THE BNA PERFORATOR

Published by the British North America Philatelic Society – The BNA Perfin Study Group

Volume 44 Number 4 September 2023 Whole Number 168

Editor's Post:

¶ Errata: In the last issue's article outlining the transition from the Wartime Supply Board to the Department of Munitions and Supply (page 24) I wrote that the covers had originally been shown in an issue of the Pilot's Log , the newsletter of the BNAPS Air Mail Study Group. This is incorrect. The article appeared in the Airpost Journal, the newsletter of the American Air Mail Society. The issue, volume and number references are correct. An amended copy of issue 167 is on the BNAPS Newsletters website.

¶ Sadly our Study Group membership has lost another member with the passing of John Amiet in Queensland, Australia at the age of 82. Founding and life member of the Perfin Club of New Zealand and Australia, John was on our member list when I assumed our Study Group Secretarial responsibilities in 2010.

¶ The printing costs for this issue remain at $15.00. This issue weighed over 50g and normally postage would have been $14.83(6 @$1.94 and 1 @3.19). There are however no mailing costs thanks to donated postage.

¶ The BNAPS Perfin Study Group goes back a long way—into the 1950's. I am working on a bit of a history and particularly on its resurrection in the early 1970's. I would appreciate hearing from any current members who have recollections or anecdotes of those early days.

¶ This is the last issue before BNAPEX in Halifax beginning September 15th. Our Study Group has a time slot on Saturday from 1:00pm to 2:30. The agenda currently includes and update from Gary Tomasson on the 6th edition of the CSPI and I am giving a PowerPoint presentation on perforated OH/MS postage and the war industry in Canada during WWII. I do hope I will see some of you there.

¶ The last page of this issue includes a couple of members' requests. If you have a special interest that you would included in an upcoming issue please let me know.

¶ And as always I am looking for contributions to the newsletter, either a short piece on your favourite perfin cover or for a suggestion on a topic you would like to see covered.

Treasurer

Russell Sampson

48B Eastbrook Heights

Mansfield Center CT

USA 06250-1654

rsampson314@gmail.com

Editor

Jim Graham

2 Grandview Drive

Dartmouth Nova Scotia

Canada B2W 1X5

jdgraham2@gmail.com

Canadian National Railway Perfins (C29) used on WWII Department of Munitions & Supply Covers

Russell D. Sampson with valuable assistance from Patrick Durbano

Figure 1 and 2. The pencil inscriptions on these two covers appear to be written by a collector or a dealer.

As Jim Graham noted [1], during WWII the Department of Munitions & Supply worked alongside many of its Crown Corporations. Here is some perfin-proof of that statement; C29 (CNR - Montreal) perfins on Dept. of Munitions & Supply envelopes (see Figures 1, 2, 3, and 4).

The mute killer and roller cancels on these two covers appear to be precursor blackout postmarks. These were used in the major seaports of Canada during the Battle of the Atlantic. They were to conceal strategically sensitive information regarding the name and location of naval ships. The need for censorship was originally to apply only to mail originating from naval ships.

It was decided, however, that it was easier to apply this censorship to the entire mail stream from all the post offices of these ports. The postmarks in Figure 1 and 2 were likely from Halifax and have been reported from 1941 to 1942 [2].

The usage of the KGVI "Mufti" stamps also supports this assumed time period since the KGVI "War Issue" did not appear until July 1, 1942.

The 2-cent postage rate of the first cover was initially a bit of a puzzle. After seeking input from the BNA perfin community, Patrick Durbano supplied the likely solution [3].

> "*… the 2-cent rate was the drop letter (local) rate up to April 1st, 1943. On that day the 1c War Tax was reinstated but unlike the WW1 1-cent increase, a separate stamp was not issued, so the rate increase was incorporated directly into the stamp by way of a colour change to the 3c KGVI War Issue (carmine to violet) and the release of the 4c KGVI carmine from the 4c Grain issue. (Note that as per UPU regulations, the first-class domestic stamp must be printed in red and airmail printed in blue). The new rate for surface letter (first class) rate was increased from 3c to 4c and the local (drop) letter rate went from 2c to 3c. So, these covers could both be local drop letter rates with one being mailed on each side of the April 1, 1943 price increase.*"

The date range of the 2-cent drop-letter rate nicely coincides with the estimated date-range from the precursor blackout cancels.

These covers suggest that these Crown Corporations not only worked closely with the Government of Canada to supply the war effort with its vital munitions and supplies but the two sides also shared their stationary and their postage.

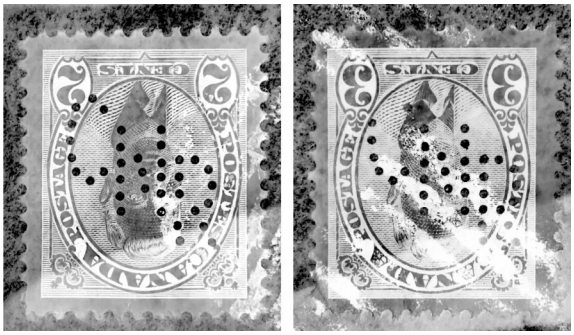


Figure 3 and 4. A "poor person's X-ray" of Scott 232 and 233 with C29 perfin (both position 3). Stamps are inverted to show perfin in upright orientation.

REFERENCES:

1. Graham, Jim (2023), **OHMS Perforated Stamps on World War 2 Covers**, The BNA Perforator, Vol. 44, No. 3, Whole Number 167, (April)

2. Coutts, Cecil C. (2015), **Canada Blackout Postal Markings 1942-1945**, BNAPS Exhibit Series No. 84

3. Durbano, Patrick (2023), personal email communications (June 8)

EDITORIAL

Canadian National Railways and WWII

Russell Sampson's preceding article on the use of Canadian National Railways perfins (C29) on Department of Munitions and Supply covers illustrates the vital role CNR played during WWII. Given that CNR and it subsidiaries were wholly owned crown corporations of the Federal Government does not in any way diminish this role. CN Railways in addition to regular passenger service and moving both raw materials and the finished product for weapons, ran special troop trains, hospital trains, and war industry worker trains. CN Steamships on the east coast (Figure 1) lost the Lady Somers, the Lady Hawkins and the Lady Drake to enemy torpedoes. The Lady Nelson, damaged by torpedoes in Nassau harbour, was refitted as a hospital ship and the Lady Rodney was a troop carrier. Trans Canada Airlines was founded in 1937 by the CNR. Between 1943 and 1947, TCA operated the Canadian Government Trans-Atlantic Air Service (CGTAS) to provide trans-Atlantic military passenger and postal delivery service using Avro Lancaster aircraft (Figure 2). And finally, the National Railways Munitions Corporation was created by the Allied War Supplies Corporation for CN railways to oversee. It manufactured naval guns and gun carriages in a plant in Montreal (Figure 3).

Fig. 1 Canadian National Steamships promotional postcard from the 1930 Canadian National Exhibition featuring an artist's rendition of one of the Lady boats.

Fig.2—An Avro Lancaster in military paint. The Victory Aircraft Corporation in Toronto, another Canadian Government crown corporation ,built some 2200 Lancaster airplanes for the war effort.

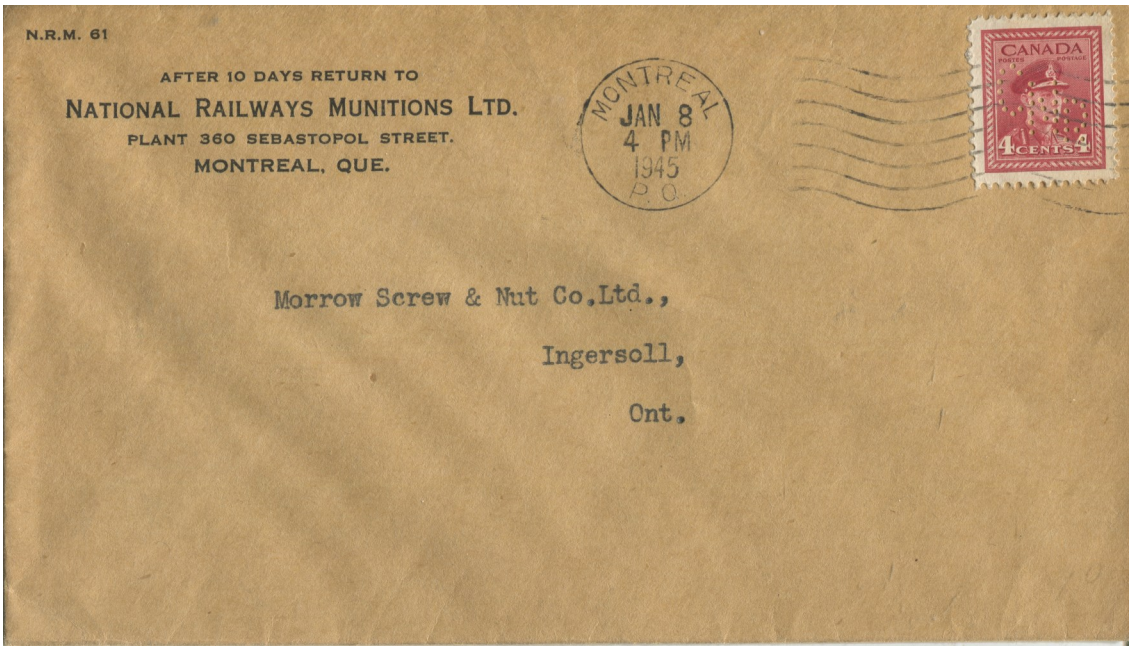
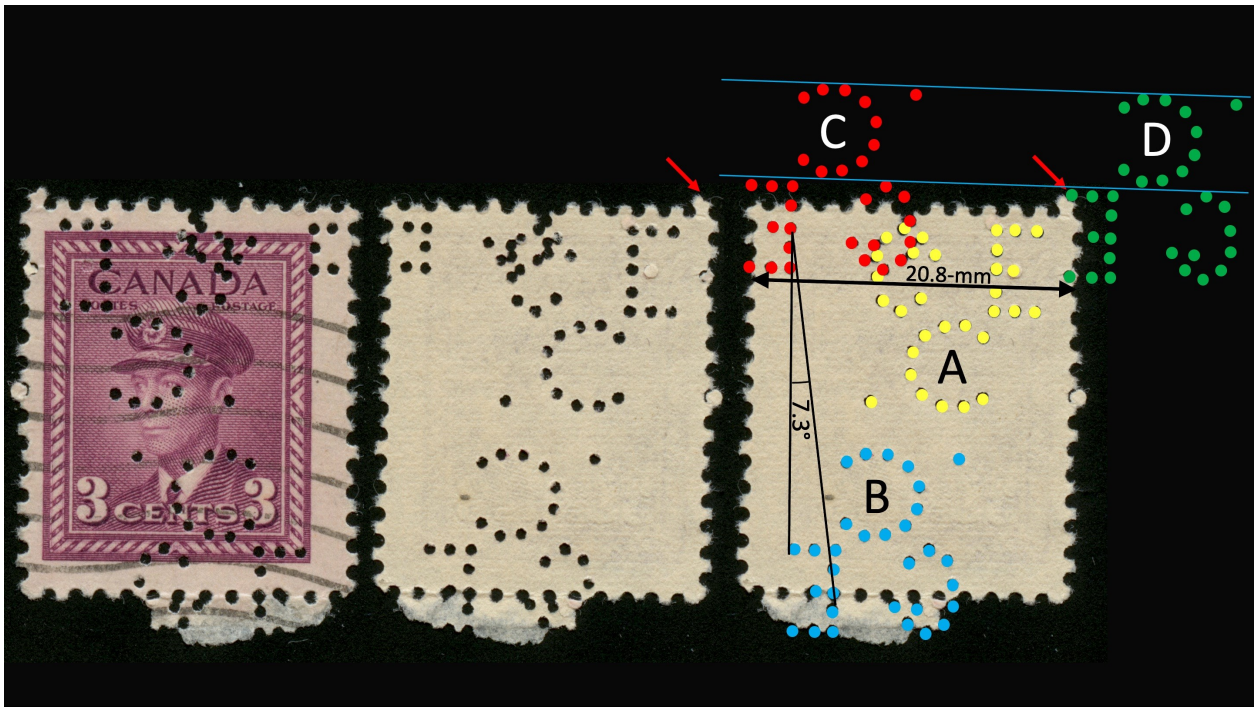


