



Development of Phosphor Tagging on Canadian Stamps

PSSC Presentation – 18 Sept 2024 by
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The overall objective of the tagging experiments was to find a method for mechanically identifying stamps on a letter and cancelling them using automated equipment. This was important because the volume of mail was growing leading to increased processing costs.

The presentation uses documentation obtained from Library and Archives Canada (LAC). The research spanned several years and involved several individuals. It was steered by a very patient Dr. Jim Watt!

Most of the material is copies of correspondence between various contractors / partners. Permission for copies has been obtained, but actual LAC document numbers are not available due to the way they were copied.

Actual (remaindered) stamps from one trials were obtained from an estate sale in the 1990s and were certified as genuine in 2013 by the Greene Foundation.

The earliest documentation is from 1955 when the initial focus was on production of paper that contained phosphorescent materials. Partners included EB Eddy Company (Eddy) for stamp paper manufacture, Reed Research Co. ('Reed'), potential source of facer-canceller machines in the US, and Canadian Bank Note Company ('CBN'), security printer and supplier of stamps to the [Canadian] Post Office Department ('POD').

The presentation gave details of five known stamp trials mostly by reproducing the relevant correspondence from LAC.

Trial #1 – 1955 test stamps (from 3 June, 1955 letter)?

A 3 June letter from CBN to Eddy enclosed "one sheet of experimental 25/ on paper which you supplied to us having a phosphorescent treatment We have forwarded comparable sample sheets to the POD for testing purposes".



On 8 June POD wrote to Eddy and Reed regarding these stamps. This indicated that the stamps could have a commercial value if allowed to escape to the philatelic trade and required them to be returned to the POD regardless of condition when they had served their purpose.

No data found in LAC on subsequent testing of these stamps but discussions in 1955 rejected the evaluation of phosphorescent ink for printing stamps, and overprinting stamps with a phosphorescent material (!)

There is then a gap in LAC documentation until 1959 by which time development work was ongoing. Reed was out; new partners were the GPO and Elliott in the UK. They agreed on marking stamps with invisible phosphorescent ink but no graphite bars. The stamps would be coded for local and forwarded delivery with one mark on the 4¢ value and two marks on all other (1¢ – 5¢) values.



Automatic letter facing machines would be used to recognize the stamp position, correctly face and cancel the stamps, and segregate local from forward first-class letter mail.

At a 23 July 1959 meeting the POD, CBN, and Eddy agreed that in the short-term vertical phosphorescent bars would be used for testing on Canadian stamps and in the long-term phosphor could be added to the paper. Phosphor ink was to be based on the type developed for the GPO and two UK phosphor inks were supplied by the GPO to CBN (and Eddy) for testing on Canadian stamps. Price quotes were requested from CBN for overprinting stamps.

Trial #2 – 1959 test stamps (from 1 Dec, 1959 letter)?

On 1 Dec 1959 a letter was sent from POD to Elliott confirming the focus on phosphor marking of stamps and discussing contractual requirements for supply of SEFACAN machines to POD. This letter included sample 2¢ and 5¢ stamps with two Canadian and two British phosphor inks with wide or narrow phosphor lines. 20 of each experimental stamp were supplied. The tests did not cover all the possible combinations. In addition, there were trials with business reply cards and OHMS envelopes.

There is another gap in LAC documentation until October 1960.

Trial #3 – pre-October 1960 (October 10, 1960 letter)?

An Oct 1960 letter from GPO discusses results of trials. Lines on the unprinted edge of the stamps are desirable but there would be difficulty in maintaining proper registration. Therefore, it was necessary for the phosphor to also be over the printed design. To separate the one band from two band it was desirable for the spacing to be large. The signal strength from the Canadian inks was adequate but not as strong as the British inks.

A 10 Nov 1960 letter from POD to CBN specifies the marking of phosphor lines on Canadian stamps based on the results of GPO tests.

For the 1¢, 2¢, 3¢ and 5¢ stamps phosphor lines were to be 8mm wide centered on the gutters between the stamps so that there would be at least 3mm of phosphor on each side of the stamp. The 4¢ stamp was to have one 3.5mm band printed in the centre.

A 25 Nov 1960 letter to Elliott repeats the conclusions of the Oct 1960 GPO letter and requests further information on response time and strength of the phosphor “to allow us to write a specification ensuring that our production stamps will work on the facer equipment.” The letter indicated that to meet the schedule for the experimental use in Winnipeg, stamp production had to start by 1 Feb 1961 with distribution of “tracer” stamps to start 1 May.



‘French’ - Tagged Test Stamps (1/16” wide)
‘Tagging’ ink phosphoresces, but light decay is rapid. A trial #3 stamp?

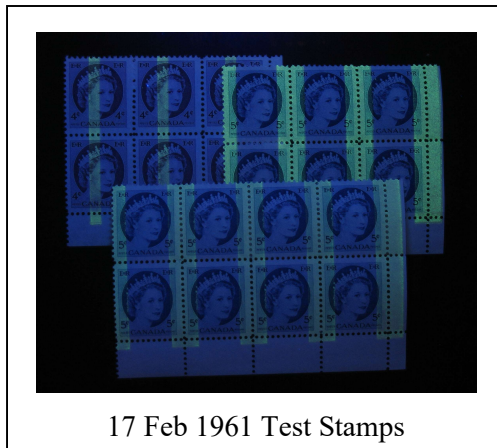


Trial #4 – early 1961 (from January 20 letter)?

