TECHNOLOGY REACHES A NEW HEIGHT

FIFTY YEARS AGO THE SPACE AGE BEGAN

A REVOLUTION IN PROCESSING MAIL ALSO PARALLELED THIS EVENT

A J Savakis, Editor

Fifty years ago, on October 4, 1957, officials in Moscow announced that the Union of Soviet Socialist Republics (USSR) successfully launched an artificial satellite into orbit.[1] Technology and rocketry were advancing over a very long period of time. Nevertheless, it was this launch that divided clearly the before and after of the start of the Space Age.

David S. Ball wrote in April 2007 for Machine Cancel Society's quarterly publication, *Machine Cancel Forum*, about the collaboration of machine cancel collectors (mechano-marcophilatelists) and the collectors of space covers (astrophilatelists). Besides sharing an interest in cancellations (machine cancel collectors studying the machines that produced the cancellation and astrophilatelists studying the dates of application of the cancellation as they relate to time and place of a space event) we also share technology. The same technology that made the space age possible (advances in electrical and mechanical devices) made mail processing faster and better. It is therefore no accident or coincidence that the technology that would drive a rocket into space to launch an artificial satellite in October 1957 would also drive advances in mail processing that would culminate in an integrated mail processing and cancelling system in 1959.

Both mechano-marcophilatelists and astrophilatelists share an interest in identifying the machines that applied the cancellations. The former is also interested in tracking the technology and market uses, and this in turn helps in identification. Speaking to non-collectors of machines, who only see a round dial and wavy line cancels, they are fascinated at the amount of literature available on the subject. How much can be published on such a subject?

The periodical on machine cancels is *Machine Cancel Forum*, and published from 1974 to 1986 privately by John W. Koontz and John R. McGee, consisting of 1980 pages. This period is sometimes referred to as *Forum I*. The current series is published by the Machine Cancel Society, and from 1986 to the present has published over 4000 pages on the subject. This current series is frequently referred to as *Forum II*. In addition, the Machine Cancel Society offers 50 books on the various machines and subjects. An electronic data base of machines and use is kept by the Society. A thirty-six inch bookshelf of three shelves will not hold all this information.

To set out and write an article on how to distinguish all the manufacturers for the past fifty years is therefore a daunting task, and impossible but for the caveat that generalizations must be made.[2] Just as rockets did not simply arise in the Soviet's mind in 1957, neither did cancelling devices and their patents simply pop into the inventors' mind.. Both evolved, with advances building upon earlier advances. No sooner did stamps come to use in England in 1840, that a means of cancelling them was needed. Machines to cancel British mail are found as early as 1857[3]. They were changed over time as mechanical advances and new ideas of how to use them were applied. In the United States, Washington and New York were believed to host machine cancel trials.[4]

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[1] Due to the International Date Line, and the vast size of the USSR, it was October 5, 1957, at the launch site when the satellite was placed into orbit.

[2] The United States Postal Service (USPS) has mandated that postal cancelling parts must be interchangeable, making the task even more difficult. This will be reviewed later starting on page 4059.

[3] Jerry H. Miller, From Hill to Bickerdike: The Experimental and Early Machine Postmarks of England 1857-1901, *Machine Cancel Forum*, pp 3949-3977 (July 2007). This article is on the Machine Cancel Society webpage. Visit www.machinecancel.org

[4] Bernard Biales, An English Marking Device at Washington City in 1866, *Machine Cancel Forum* October 1996 and January 1997 [Hill Pearson]. Robert Payne, Letter Stamping Device in America (1863), *Machine Cancel Forum* July 2000 [McAdams used at New York City]. See too Billings, Payne, Morris, A Primer – US Machine Postal Markings (privately printed 2005) at pages 118, 217-218, 231-235.

In the 100 years that would span the period from the introduction of the first machine cancel in 1857 to the Space Age in 1957, machines can be divided into two categories by process:

1. Machines that require the mail to be manually fed into them one at a time, with the area to be cancelled in a certain position. Frequently the machine requires two people to operate at peak efficiency. One is needed to feed the mail into the machine one-at-a-time, and the other to operate the machine (usually by hand cranking).
2. Machines that have an automatic feed, that is to say a bundle of mail can be loaded into the machine, but the mail must be still faced to that the area to be cancelled is still in a certain position relative to being loaded. (One operator can be used. First the mail is faced and stacked. Then the mail is fed into the machine. At busy offices, several people can face the mail, and then one operator can constantly load stacks of mail into the machine for cancelling).