Fig 3.. A National Railways Munitions Ltd cover paying the 4¢ forward letter rate from Montreal to Ingersoll ON, January 8th 1945. The stamp is perforated with CNR (C29). It operated under the supervision of CN Railways.

Canadian General Electric C15 with Multiple Perfins and Perfin Positions.

Russell D. Sampson



Figures 1, 2 and 3: This multi-perfinned specimen of the C15 on Scott 252 shows four difference perfins in two different positions. Perfin "D" was originally thought to be of position 3, like perfin "A". However, a much better fit occurs when the pattern was rotated 180°. Evidence for this is that the upper tip of the "E" now neatly fits against the extended perforation "tooth" of the stamp (see red arrows). These extended perforation teeth are a common occurrence with perfins, as the perfins can cause the tear-line of the stamp to be deflected. A dramatic example is produced by perfin "B" at bottom of the stamp. In addition, the inter-die spacing between perfins "C" and "D" was measured to be 20.8-mm which closely matches that of the average inter-die spacing of the C15 machine (20.7-mm) as found from the author's collection. Finally, as expected if the two perfins are part of the same strike, perfins "C" and "D" exhibit a high degree of parallelism (see blue lines)

What is the most complicated multi-perfin in your collection? Here is a sample that hopefully will spark your competitive spirit and then prompt you to send something to our newsletter. Send us a scan, a photo, or even a photocopy and Jim and I will write it up.

DESCRIPTION

This sample is a Scott 252 with a partial quadruple C15 perfin (see Figures 1, 2 and 3). There is one complete perfin, coloured yellow and labeled "A" while there are three incomplete perfins, coloured blue "B", red "C" and green "D". There are also two different perfin positions with perfin "A" position 3, while the other three are position 1. Perfins B and C are displaced horizontally, thus suggesting that the sheet was fed through the machine at an angle of 7.3°. This further suggests that the operator of the perforating machine was not seeking the most uniform and thus orthodox results from the perfins.

POSSIBLE CAUSES

This apparent creativity from the machine operator appears to add evidence to the hypothesis of the CGE "Mailroom Misfit" [1]. In this previous article evidence from a mirror block of the C15 suggests that the operator was not seeking to produce a proper appearing perfin but may have been trying to be more creative.

The odd arrangement of these perfins however, may also be explained more simply by the operator attempting to correct the misplaced position 1 perfins (i.e., perfins "B", "C", and "D").

All three are position 1, as would be expected if the operator was following the instructions from the manufacturer and those expected from a boss who might be conscientious of the corporate image. Consider though that the placement of these three perfins have the company's initials clearly broken by the stamp's perforations thus producing an undesirable appearance and outcome. Therefore, perfin "A" may be an attempt to correct this unsightly error by putting the sheet back into the machine and then more carefully centering the perfin onto the stamp. Yet, if this was the scenario, once again the operator went off-script and flipped the sheet producing a position 3 for perfin "A". This correction was certainly *not* the optimal outcome with respect to the company's initials and expected corporate image.

So, the evidence is equivocal, it supports both hypotheses; 1) a rebellious and creative "Mailroom Misfit" and, 2) the more prosaic explanation of simply attempting to correct an error. Yet, my money is still on the first.

THE HOW-TO

For those who want to try this at home, the coloured perfin initials in Figure 3 were produced in Microsoft PowerPoint. Here's how to do it.

First, a high-resolution image is imported into PowerPoint from the "Insert" pull-down menu. I would suggest a resolution of no-less than 400 ppi.

Then from clicking on the "Shapes" icon, a series of coloured dots can be produced of the approximate size of the perfin perforations. To make the visual match between dot and perfin perforation easier, make sure to enlarge the PowerPoint slide sufficiently. To make the dots uniform in size hold down the "shift" button while making the dots with the mouse. This will ensure they are circles and not ovals.

Then to speed things up, once you make a dot that matches the size of the perfin perforation, use the "Copy" and "Paste" function in the "Edit" pull-down menu to reproduce the remaining dots.

Use the mouse and the arrow keys to center the dots over the perforations. The movement of the dots can be changed to a finer resolution simply by zooming in on the slide in PowerPoint. I find the best way to center the dots is with the arrow keys and not the mouse.

Once the entire perfin pattern is covered in your coloured dots, the mouse can be used to highlight the entire series of coloured dots. Then under the "Arrange" pull-down menu select "Group". This turned the entire series of dots into one image. This grouped image can then be copied and pasted as many times as necessary to produce the other perfins. To produce a position 1 from a position 3 perfin go under the "Shape Format" tab, and click "Rotate Right 90°" and click it twice. The dots in the images can then be re-coloured in the same "Shape Format" tab.

Now, go to your collection and start looking for something even more wondrous to show everyone. We can hardly wait.

REFERENCES:

Sampson, Russell D. (2023), **Canadian General Electric C15 Mirror Block and the Mailroom Misfit**, The BNA Perforator, Vol. 44, No. 3, whole number 167 (April)

2023 Canadian Stamps with Perforated Initials Handbook Update

Pages 44-48 contain the 2023 updates to the *Canadian Stamps With Perforated Initials* (CSPI) handbook. It also marks the last update to be complied by Gary Tomasson and Jon Johnson. Beginning August 1st, Russell Sampson and I have assumed responsibilities for the maintenance of the Handbook.

The first CSPI was the work of the British North America Philatelic Society (BNAPS) Perfin Study Group (PSG) led by Dr. C. M. Jephcott (Chairman) and R.J. Woolley (Secretary). It was published by BNAPS in 1955 and contained 31 pages as a "perfin pattern" handbook. Two subsequent editions followed this format.

Recognizing and need to update the Third Edition Jon Johnson (Chairman) and Gary Tomasson (Editor) began to gather perfin data from 70 perfin collectors. Released in 1985 the 4th Edition included among other things 5 introductory chapters, gave each perfin its own individual number rather than the previous alpha/numeric system for patterns such as New York Life; and some 40 pages of Addendums covering checklists, insignia, perfin pattern differentiation, revised the perfin position to numeric from alpha and included revenue stamp, precancel and government agency issue checklists—the first steps toward an "issue" based catalogue.

Not satisfied, Jon and Gary harnessed the PSG members to collect the information for the 5th Edition advancing the Handbook to be fully "issue" based. Its 125 pages included known issues for all known patterns, die proofs, introduced Earliest and Latest Known dates of use; and 6 chapters of introductory information. With the generosity of the Editors and the courtesy of BNAPS and its volunteers, the CSPI Fifth Edition was made available to collectors on the BNAPS website to anyone, anywhere and anytime, for free. Also, being electronic, the CSWPI could be updated as desired.

A further leap forward came in 2020 with 2 major additions to the Sixth Edition—it became became "position" based listing all known perfin positions for known issue of all patterns and die proofs of perfins patterns from the actual perforating machines. The Sixth Edition was justly recognized with a Large Vermeil award at CAPEX22 international stamp exhibition in Toronto, ranking 7th among the 47 Canadian entries and 19th of 103 total entries in the Literature Exhibit.

For 43 years Jon and Gary have diligently collected and updated information, consistently encouraged and welcomed the participation by Study Group members and unselfishly devoted countless hours to increase our collective knowledge of Canadian perfins through the creation and maintenance of the Handbook.

Moreover the CSPI Handbook reflects Jon and Gary's commitment to and passion for, maintaining the authenticity and integrity of Canadian perfins - their pioneering work on OHMS fakes, now at both the Library and Archives Canada and the Vincent Graves Greene Philatelic Research Foundation, the listing of known legitimate 5-hole OHMS perfins in the latest Unitrade catalogue; their foundational research into perforating machines (having many die proofs added to the Handbook), securing the machines out of the hands of those who would possibly create perfins of "convenience" and finally coordinating contributions of collectors to keep the Perfin Handbook current.

Jon and Gary have invited us to take over the maintenance of Canadian Stamps With Perforated Initials. They are leaving us with high standards to meet as we assume the responsibilities of Perfin Handbook Editors, standards we are committed to maintain.

Russell Sampson

J. D. (Jim) Graham

The updates that follow include only new issues and other pertinent details for each pattern but does not include newly recorded perfin positions for known issues. These are recorded and appear in the updated Handbook when it is added to the BNAPS web-site.

1st August 2023 changes to the 6th Edition of the Canadian Stamp with Perforated Initials. Only includes new stamps added with their positions. Does not include positions added to stamps already recorded in the handbook. The next update will be the 1st August 2024 so please have your updates, correction, etc. in by the 15th July 2024, thank you.