On 21 Jan a meeting was held with representatives of POD and CBN. The minutes record the decisions on further test printings. By this time the schedule had changed as the delivery of the Elliott equipment to Winnipeg would be late Oct 1961.

They agreed to use the term “tagged stamps” rather than “phosphor” marking or “phosphate”. To allow distribution of tagged stamps in Winnipeg on 1 July printing of tagging on standard sized sheets would have to start on 1 Apr. They were concerned about discolouration caused by the Canadian phosphor inks. Quality control was also an issue.

They decided to initially use Canadian phosphor inks. “The experimental stamps will be printed in groups in each of which the method of printing and the mass of phosphor deposited will be varied under control.” These stamps were to be sent to the UK to be tested on the Elliott equipment. They also asked for more information on UK phosphor inks in case they found the Canadian inks unsatisfactory.



17 Feb 1961 Test Stamps



17 Feb 1961 Test Stamps

Certified in 2013 by the Greene Foundation as genuine experimental stamps.

On 17 Feb 1961 CBN sent an invoice for printing 5 sheets each of 4¢ and 5¢ stamps with light, normal and heavy overprinting.

A 30 Mar 1961 letter from the GPO summarizes the results of the testing. It concluded that “in all the circumstances we think that provided you use your heavy printing the stamps can be expected to perform satisfactorily.” They indicated that all the stamps were in safe

custody and would be destroyed after testing on the production model. However, two sheets of each test value / type survived.

A 21 May 1961 meeting between POD and CBN on “Tagged Stamps for SEFACAN” considered the GPO results. It was decided that production of tagged stamps for Winnipeg should start on 1 July 1961, the “tracer” used should be the one used on the sample stamps (phosphor with yellow response rather than the blue response used on the UK stamps.) and that the heavy coating should be used.

On the 16 June 1961 the Executive Assistant to the PMG informed by the Director of POD Financial Services of the plans for printing tagged stamps for the trial in Winnipeg.

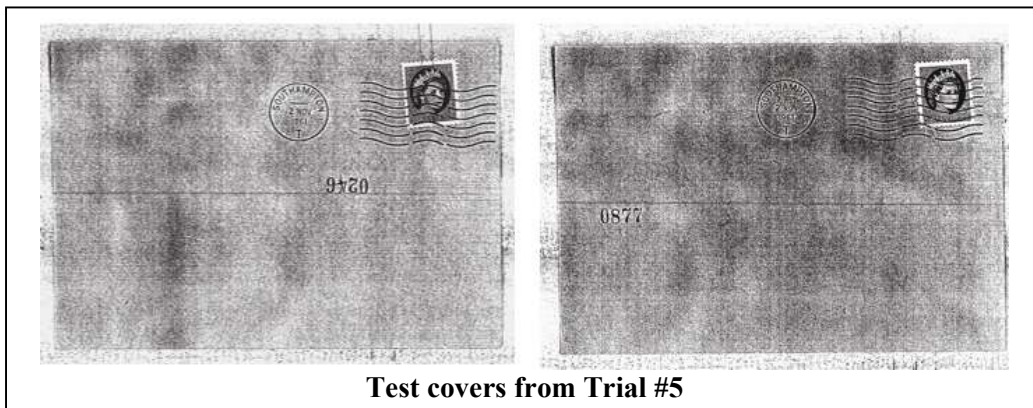
On 31 July 1961 a file memo was written. Due to concerns about the difficulties of obtaining testing equipment for quality control a change to using the British phosphor was being considered. CBN sent a representative to the UK to determine how to acquire and store this phosphor and visit the printers, Harrison & Sons, for information on the printing technique used.



Trial #5 – mid 1961 (from August 22 letter)?

A letter sent to GPO from POD on 22 Aug enclosed 5 sheets of 100 of the 4¢ with one phosphor band and the 5¢ with two bands using the British Lettalite B2 blue phosphor which was to be used in the UK. These were for testing on the Elliott machine in use in Southampton.

A telex sent from GPO to POD on 11 Nov apologized for the delay in testing the stamps sent on the 22 Aug, the Southampton equipment took longer than expected to be operational. The test had now been carried out with results that were 100% satisfactory. “Rather than destroy the full 1,000 stamps, I am returning 12 cancelled specimens as I thought they might be of interest.”



Test covers from Trial #5

Summary

Significant work took place from at least 1955 by POD to define how mechanization could be used to allow rapid cancellation of letter mail. This culminated with ‘tagged’ stamps issued in Winnipeg for large-scale testing on 13 Jan 1962. A SEFACAN machine was used to face and cancel the tagged stamps in Winnipeg.

Several tests of phosphor-marked stamps were carried out, but not all are documented in Library and Archives Canada. Some stamps from two of the trials survived and are now in collector hands.

However, significant gaps in the information remain;

- What discussions took place between 1955 and 1959?
- What testing of the British phosphor inks, as well as that from CBN, was done in 1960?
- When was the ‘French’ – tagged 5c Wilding produced? When and where was it tested?
- Why were some of the phosphors changed, and whose products were they?
- What is the tagging ink used on the actual ‘Winnipeg-tagged’ stamps? British Lettalite B2 glows under short-wave UV only!

This is a fascinating documentary story of one of the key changes / improvements made to Canadian stamps.

Thanks to Dr Jim Watt for patiently coordinating the search effort related to this work in LAC, Library and Archives Canada for access to the documents on this subject (More may still be ‘hiding’). The Greene Foundation for their thorough study of the archival documents and the trial stamps to determine that the submitted stamps are genuine, and anyone else who may have contributed to the search for relevant documents and who has not yet been acknowledged.