The post office was interested in speed and labor costs, not mechanical feeding. The later was a means for the former to be used efficiently. At mid-point in our 100 year pre-space age review of machines, we would find a 1904 Post Office grouping of machines into these categories[5] from a labor point of view:

1. **Hand-cranked machines:** Machines powered by a human, either by hand or using a food treadle into which the letters were fed individually, or in small bunches. These were the most labor intensive machines.
2. **Power driven – non-automatic machines:** Electrical power furnished the power to drive these machines. The operator used his two hands to drop the letters, one at a time, right way up into a trough and onto a moving band to carry them to the cancelling part of the machine. The speed of these machines was dictated by the speed of the human feeding them, with a "good" operator able to cancel 5,000 items per hour.
3. **Power driven – automatic machines:** Not only were these machines electrically powered, but also the letters could be pre-faced and stacked. Once loaded onto the hopper, the picking, conveying, cancelling, and re-stacking was automatic. The practical rate was 13,000 to 30,000 pieces per hour (depending on the operator), although certain manufacturers would claim a rate of up to 60,000 pieces per hour. "While these machines looked attractive, it must be remembered that the letters had to be faced and stacked before they could be cancelled – a time consuming manual operation which reduced the efficiency of the mail processing system."[6] (emphasis added).

From a post office stand point, hand driven versus electrical, and non-automatic feed versus automatic feed were important points in leasing machines and deciding where the machines would be assigned. Therefore in studying the machines and classifying their cancellations, it is important to know this information.[7] Mechano-marcophilately is the name of this study.

By 1957, at the start of the Space Age, these three Post Office categories were 100% of the mail cancelling systems in the United States, with but a few trial and experimental trials to speak of. Fifty years later in 2007, these three categories are being replaced and scrapped by advanced systems that do it all. This is the fourth category:

4. **Completely automated system:** Mail is dumped into a large hopper the size of a garage. The system pulls out mail that is too large for it to handle. The rest is faced, then fed into a cancelling system that not only cancels the mail, but scans it. Codes are added for sorting. If the mail cannot be read for bar coding, it is scanned for later bar coding. Bar

[5] Reported by Reg Morris, *Machine Cancel Forum* (1986), pages 1933-34.
[6] Reg Morris, ibid at page 1933.
[7] Sometimes some or all of this information is not discernable by looking at a machine cancellation. Post Office records, census numbers (to distinguish high volume offices from low), patent information, and physical visits to Post Offices are sometimes the only way to discover this information. Knowing this information distinguishes machine cancel collecting from postmark collecting.

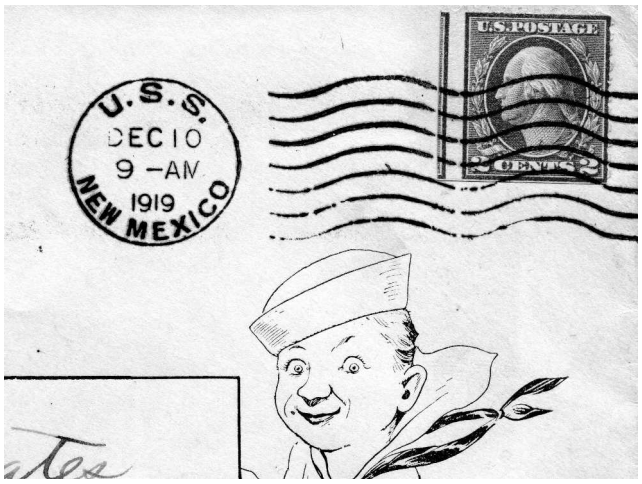
codes are then used to sort the mail by destination. Mail is moved from place to place in the mail plant in carriers of approximately 500 mail pieces. Human hands will seldom touch an individual piece of mail. This is the Advanced Facer Canceller System (AFCS).

Just as there was more than one step from launching a satellite around the earth to orbiting a satellite around Mars, there was more than one step in accomplishing the Advanced Facer Canceller System (AFCS) outlined in #4 above.