A5	5.A.2	Add stamp # **109-1.**
A6	5.A.2	Change Latest Postmark from 1909/10/02 to **1910/11/29**
A11	5.A.3	Add stamp # **163-1.** Delete stamp # **162-2,4,8.**
A12	5.A.3	Add stamp # **195b-2.**
B1	5.B.1	Add stamp # **Montreal 10-285-1.**
B4	5.B.1	Add stamp # **1158-1.**
B6	5.B.2	Change name from BRITISH COLUMBIA ELECTRIC RAILWAY to BRITISH COLUMBIA ELEC-
		Change Earliest Postmark from 1914/05/14 to **1913/10/23**
B15	5.B.5	Change Latest Postmark from 1948/04/03 to **1948/02/09**
		Add stamp # **223iv-1.**
C6	5.C.2	Add stamp # **344-7.**
C8	5.C.3	Add stamp # **197c-1.**
C10	5.C.4	Add stamp # **105d-1.** & **105f-1.**
		Change Earliest Postmark from 1916/03/07 to **1915/11/24**
C11	5.C.4	Add stamp # **106xv-5.**
C12	5.C.4	Add stamp # **108c-1,5.**
C13	5.C.5	Add stamp # **108c-1,5.**
		Delete stamp # **Brockville 3-83-. & 3-85-.**
C14	5.C.5	Delete stamp # **169-1.**, **Brandon 1-149-1. & 4-149-.**
C21	5.C.9	Add stamp # **154-1.** & **359-1.**
C23	5.C.10	Add stamp # **105f-1.**
C24	5.C.11	Add stamps # **490-4.** & **540-1.**
		Change stamp # 459iv-4. to **459biv-4.**
C26	5.C.14	Add stamps # **549-8., 665-1., 677a-1. & 1131-2.**
C28	5.C.16	Change stamps 404piii-4., 404pxi-4. and 404pxii-. to **404iii-4., 404xi-4.** and **404xii-2,4.**
		Add stamps # **443-1., 524-2., 525-1.**, **528-2., 1063-3.**,
C32	5.C.18	Add stamp # **90e-1.**
C33	5.C.18	Change Latest Postmark from 1934/03/23 to **1941/05/05**
C34	5.C.19	Add stamp # **402a-4.**
		Delete stamp # **459iv-4.**
		Change Latest Postmark from 1971/09/26 to **1977/09/22**
		Change stamp # 459bbiv to **459biv.**
-	5.C.19	Add stamp # **223-1. & 358-1.**
C35	5.C.20	Add stamp # **105e-1.**
		Change Latest Postmark from 1970/06/26 to **1972/04/28**
C36	5.C.20	Change Latest Postmark from 1968/08/18 to **1970/06/22**
C41	5.C.21	Change Latest Postmark from 1929/10/19 to **Earliest Postmark**. Add Latest Postmark as

C46	5.C.24	Add stamps # **377-3., 465-2,4., 524-2,4., 525-2,4. 534-2,4., 536-3., 539-1., 540-2., 544pv-1,5., 553-2. 558-1,3. 560i-2., 563-4., 565-1., 567-2,4., 568-1,3., 569-1,5., 570-2,4., 571-2,4,7., 572-1,3,5., 573-1,3,8., 579-2,4., 581-3,5,7., 586-2,4,5., 597a-1,2,3,4.** & Hamilton **1-119c-3.**
		Delete last stamp # **V112-1.**
D4	5.D.1	Add stamp #**112iii-1.**
E1	5.E.1	Add stamp # **105f-3.**
E3	5.E.1	Add note at bottom **A printed "Diamond E" was a trademark of The T. Eaton Company but the use of that perfin pattern by Eaton's has not been confirmed.**
	5.E.1.	Delete the coil stamp # MR7-.
-	5.F.1	Under Damaged die of E1 add stamp # **114-1.**
F1	5.F.1	Change A rating to **B** rating. Add stamp # **105d**-3.
F2	5.F.1	Change Earliest Postmark from 1913/01/10 to **1911/11/22**
F6	5.F.3	Add stamp # **HFC2-1.**
G1	5.G.1	Add stamps # **107e-1.** & **FWT11-6.**
G8	5.G.3	Add stamps # **111iii-1., 162-1.** & **169-4.**
G9	5.G.3	Change stamps 404pxi-2,4,8. and 404pxiii-1,6. to **404xi-2,4,8.** & **404xiii-1,2,3,4,6.**
G10	5.G.4	Change stamps 404pxi-. and 404pxiii-2. to **404xi-2.** and **404xiii-2.**
		Add stamp # **404xii-4.**
G17	5.G.7	Add stamps # **112iii-4.**, **114b-1.** & **144-1.**
		Change Latest Postmark from 1955/-/- to **1955/10/07**
		Add in notes **Cancelled with Swift Current, Sask.**
G23	5.G.9	Add stamp # **153-5.**
H1	5.H.1	Add stamp # **104-3.**
I4	5.I.3	Add stamps # **202-1.** & **241a-2.**
		Under notes add **Also found with Swift Current SK cancels.**
I6	5.I.4	Add stamps # **165b-1.** & **174-1.**
I7	5.I.4	Add stamps # **105f-5., 119c-1.** & **FX40-1.**
		Change Latest Postmark from 1933/10/15 to **1956/02/08**
I8	5.I.5	Change Latest Postmark from 1945/12/11 to **1958/10/23**
I10	5.I.5	Add stamps # **157-1.**, **173i-5.** & **255-1.**
		Change Latest Postmark from 1946/07/14 to **1959/02/21**
		Delete stamps #[**Brockville 1-104-1. & 1-107**-.]
I11	5.I.6	Add stamp # **FX39-2.**
I12	5.I.6	Add stamp # **3-104-3.**
I13	5.I.7	Add stamp # **376-1.**
		Change Latest Postmark from 1962/04/17 to **1985/06/09°**
I14	5.I.8	Add stamp # **172-1.** & **FX64-1,4.**
I16	5.I.9	Add stamps # **119c-3.** & **4-105d-3.**
		Delete stamp # **4-104DDB-1.**
I18	5.I.11	Add stamps # **163b-5.** & **FX3-2.**

I20	5.I.11	Add stamp # **225-1.**
I22	5.I.13	Add stamps # **174-1., 464-6,8.** & **502-1.**
-	5.I.14	Under Damaged die of C27 add stamp # **105d-1.**
J6	5.J.2	Add stamp # **250-1.**
-	5.J.3	Under Damaged die of J11 add stamps # **106-1.**, **108-1**. & **109c-1.**
	5.J.3	Add item
		 Damaged die of J11. **109-**1. **190**-5.
J12	5.J.4	As a note add **Found with a BRIDGEBURG ONT hand cancel.**
L1	5.L.1	Add stamps # **457p-1.**, **492-1.**, **597-8.**, **706-1.** & **859-8**.
L4	5.L.5	Change Latest Postmark from 1931/05/04 to **1931/05/05**
M4	5.M.1	Add stamp # **105f-3.**
-	5.M.2	Under Damaged die of G8 add stamps #**197c-1.**, **241a-6.**, **243-5.** & **269-5**.
M8	5.M.3	Add stamp # **105f-1.**
M9	5.M.3	Add stamp # **109-1.**, **113-1,3.**, **113a-1.**, **119-1,3**., **120-1.,** & **122-1.**
M14	5.M.5	Add stamp # **90e**-1.
M23	5.M.7	Add stamp # **112iii-1.**
M28	5.M.9	Add stamp # **141-2.**, **162-1.** & **170-1.**
N1	5.N.1	Add stamps # ****136***-., ****137***-., ****138***-. & **3-110d-1.**
N5	5.N.2	Add stamp # **196-1.** & **FX9-8.**
		Change Latest Postmark from 1932/12/07 to **1933/08/02**
N8	5.N.3	Add stamp # **190-1.**
N15	5.N.5	Add stamp # **117a-1.**
N18	5.N.7	Add stamp # **135-1.**
-	5.N.7	Under N18 with a missing code hole add stamp # **222-5.** & **301-3.**
N19	5.N.7	Add stamp # **110d-1,7.**
N20	5.N.7	Change Earliest Postmark from 1940/07/25 to **1936/10/20**
N21	5.N.8	Add stamp # **106-7.**
N22	5.N.8	Add stamp # **92-1.**
N23	5.N8	Add stamp # **327-5.**
N33	5.N.11	Add Earliest Postmark **1916/--/20**
O1	5.O.1	Add stamp # **119d-1.**
O3	5.O.1	Add stamp # **105b-1.**
O5	5.O.2	Add stamp # **119c-1.**
O6	5.O.2	Add stamp # **116i-5.**
O7	5.O.2	Add stamp # **191-4.**
O8	5.O.4	To stamp E4-4. change to E4-4,**4*°**.
O9	5.O.5	Add stamps # **E6-4.** & **E11-1,3**.

O09		Change #259ii-1,1*. to **259i-1,1*.**
O10	5.O.5	Add stamp # **233-1*°.**
O12	5.O.6	Add stamp # **244-5.**
P5	5.P.2	Add stamp # **114iii-8.** & **117a-2.**
P7	5.P.3	Add stamp #**FWT10-4.**
P12	5.P.5	Add Earliest Postmark **1912/06/10**
		Change Latest Postmark from 1912/06/10 to **1913/07/17**
P13	5.P.5	Add to Notes **Cancelled with Fort Erie North (after 1930) and Fort Erie (on 240).**
	5.R.1	Add item.

- 

Damaged die of R9.

108-1. **108b**-1. **108c**-1.

R3	5.R.1	Add stamps # **163b-7.** & **MR2-6.**
		Add to bottom Note **Montreal cancels on Edward issues from 1909-1910.**
R5	5.R.2	Add stamps # **105f-7.** & **119c-5.**
R6	5.R.3	Add stamp # **108c-5.**
R7	5.R.3	Add stamp # **104x-7.**
R9	5.R.4	Add stamps # **105d-3.**, **108c-1.** & **MR3a-1.**
		Change Latest Postmark from 1947/01/29 to **1949/04/29.**
S1	5.S.1	Add stamps # **144-5.**, **FX7-2., FX67-4.** & **12-105-1.**
	5.S.1	Add item.

Damaged die of S4.

106-1. **107**-1.

