductivity between them as the stamp passed by. In practice, however, thicker pieces of mail decreased the sensitivity and the method was discontinued, although in 1959 during a transitional period, both the graphite lines and phosphor tagging were both used on the same stamps until the detection machinery could be adapted nationwide.

The other three methods are variations on a single theme; the use of an ink which contains a compound activated to fluorescence by ultraviolet radiation, the resulting glow being detected by a sensor. Phosphorescence, fluorescence and luminescence have some technical differences, but those terms will be used interchangeably in this presentation.



Phosphorescent inks were applied to the face of British stamps along the vertical perforations. The inks were activated by long-wave ultraviolet light and the residual afterglow was measured by a sensor immediately afterward. Both Great Britain and Canada, among others, originally employed this method, and Great Britain still does.

The Beginnings of Postal Automation



Recent Canadian stamps have shown a bit of whimsy in the tagging, as on this \$10 whale stamp, where several waves are tagged and a small scuba diver appears at top center. The \$1.15 definitive stamp shows some small logos of Canada Post which only appear under ultraviolet.

The Beginnings of Postal Automation

The first U.S. issue to have the entire run tagged was the City Mail Delivery stamp of 1963, #1238. Other firsts for that stamp are being the first to use a green phosphor containing zinc orthosilicate, which glows green under ultraviolet radiation, in order to enable sensors to distinguish between first class and air mail letters. The equipment diverted air mail to a different bin by identifying the red phosphor on air mail. It was also the first commemorative stamp to be tagged and the first to have missing phosphor errors discovered.

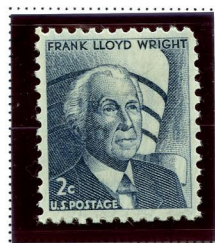
The first definitive stamp to have the entire production run tagged was the 2¢ Frank Lloyd Wright stamp of the Prominent Americans series, #1280, and the first air mail was #C69, the Robert Goddard issue.



#1238



Ultraviolet Light Photo



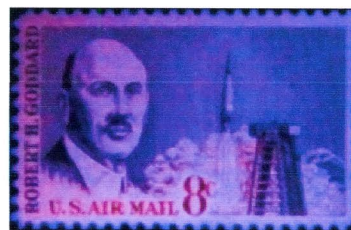
#1280



Ultraviolet Light Photo



#C69



Ultraviolet Light Photo