S2	5.S.1	Add stamp # **193-7.**, **256-3., 376-3.** & **462-1.**
S3	5.S.2	Change Earliest Postmark from 1914/06/12 to **1912/02/20**
S7	5.S.3	Add stamp # **107v-1,5.**
S12	5.S.5	Add stamp # **108c-1.**
S15	5.S.5	Add stamp # **90x-1,3.**
S16	5.S.6	Add stamp # **197c-1.**
S20	5.S.7	Add stamp # **104x-1.**
S21	5.S.7	Add stamps # **58-1. & 111iii-1.**
T9	5.T.2	Add stamps # **167-1.** & **197c-1.**
W5	5.W.5	Add stamps # **285-1**. & **526-4.**

W7	5.W.3	Add stamps # **117a-3.** & **285-5.**
W10	5.W.5	Add Stamp # **54-4.**
		Delete stamps # **101 & 106.**
W15	5.W.7	Add stamp # **456-2.**
W16	5.W.7	Add stamp # **197-1.**, **217-1.** & **315-1.**
W18	5.W.7	Add stamp # **211-1.**
	D10	Perforated with **16 +7 31 / EFPEW** by E F Phillips Electrical Works of Montreal. Phillips would buy the stamp from Underwriter's Laboratories, perforate the stamp and attach it to the tag.  
	D10	Add "This unknown **?ERPA** cancel has been found on 107 with Brandon hand cancel." 
COMPLETELY REVISED Addendum G Precancel with Perfins See BNAPS website		
S22.1	I.2	Add stamp # **108-1.**
S22.3	I.3	Add stamp # **110d-1.**
S22.4	I.3	Add stamp # **171**-1.

S22.5	I.4	Add stamps # **115-1.** & **173-3.**
S22.7	I.4	Add stamps # **107e**-1. & **FWT8**-2.
S22.8	I.4	Add stamp # **110d-1,7.**
S22.9	I.5	Add stamp # **254-3.**
S22.10	I.5	Add stamp # **166-1.**
S22.14	I.6	Add stamp # **108-1.**
S22.15	I.6	Add stamp # **149-1.**
S22.16	I.6	Add stamp # **191-1.**
S22.19	I.7	Add stamps # **118-1., 144-3., 163b-1., 165-3. & 165a-7.**

SUN LIFE ASSURANCE COMPANY OF CANADA (S22)

Earliest and Latest Known Dates of Use

Jim Graham

The 6th edition of the Canadian Stamps with Perforated Initials handbook lists the earliest and latest known dates of each pattern. For the Sun Life S22 pattern currently the EKD is 1922/03/23 and the LKD is 1951/11/19. These dates are for the pattern generally. Addendum I lists the known issues and positions for each of the 19 cities with an S22 perforator but does not include an EKD or an LKD for the specific locations. We would like to amend Addendum I by adding this information. As a start the table below has the EKD and LKD from my own collection. When you have a moment would you please check you S22's and to see if you can provide new dates for any of these locationsthat will update the table below. Thank-you. My email is jdgraham2@gmail.com

SUN LIFE S22			
CITY	**EARLIEST KNOWN DATE**	**LATEST KNOWN DATE**	**NOTES**
Halifax	196-12-13	1937-05-20	EKD #107 cover; LKD #219 on cover
Saint John	1927-02-28	1936-02-10	EKD #107 on cover; LKD #219
Quebec	1924-02-13	1937-07-20	EKD #105; LKD #223
Trois Rivieres	1926-01-/	1937-06-17	EKD #107; LKD #223
Sherbrooke	1927-11-08-	1937-04-22	EKD#107 on piece; LKD #233 on cover
Ottawa	1924-03-04	1935-04-01	EKD #109; LKD #197
North Bay	-	1937-02-16	LKD #219 on cover
Toronto	-	-	
London	1932-02-11	1936-12-02	EKD #167; LKD #218;
Guelph	-	1935-01-03	LKD #219 on cover
Windsor	1932-07-28	-	EKD #167 on cover;
Peterborough	1927-07-09	1933-02-14	EKD #142; LKD #191 on cover
Fort William	1932-01-21	-	EKD #167;
Winnipeg	1922-05-09	1934-10-04	EKD #104 on piece; LKD #196
Regina	1931-12-31	1938-01-21	EKD #166; LKD #223
Saskatoon	1927-07-15	1934-07-27	EKD #107 on cover, LKD #197c
Edmonton	1926-08-31	1936-09-04	EKD #107 on piece; LKD #223
Calgary	1925-10-30	1936-04-14	LKD #105 on cover; LKD #218 on cover
Vancouver	1927-05-04	-	EKD #118;

Evans, Coleman & Evans Limited (E6) - Evidence for and Against a Multi-Die Machine

Russell D. Sampson
With valuable assistance from: Michael Behm, Patrick Durbano, Jim Graham and Ron Pazdzierski

Start from a position of doubt and don't be afraid to be wrong.
Anonymous

Figure 1 and 2: The cancellation on this cut-piece clearly shows this E6 perfin as the latest reported usage (LRU) to be 8 PM DEC 13 1917. The wavy line obliterator and its telltale "1" at center-left, indicating it was the first of the Type-H International "Flier" electrically driven machines used from Jan. 1, 1908 to Jun. 14, 1919 [2]. The "Service Letter" at the bottom of the wavy lines is a "T" which stands for "Transit". Figure 2 shows a "poor person's X-ray", produced using the transparency mode on an Epson V550 flatbed scanner, revealing a complete single perfin with no obvious evidence for perfins on either side.

INTRODUCTION

This is a testament to the power of peer review. From a single E6 sample an attempt was made to determine what machine it came from – either a single-die machine like the Cummins No. 50 or a multi-die like the 5-die No. 52. After completing a preliminary set of tests, the results appeared to suggest to the author that it was from a multi-die machine. These results and this conclusion were then submitted to a group of peers for their review and suggestions. The community rallied around this idea and three collectors then submitted samples of the E6 from their impressive holdings. The journey that followed is a tale of believing one thing from the meager evidence (i.e., one sample) – to explor-

ing new ideas and performing new tests, all suggested by these peers – our colleagues. Then afterwards, letting that new evidence tell another story and then ultimately leading to a more convincing and more powerful conclusion. This is the power of peer review.

Initial inspection of the "poor-person X-ray" image [1] of this E6 perfin, certainly suggests this perfin may have been made by a single -die the Cummins No. 50 or the very similarly designed No. 51 (see Figures 1 and 2). Perfins from multi-die machines with their patterns aligned with the stamp design and appearing on early commemorative format stamps like the Scott 135 almost always have two and sometimes three perfins with some or all being partial. This E6 sample has only one perfin and no sign of a second or third on either side. But what does the data say?

To investigate which hypothesis has the most supporting evidence – single-die versus multi-die – a series of empirical tests were devised as follows; 1) the frequency of lone perfins from multi-die machine occurring on early commemorative format stamps, 2) the inter-die spacing of a multi-die machine and the possibility of such a machine producing what is seen on the E6 perfin in this study, 3) perfin position distribution of single-die versus multi-die machines, 4) the angular displacement between the stamp design and the perfin pattern (i.e., tilt of the perfin on the stamp), 5) whether the design of the two machines could put subsequent constraints on the appearance of the perfin and finally 6) what are the sample-to-sample variations of the E6 perfin and how do these variations relate to those produced by a multi-die machine?

Figure 3 and 4: This I21 (International Harvester Co., Winnipeg) sample on Scott 175 is from a confirmed 5-die machine and is from the collection of Jim Graham. It clearly shows no sign of a perfin die to the left of the perfin. From measurements of samples from the author's collection, this pattern has an inter-die spacing of 20.7-mm ±0.2-mm. From this, the author constructed a virtual pattern and in Figure 4 placed it at the expected location to the left of the actual perfin. It is obvious that there is no perfin pattern at this location and therefore suggests that single perfins from 5-die machines that are aligned with the stamp design (i.e., position, 1, 3, 5 and 7) can appear on early commemorative formatted stamps like the E6 sample in Figure 2.

1. SINGLE PERFINS ON EARLY COMMEMORATIVES

The first place to start is to see how common lone perfins from confirmed 5-die machines appear on early commemorative stamps like the Scott 135.

The most common perfins produced by confirmed 5-die Cummins No. 52 machines are the I21 (IHC, Winnipeg), the L1 (LA) and the M23 (MR/MC). These perfins were examined from the collections of the author and Jim Graham. To make a relevant com-

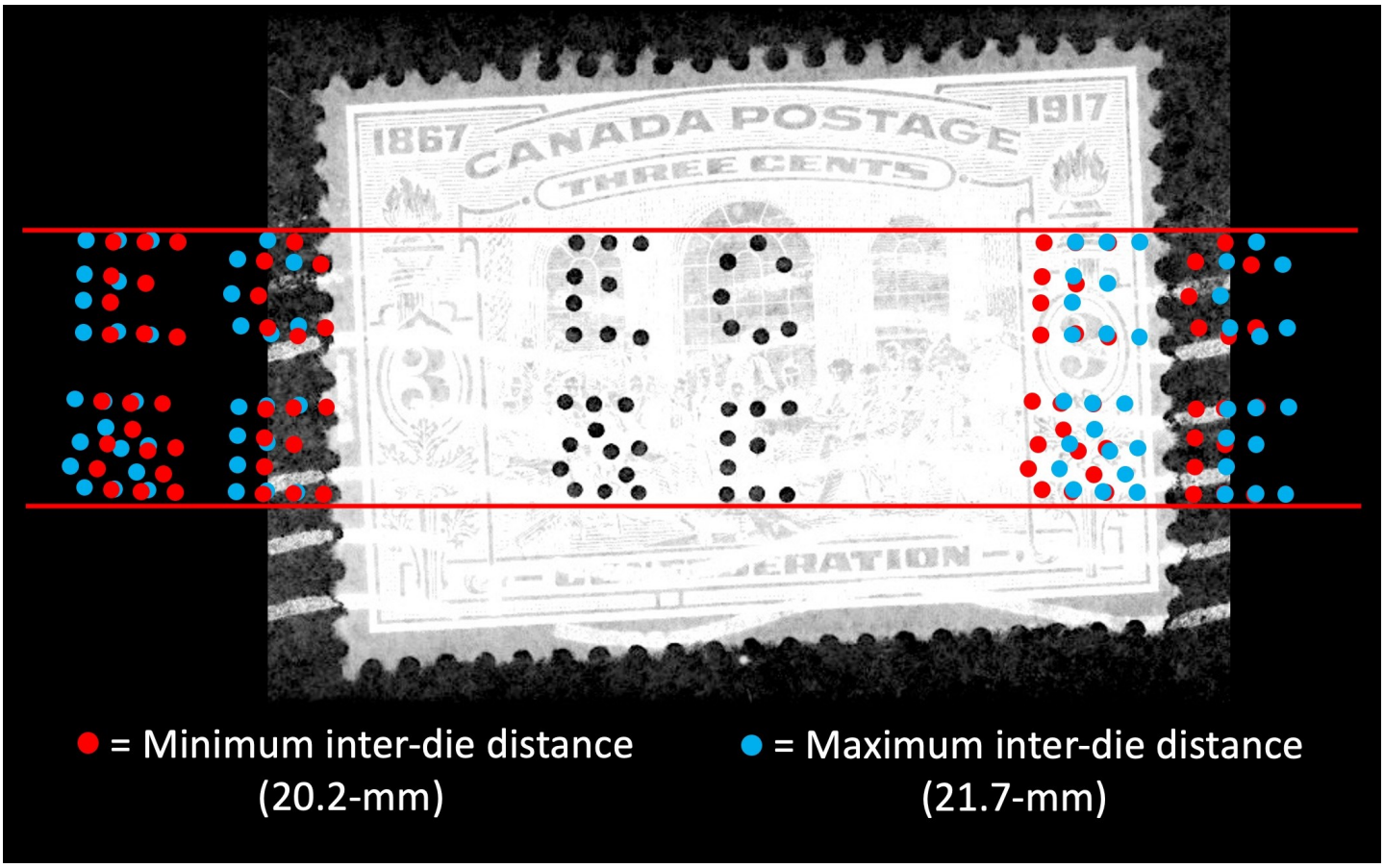


Figure 5: The copies of the E6 pattern were put on either side of the perfin displaced by the range of inter-die distances measured by the author (i.e., the blue and red virtual perfins). It is obvious that there is no actual perfin to the right of the actual lone perfin that appears on the stamp at the expected inter-die distances. The placement of the virtual perfins to the left of the perfin however, clearly suggest that the E6 could have been a multi-die machine since the maximum inter-die distance causes the virtual perfin to be placed clearly onto the next stamp. On the other hand, the shortest inter-die distance places the virtual perfin very near the stamp's perforations and since there is no signs of a deflection of the tear-line, this provides evidence for the single-die hypothesis.

parison to the E6 in Figure 1, the I21, L1, and M23 samples selected from the two collections were a) only on early commemorative format stamps like the Scott 135, and b) only having their perfins oriented along the long-axis of the stamp like the E6 in this study (i.e., only positions 1, 3, 5 and 7).

The results of the survey are that out of a total of 156 samples only one perfin (0.64%), was obviously a single perfin, an I21 from Jim Graham's collection (see Figure 3 and 4). This clearly suggests that single perfins from 5-die machines that appear on early commemorative formatted stamps are not common. The rarity of such single perfins from the confirmed 5-die machines clearly suggests that the odds are against this E6 originating from a 5-die machine. Yet that single I21 perfin also suggests that the multi-die hypothesis for the E6 cannot be completely discounted from this evidence.

As outlined in NOTES section N3 at the end of this article, there existed an earlier version of the 5-die Cummins No. 52 which provides a possible explanation for the existence of the I21 single perfin found on Scott 175.

2 INTER-DIE SPACING

Inter-die spacing is the distance between neighboring perfin patterns produced by multi-die machines. In this study it is measured from the same side of the same perforation, for example the left side of the first perforation in the "C" to the same side of the same perforation on the next perfin's "C".

The inter-die spacing of these machines were designed to be the same or very close to the horizontal inter-design spacing of the common definitive stamps of the era (e.g., The US Washington/Franklins and the Canadian King's portrait stamps like the Admirals). There is a very important exception to this rule as outlined in the NOTES section N1 provided at the end of this article.

Virtual copies of the E6 pattern were produced in PowerPoint and placed on either side of a scan of the E6 perfin at the expected inter-die distance for a multi-die machine like the 5-die Cummins No. 52. The pixel coordinates of the image, corrected for systematic linear distortion from the flatbed scanner (measured to be about +0.26% in the x-direction) were used as a guide for the placement of these virtual perfins (see Figure 5).

From a previous investigation, the author obtained measurements from his collection of the inter-die distance from 116 different perfin patterns that exhibited spacing and alignment indicative of a multi-die perforating machine. These inter-die measurements were obtained from either early commemorative stamps like the Scott 135 that had two or more perfin patterns or from stamp multiples (i.e., pairs, strips and blocks). The range of this spacing was found to be between 20.2 and 21.7-mm which – as expected – is similar to the horizontal inter-design spacing (i.e., ink-to-ink spacing on a sheet of stamps) of the common King's portrait definitives of the era such as the Admirals.

These virtual perfin patterns produced in PowerPoint were then placed at 20.2 and 21.7-mm to the right and left from the E6 perfin in Figure 5. If these virtual perfins were found to fall upon the stamp, then the possibility of the E6 machine being a single-die would improve since there is no obvious evidence of perfins visible to the right or left of the actual E6 perfin specimen (see Figure 5).

The results clearly suggest that there was no die to the right of the actual perfin pattern at the expected inter-die spacing range (as viewed from the ink-side of the stamp). To the left side of the perfin, however the situation is not as clear. At the maximum inter-die distance (21.7-mm) an expected die from a multi-die machine would fall clear of the perforations of the stamp. Since, it is not obvious that at this location the perfin perforations would cause any obvious alteration to the stamp's perforation tear-line, one must conclude that there is a possibility that the E6 was produced by a multi-die machine.

At the closest inter-die distance of 20.2-mm however, the right-most perforations from the expected next die of a multi-die machine would almost certainly have caused some disturbance in the tear-line of the stamp, and yet there is none (i.e., no pulled perforations or no extended perforations). Therefore, this appears to support the single-die hypothesis.

Thus, this line of evidence appears to be somewhat inconclusive. The 21.7-mm inter-die simulation in Figure 5 suggests a multi-die machine is possible, however the results of the 20.2-mm inter-die simulation suggests a single-die machine is also possible. The statistical distribution of inter-die spacing of all 116 samples from my collection shows about equal numbers at or close to the 20.2-mm spacing, as those at the other extreme (i.e., the 21.7-mm side). Thus, the conclusions of this test appears to be a bit of a wash.

3 PERFIN POSITIONS

Possible evidence now comes from the Handbook [3]. The reported positions of the E6 are mostly position 1, something one would expect from a properly used 5-die Cummins No. 52 or 10-die No. 53. Those perfin patterns that have been more conclusively linked to a single-die machine (e.g., the J10 (JMD), W9 (WJG), W10 (W.J.G.) and the O4 (OFM)) all have reported positions clearly showing much more variety, with some appearing in all eight positions (e.g., the O4 and J10 on Scott 90). Yet, there is no similar position variance with the E6.

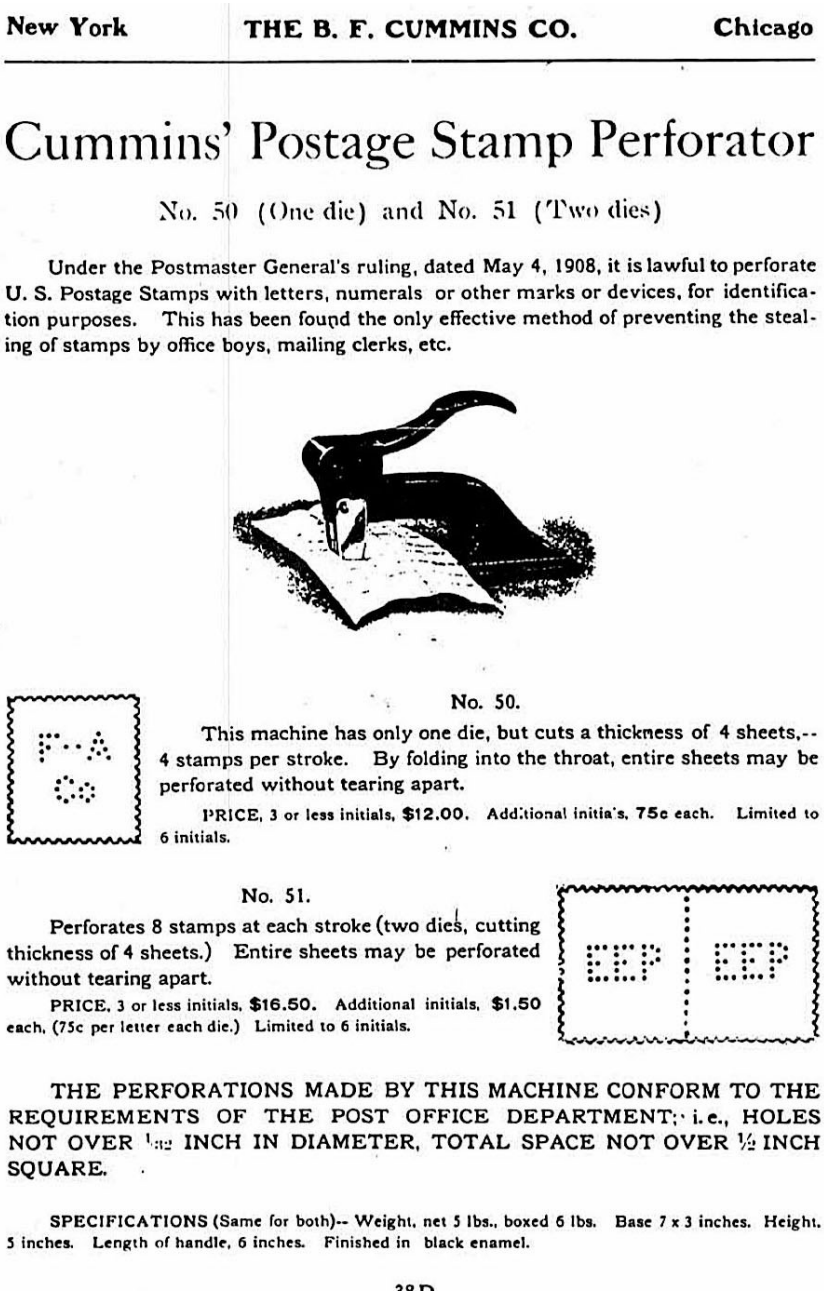
This line of evidence is rather weak with respect to the E6, since one is dealing with the limitations associated with the "*statistics of small numbers*". This investigation is attempting to find evidence of eight positions when there are very few samples of the E6. As mentioned in a previous paper [4] a trustworthy

survey requires a proper sample size and the E6 has a rarity factor of C, which means that only 11 to 30 specimens are known to exist. Therefore, such a small sample could be easily biased especially when compared with such perfins as the J10, O4, W9, and W10, with the least common O4 having a rarity factor of D (i.e., 31 to 100 reported) while the very common W9 has a rarity factor of G with between 1,001 and 3,000 known specimens.

Nonetheless, the evidence provided by the catalogued positions appears to slightly favor the multi-die hypothesis.

4 PERFIN TILT

One possible avenue of evidence supporting the single-die hypothesis was suggested by the peer reviewers of this manuscript. A higher degree of tilt of the perfin with respect to the stamp design has been anecdotally reported in samples produced by single-die machines. It is apparent from the catalogue descriptions of the Cummins No. 50 (single-die) and No. 51 (2-die) that these machines lacked both a metal "plate" and a "marginal guide" to help align the sheets of stamps as they are fed through the machine (see Figures 6 and 7). This clearly suggests that an operator of the single-die No. 50 machine might be challenged to maintain accurate alignment of the perfin with the stamp design. Therefore, it is expected that perfins from single-die machines should exhibit a higher degree of tilt with respect to the stamp design. On the other hand, perfins from the 5-die Cummins No. 52 should display significantly less tilt.



New York THE B. F. CUMMINS CO. Chicago

Cummins' Postage Stamp Perforator

No. 50 (One die) and No. 51 (Two dies)

Under the Postmaster General's ruling, dated May 4, 1908, it is lawful to perforate U. S. Postage Stamps with letters, numerals or other marks or devices, for identification purposes. This has been found the only effective method of preventing the stealing of stamps by office boys, mailing clerks, etc.

No. 50.

This machine has only one die, but cuts a thickness of 4 sheets,--4 stamps per stroke. By folding into the throat, entire sheets may be perforated without tearing apart.

PRICE, 3 or less initials, $12.00. Additional initials, 75c each. Limited to 6 initials.

No. 51.

Perforates 8 stamps at each stroke (two dies, cutting thickness of 4 sheets.) Entire sheets may be perforated without tearing apart.

PRICE, 3 or less initials, $16.50. Additional initials, $1.50 each, (75c per letter each die.) Limited to 6 initials.

THE PERFORATIONS MADE BY THIS MACHINE CONFORM TO THE REQUIREMENTS OF THE POST OFFICE DEPARTMENT; i.e., HOLES NOT OVER 1/32 INCH IN DIAMETER, TOTAL SPACE NOT OVER ½ INCH SQUARE.

SPECIFICATIONS (Same for both)-- Weight, net 5 lbs., boxed 6 lbs. Base 7 x 3 inches. Height, 5 inches. Length of handle, 6 inches. Finished in black enamel.

Figure 6. A page out of the 1909 catalogue [5] of the Cummins Perforating Co. showing the single-die No. 50 and 2-die No. 51. Note the lack of any guide-rail or table to assist in the alignment of the stamp design with the perfin design as the sheets are fed through the machine.

To test this, the angular orientation of perfin patterns produced by confirmed 5-die machines were measured with respect to the design of similarly formatted stamps to the Scott 135. If the degree of tilt from these 5-die machines was significantly and consistently less than the E6 sample in Figure 1 and 2, then it could be presumed that the most likely source of the E6 was a single-die machine. The estimated angular deviation between the E6 perfin pattern and the stamp design was found using scans imported into PowerPoint. From these scans four measurements were made using a straight line drawn over the top edge of the stamp design in Figure 2. This line was then moved to the perfin pattern where its angle was measured with respect to the horizontal components of the perfin (e.g., the top and bottom of the "EC"). This value was measured using a drafting protractor, dividing into half-degree increments. The protractor was held onto the computer screen.

The four measurements were then averaged and a sample standard deviation calculated to give an estimate to the statistical spread of the measurements (i.e., the "plus or minus"). The result was 3.5° ±0.5°. In addition, scans of five samples of the E6 were supplied by Ron Pazdzierski. Four of the five showed negligible tilt of the perfin design with respect to the stamp design. The fifth sample showed an average tilt of 3.4° ±0.6°, which is very similar to the author's sample. Now what about those 5-die machines?

Three of the most common confirmed 5-die perfins are the I21 (IHC – Winnipeg), the L1 (LA) and the M23 (MR/MC). From the author's collection, 29 early commemorative formatted stamps were selected with I21, L1 and M23 perfins that had similar positioning (i.e., position 1, 3, 5, or 7) as the E6 in this study. Out of this sample, seven stamps (24%) were found with noticeable angular deviations of greater than about 0.5°. Of these seven, the sample with the greatest angular deviation was found to have a tilt of 4.6° ±0.1° (an M23 on Scott 271). This clearly suggests that a 5-die machine can produce a similar tilt as the E6 sample in this study. Therefore, this test appears to have been inconclusive.

Nonetheless, this test establishes some preliminary benchmarks that may be used in future tests of the single-die hypothesis with other suspected perfin patterns. Specifically, if the perfin is single and the tilt is greater than 5°, then the tilt may be considered evidence in support of a single-die hypothesis. Further measurements of the tilt of confirmed 5-die perfins will put this conjecture on a firmer empirical footing. Are there such samples with tilt greater than 5°?

It should be noted that the existence of an earlier version of the 5-die Cummins No. 52 puts these results into a new light, since this machine's design permitted more freedom of movement of the stamps. For more on this see NOTES section N3 at the end of the article.

5. THE DESIGN OF THE TWO MACHINES

According to the Cummins Perforator Co. catalogue, the 5-die No. 52 appears to have been made for *right-handed* operators and therefore the stamps would be normally fed through the machine according to the coloured annotations in Figure 7. The "marginal guide" mentioned in the catalogue description (coloured green in Figure 7) guides and most importantly – limits the movement of the sheet of stamps as it is being fed through the machine. The single-die No. 50 has *no* such marginal guide (see Figure 6) and therefore the stamp is unrestricted in its position and angle with respect to the perforation die. This may explain why single-die machines appear to produce a high degree of perfin position variability.

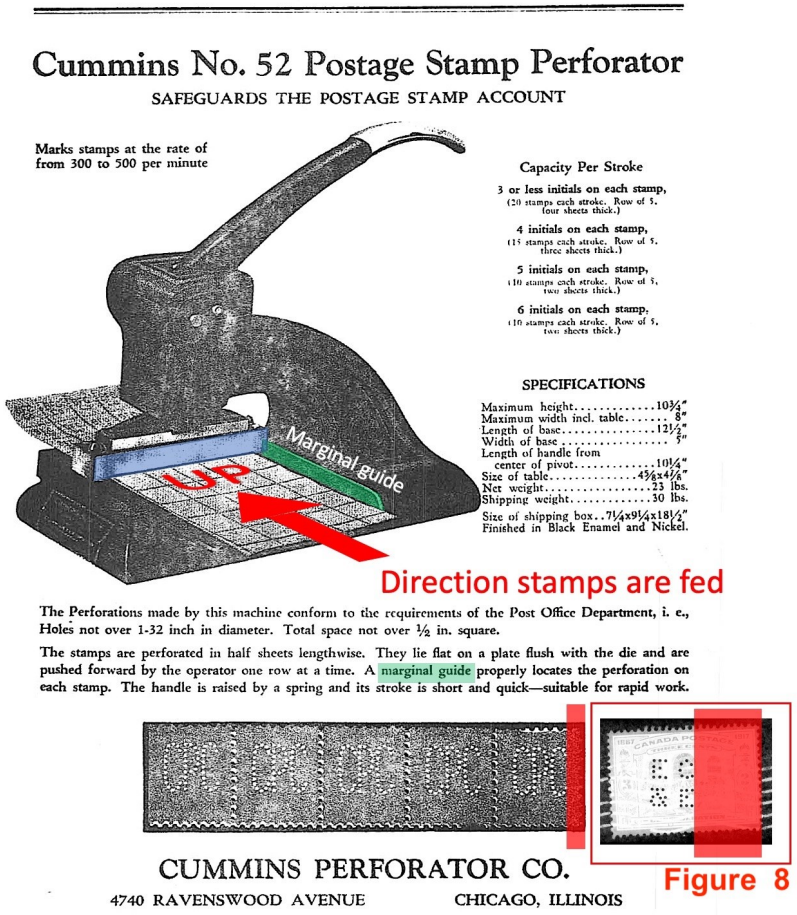


Figure 7 and 8. A page out of a catalogue [7] of the Cummins Perforating Co. showing the 5-die No. 52. Coloured annotation has been added to show the direction the partial sheets were expected to be fed through the machine and the "marginal guide" used to help align and guide the partial sheets. Figure 8 is a scaled image of the E6 from Figure 2 used to show the excess space to the right of the perfin (red rectangle) as compared to the excess space on the sample perfins in the Cummins ad. It is apparent from this that the E6 could not have gone through such a machine as shown in the catalogue

Clearly if an operator was to guide a partial sheet of stamps through the machine in Figure 7 using the marginal-guide and table, the far right-hand stamp would receive the far right-hand perfin die (i.e., die-5). In addition, if a partial sheet of the Scott 135 were to be fed in such a way as to produce the E6 perf

-fin in Figure 1, then the "marginal guide" would have prevented the stamp from being pushed further to the right of die-5 and therefore, prevent the excess space seen to the right of the E6 perfin in Figures 1 and 2. This fact is illustrated using semi-transparent red rectangles in Figure 8 where comparison can be made of the sample strip provided in Cummins catalogue with the scaled image of the E6 (Figure 8). Therefore, the excess space on the right of the E6 sample in Figure 1, *strongly* suggests the E6 was not produced by the machine in Figure 7 but more likely by the single-die No. 50.

As mentioned above however, evidence has emerged of an earlier design of the Cummins No. 52 that may have allowed more freedom of motion and positioning of the sheets of stamps (see NOTES N.3 at the end of this article). This model also appears to have had a marginal guide (see Figure 13) that would have prevented the excess space that appears on the E6 sample in Figure 1 and 2 but may have allowed the production of the lone I21 perfin as seen in Figure 3.

It should be noted that there is a possibility of a third hypothesis – a 2-die machine. The peer review community and the author were surprised to learn that Cummins Perforating Co. actually made a 2-die machine, the No. 51 (see Figure 6)

Figure 9: Sample-to-sample comparison of scans of the E6 perfin samples supplied by Ron Pazdzierski. Differences in placement of perfin holes between samples appear as bright crescents at each perforation. The thicker these crescents the greater the difference in the perfin placement between samples and suggests that the samples may have been produced by different dies, and thus a multi-die machine. The closer the samples appear to each other, the better the evidence for a single-die machine.

6. SAMPLE-TO-SAMPLE DIE COMPARISONS

The final test involved the comparison of scans of multiple samples of the E6 supply by Patrick Durbano and Ron Pazdzierski.

If the E6 was produced by a single-die machine, then it would be expected that the sample-to-sample comparison of the perfins should show a very close match. From an unpublished study by the author of the O8 perfin (i.e., the five-hole OHMS) which was produced by a 5-die Cummins No. 52, the greatest die-to-die displacement was found to be no greater than about 0.25 perfin hole diameter (0.20-mm). Therefore, if the E6 samples show significantly less displacement than 0.20-mm, then this would be evidence in support of the single-die hypothesis.

The highest resolution scans from Pazdzierski were of the fronts of the stamps placed on a white background. To do the comparison of the perfin patterns these scans were first converted into high-contrast negatives in Preview for Mac. The colour values of these negatives were then adjusted to reduce the stamp to near-white but leave the perfin perforations as dark as possible. All scans were then imported into PowerPoint. The negatives were then turned 50% transparent, an operation found in the Picture Format pull-down menu. These copies were then carefully placed over top of the normal scans of each of the other perfins making sure the scaling of the images was preserved. Using the fine-motion and rotation functions found in Picture Format, these semi-transparent negatives were carefully aligned over-top the normal perfin images. The final images were then enhanced further in Preview. Any differences between the two perfins would show up as bright crescent-moon shapes around each perforation. Samples of these tests can be seen in Figure 9.

A visual analysis of the results clearly showed that the sample-to-sample variations in the E6 perfins were relatively small (i.e., less than a quarter perfin diameter difference). The part of the perfin that showed the greatest apparent variability were holes C1 and C2 (the top-right two holes in the "C") when the E6 perfin on the Scott 111 was placed over E6 on the Scott 104.

Effects like shadows caused by the flatbed scanner , however appear to have been a source of systematic error in the visual estimation, or "fit" between the two perfin images from the Pazdzierski samples. Such shadows were typically and consistently found at the lower part of the perfin holes and are likely caused by the vertical displacement between the scanner's light source (i.e., a linear array of LEDs) and its trailing light sensors (i.e., a separate linear array of CCD imaging sensors).

To compensate for such effects, a second comparison was done between the "C" from the Scott 111 and that on the Scott 104. This test involved visually placing a virtual perforation over each perfin hole of the Scott 111. These virtual perfin holes were constructed in PowerPoint as a series of identical empty red circles that were carefully fitted over each Scott 111 perfin hole. The completed "C" was then "Grouped", "Copied" and "Pasted" over the "C" on the Scott 104 (see Figure 10).

Measurements of the displacement between these virtual perfin holes of the Scott 111 and the actual perfin holes in the Scott 104 show a displacement no greater than about 0.10 perfin diameter (0.08-mm). This is significantly less than the maximum perfin displacement found in the die-to-die comparison of the 5-die O8 (OH/MS). Thus, the result illustrated in Figure 9 and 10 strongly suggests that all the perfins in the Pazdzierski samples were produced by the same die, and thus most likely a single-die machine like the Cummins No. 50.

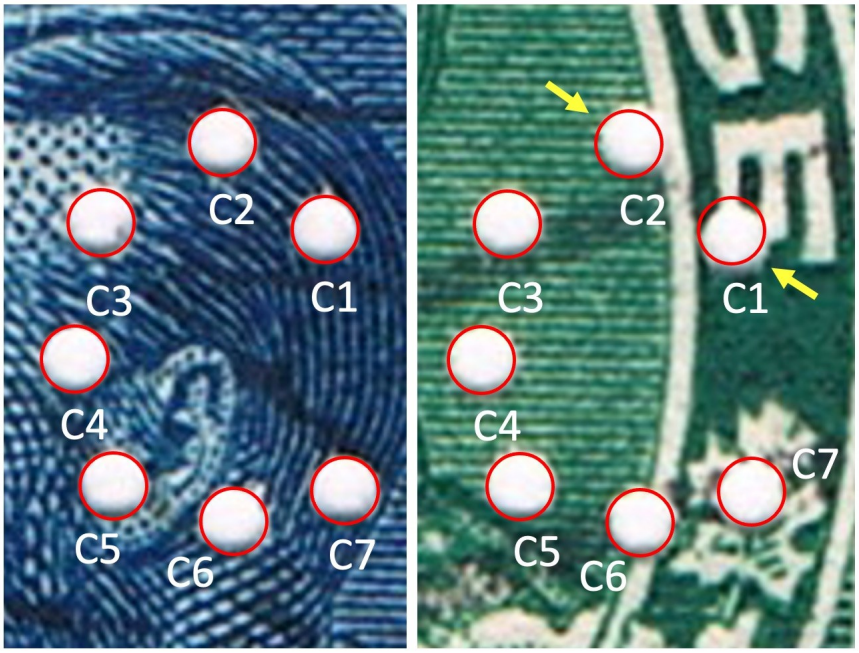


Figure 10: Additional sample-to-sample comparison of the Pazdzierski E6 perfins. This test compensated for systematic effects caused by the scanner (e.g., shadowing) and shows a better fit between perfin samples and thus further suggests the samples all came from the same die and likely a single-die machine.

To drive home this result, a similar test was performed on scans of five samples of the E6 provided by Patrick Durbano (see Figure 11). Since these scans had a black background the systematic effects of shadowing were greatly reduced and therefore the negative copies of these samples would be better representative of the shape of the perfin perforations. Overlaid negative images reveal even less deviation than the Pazdzierski samples. These results suggest variations of less than 0.1 perfin diameter and those variations may be solely a result of errors from PowerPoint's image rotation algorithm. Evidence for this experimental error was found from performing an image shear analysis. In this situation, image shear is the translational or rotation movement of an image with respect to the original image. Here arrows were placed over each perfin hole. These arrows were scaled according to the magnitude of the positional difference between the perfin holes (e.g., scale of 0.1-inch = 1-pixel of difference).

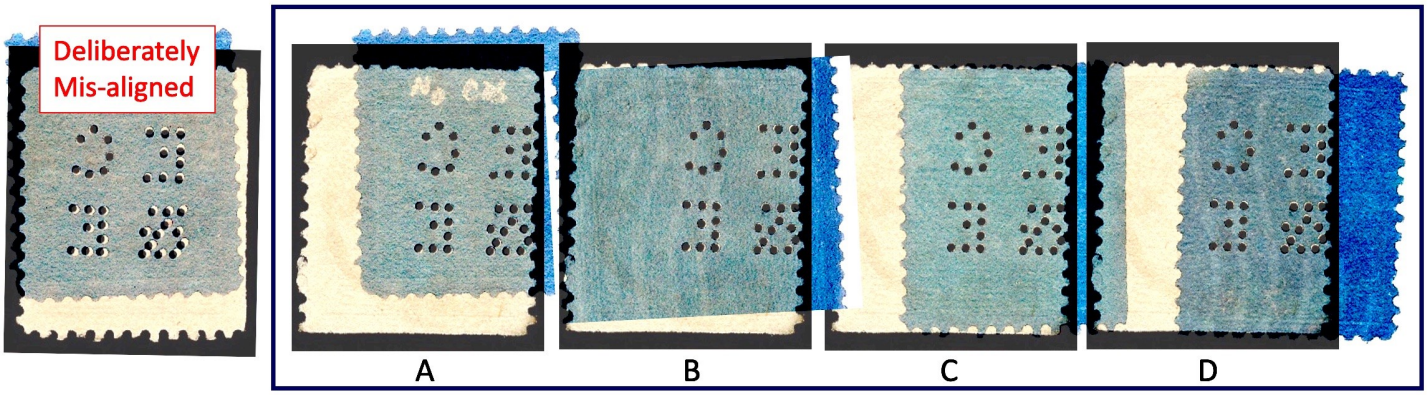


Figure 11: Sample-to-sample comparisons of the Durbano E6 perfins. The fit between samples appears to be slightly better than the Pazdzierski samples, likely due to the higher contrast between the stamp and the perfin holes. The image at far-left is deliberately mis-aligned in order to illustrate how die-to-die differences should appear, as bright crescents around the holes. The thicker these crescents the greater the difference between the two dies.

The direction of the arrows pointed towards the maximum difference. This is the thickest part of the crescent -shaped bright areas around the overlaid perfin holes. This analysis is illustrated in Figure 12. The results clearly suggest that the largest apparent difference in the Durbano samples may have come from a rotational shear about a center of radius to the left of the second "E" in the perfin pattern. This further suggests that the apparent differences in this sample were likely due to limitations inherent in the image rotation algorithm in PowerPoint (i.e., image rotation is confined to increments of 1°).

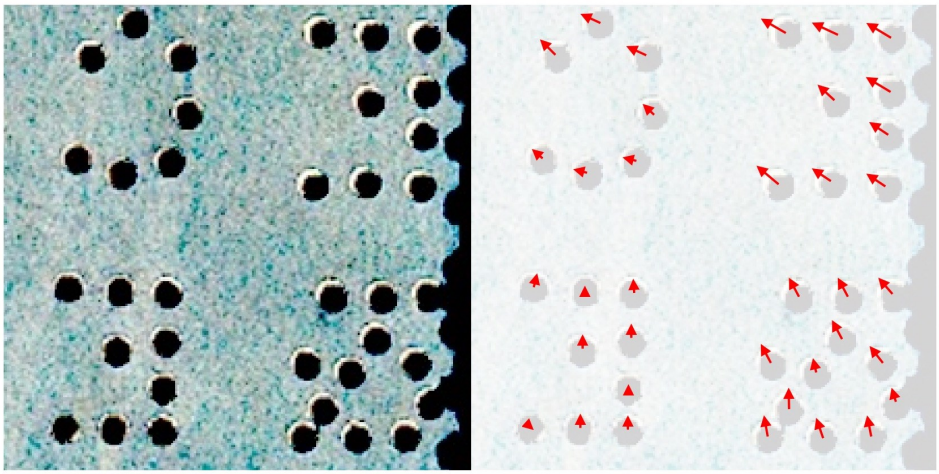


Figure 12: Image shear analysis of image "B" in Figure 11 of the Durbano E6 samples showing clear evidence for rotation shear about a center of radius near the second "E" in the pattern. This further suggests the apparent differences between these two perfin samples are likely due to experimental error caused by the image rotation algorithm in PowerPoint.

The results from the Durbano samples appear to greatly enhance the evidence found from the Pazdzierski samples and provide further support for the single-die hypothesis.

CONCLUSIONS

None of the samples from any of the collections examined by the author (i.e., seven from Behm, six from Durbano, five from Pazdzierski and one from the author) showed any obvious signs of an adjacent perfin die. Such evidence would appear as partial perfins, or signs of irregularities in the tear-line of the stamp's perforations at the expected locations adjacent to the perfin. This is the first and most obvious indication that the single-die hypothesis may be the best hypothesis. Here a value of 0 indicates the test provided no supporting evidence or provides evidence against a particular hypothesis, while a value of 3 indicates strong supporting evidence for a particular hypothesis. The results appear in Table 1.

Test	Single-Die [value]	Multi-Die [value]
Single perfins on Commemoratives	3	1
Inter-die spacing	1	1
Perfin positions	1	2
Tilt of perfin	1	1
Machine design constraints	3	0
Die variations	3	0
Totals:	**12**	**5**

Table 1: This table tabulates the relative weight of each line of evidence with respect to the two hypotheses. The higher the number the greater the weight of the evidence in favor of a particular hypothesis.

It is apparent that the weight of the evidence favors the single-die hypothesis. It is interesting to note however, that prior to peer-review the initial evidence was derived only from the inter-die spacing, and perfin positions. As evident in Table 1, the weight of these two tests slightly favored the multi-die hypothesis (i.e., 3 to 2). It was not until after acting on the suggestions of these peers, and receiving the generous participation from Durbano and Pazdzierski, that the evidence swung convincingly towards the single-die hypothesis.

This is not a baseball game with an unquestionable winner however, this is evidence-driven philatelic science. The results in Table 1 only suggest which is the *best* theory according to the available evidence. One must always remember that – to paraphrase Thomas Huxley the renowned 19th century English biologist – *a beautiful theory can be slain by a single ugly fact*.

So, as perfin collectors, we should always be vigilant, always be skeptical and always be on the lookout for further evidence that may support or may ultimately slay such beautiful theories.

NOTES

N1. AN EXCEPTION TO THE INTER-DIE SPACING

The exceptions to the inter-die distance range of 20.2 and 21.7-mm are the two four-hole OHMS perfins – O9 and O10. Unpublished research from the author has clearly demonstrated that the inter-die spacing of the 4-hole OHMS perfins O9 and O10 may be unique in Canadian perfin history. From numerous measurement these two perfins were found to have an inter-die spacing of 24.7 ±0.1-mm which is an excellent match to the *vertical* inter-design spacing of 24.7 ±0.1-mm found on the King's portrait definitives of the era (e.g., the Admirals, KGVI Mufti and War Issues).

This implies that to have the O9 and O10 perfin properly centered on these kinds of stamps, those sheets of stamps needed to be fed through the 10-die machine *sideways*.

This further explains why the O9 and O10 perfin on such King's portrait definitive stamps are almost always found with the normally *uncommon* positions of 2 and 4, rather than the much more common and expected position 1.

N2. THE 2-DIE CUMMINS NO. 51

The author and peer reviewers were surprised to find that Cummins made a 2-die machine called the No. 51 (see Figure 6). This machine appears to be similar in overall construction to the single-die No. 50. The sample perfin illustrated in their catalogue ("EEP") appears to be an actual American company perfin. According to the American Perfin catalog "EEP" is the E032 from the Edward E. Poore Company of New York, NY. This company's perfins are found on US stamps during the period between 1902 to 1909 which match the approximate date range of the confirmed single-die Cummins perfins in the Canadian catalogue. Canadian collectors should now be on the lookout for the first confirmed BNA perfin from such a 2-die machine.

N3. A SECOND 5-DIE MACHINE DESIGN

The fact that a confirmed 5-die machine could produce the I21 perfin in Figure 3 is a puzzle. The No. 52 machine has a slotted metal assembly that acts as a guide for the partial sheet of stamps (highlighted in blue in Figure 7) and this design should not allow the stamps to overhang the die array. This should therefore, prevent the excess space seen on the I21 sample in Figure 3. But there it is!

A possible solution to this enigma comes from a page out of the B. F. Cummins Co. catalogue [5,7].

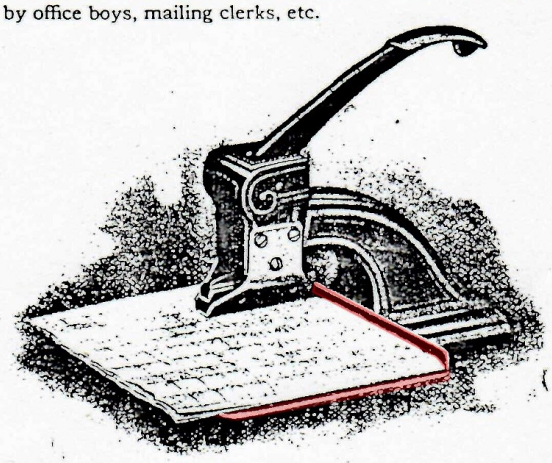
Apparently, there existed another version of the 5-die No. 52 – one with a more open architecture than the one pictured in Figure 7 (see Figure 13). This appears to be an earlier version of the No. 52, and has a similar head as the No. 50 and No. 51, which allows the operator more freedom to place the sheet through the machine. If the figure from the catalogue is correct, the entire sheet is allowed to move though the machine, thus providing ample room to produce the empty space seen in the I21 sample in Figure 3.

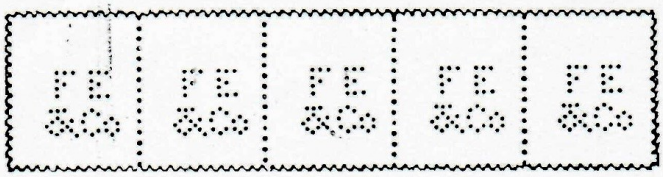
New York THE B. F. CUMMINS CO. Chicago

Cummins' Postage Stamp Perforator

No. 52 (Five dies)

Under the Postmaster General's ruling, dated May 4, 1908, it is lawful to perforate U. S. Postage Stamps with letters, numerals or other marks or devices, for identification purposes. This has been found the only effective method of preventing the stealing of stamps by office boys, mailing clerks, etc.





THE PERFORATIONS MADE BY THIS MACHINE CONFORM TO THE REQUIREMENTS OF THE POST OFFICE DEPARTMENT; i. e., HOLES NOT OVER 1/32 INCH IN DIAMETER, TOTAL SPACE NOT OVER ½ INCH SQUARE.

The stamps are perforated without being separated from the sheet. They lie flat on a plate flush with the die and are pushed forward by the operator one row at a time. An adjustable marginal guide properly locates the perforation on each stamp. The handle is raised by a spring and its stroke is short---suitable for rapid work.

PRICES and CAPACITIES

Perforating:	Price
3 or less initials on each stamp (20 stamps each stroke. Row of 5, four sheets thick.)	$27.50
4 initials on each stamp (15 stamps each stroke. Row of 5, three sheets thick.)	$31.25
5 initials on each stamp (10 stamps each stroke. Row of 5, two sheets thick.)	$35.00
6 initials on each stamp (10 stamps each stroke. Row of 5, two sheets thick.)	$38.75

SPECIFICATIONS:—Weight, net 23 lbs., boxed 28 lbs. Base 5 x 11 inches. Height 10½ inches. Length of handle, 11 inches. Finished in black enamel and nickel.

38 C

Figure 13: A page from the B F Cummins catalogue [7] showing an earlier version on the five-die No. 52. Note the open architecture of the head which allows much more freedom of movement of the sheet of stamps. Note the table and marginal guide colour in red. This is absent from the No. 50. The design differences from the later version of the No. 52 could explain the appearance of the solitary I21 perfin in Figure 3. It also suggests a possible explanation for the appearance of the E6 in Figures 1 and 2. This explanation appears to be less likely however, because of the weight of the evidence from the tests in this investigation.

REFERENCES:

1. Sampson, Russell D. (2019), **How to Scan a Perfin on Cover to Produce a High-Contrast Image of the Pattern**, The BNA Perforator, Vol. 40, No. 2, Whole number 151, pp. 9
2. Coutts, Cecil C. (2016), **International Rapid Cancelling Machines, Volume 1 – Western Canada**, BNAPS, Exhibit Series (August 2016)
3. Johnson, J., and Tomasson, G. (2022), **Canadian Stamps with Perforated Initials (6th Edition)**, British North American Philatelic Society, https://bnaps.org/PerfinHandbook/PerfinHandbook.htm
4. Sampson, Russell D. (2022), **What Causes Perfin Positions, Part 1**, The BNA Perforator, Vol. 43, No. 3, Whole number 161, pp. 29
5. Cutler, Douglas J., (1996), **Cummins' Postage Stamp Perforator**, Perfins Club Bulletin, Vol. 50, pages 35-36 (February)
6. The B. F. Cummins Co. of Chicago, (1909), **Catalog and Price List of Perforators**
7. Anonymous, (1993), **B. F. Cummins Perforator Machines, No. 52**, Perfins Club Bulletin, Vol. 46, pages 190 (October)

Member Requests

David Truijen is a fairly new to perfin collecting (less than 5 years) and looking to **trade** duplicates to fill in holes in his collection. While he only collect perfins on QEII stamps, he has stamps from KEVII to QEII eras for trade. He is "*position agnostic but will search duplicates for your positions if you swing that way*". If interested, send your want list to david.truijen@gmail.com.

Kerry Bryant is looking to buy P18 and P19 Province of Saskatchewan perfins—singles , multiples, accumulations, odds and ends (on or off paper), accumulations , collections, "whatever you have is of interest" to him. Kerry can be reached at kerrybryant@myaccess.ca or Box 5104 Victoria BC V8R 6N3