In 1957 we would find the following manufacturers of postal cancelling machines active:

Columbia-Ielfield

The Columbia Postal Supply Company was founded by the Ielfield family 1898, and incorporated in 1900. Its General Manager John W. Slack would gain controlling interest in 1914. Fred C. Ielfield left the company in 1915 to form the Standard Mail Marking Machine Co. Later still in 1925, August Ielfield would leave Columbia and form the Ielfield company.[8] Intense competition and law suits would engage the two companies, Columbia and Ielfield until the Great Depression ended the competition. Columbia actually suspended operations in 1933. Ielfield went to work for Columbia in 1945, and a joint company was operated known as Columbia-Ielfield.[9] By 1956, its inventor August Ielfield was dead and its business manager-owner was in retirement. It was not receiving any new business. This company was in its final hours, struggling to compete with the other two giants in the field. The Hanley Postal Supply Company bought all of its assets in 1956. No new machines were installed by Hanley, and they only serviced machines in operation.[10]

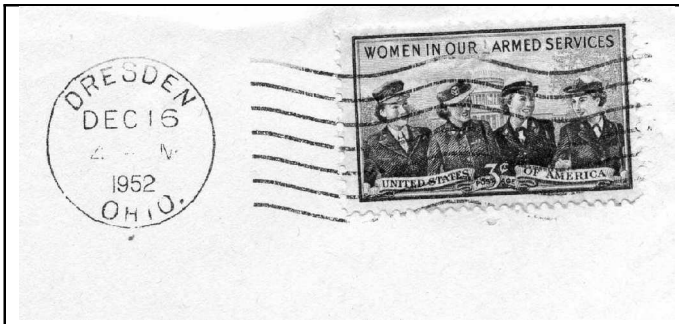


This was indeed a sad state of affairs. Columbia was the first company to install a machine cancel on board a United States warship (pre-1920 uses are known for USS Pittsburgh, USS Mississippi, and USS New Mexico). By the 1930's, their machines were replaced by International and Universal machines. By the Second World War when machines were needed for US APO and NAVY cancels, they had none to provide. Lacking the economic stimulus of the Second World War, they did could not improve their product and enjoy the post-war expansion. Their machine was limited to the smallest towns in America, and as they grew they were sent either International or Universal machines. On mail in 1957 and later, a collector will not find a Columbia-Ielfield (or its earlier sister corporations Columbia or Ielfield) on ship mail, armed forces base mail, or from any city of size. Mail is distinguished by the large letters in the postmark dial, the strong wavy lines (frequently with screw holes showing in the cancellation lines), and close space between the postmark dial and the cancellation.

Examples of Columbia (C), Ielfield (I), and Columbia-Ielfield (C-I) cancels can be found on the following page. Although these machines had interchangeable parts and serviced together by the 1940's[11], they are cataloged separately depending on what they were when the machine was installed.

[8] Fred C. Langford would report this sequence in *XX Killers*, and the story is again summarized by Reg Morris, Robert J Payne, and Timothy B. Holmes in THE COLUMBIA STORY (Machine Cancel Society 2000) Volume 5 at page 52.
[9] Ibid at pages 51-112.
[10] Ibid at pages 113-125.
[11] Ibid at page 98.

Although these Ielfield and Columbia-Ielfield machines will not be found at any launch or sea recovery sites in 1957 or thereafter, they conceivably may be found used in a small town or community near an astro event. Very few Columbians were in use in the 1950's. Nevertheless, examples are shown here:



DRESDEN / DEC 16 / 2 ?? M / 1952 / OHIO.
The most similar in design to an Ielfield or Columbia-Ielfield is an International HD2 Model machine. Note that the Columbia, Ielfield and Columbia-Ielfield cancels have ***no comma after the city.***

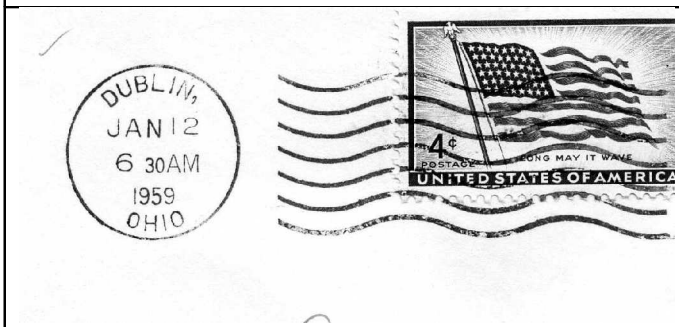
Columbia at left
Used at Dresden, Ohio 1941-1954

Note the close 5 mm spacing between the postmark dial and the wavy line cancel.

Note the large dial, 23-24 mm in diameter.

Note the large amplitude of the wave, from its highest to lowest point.

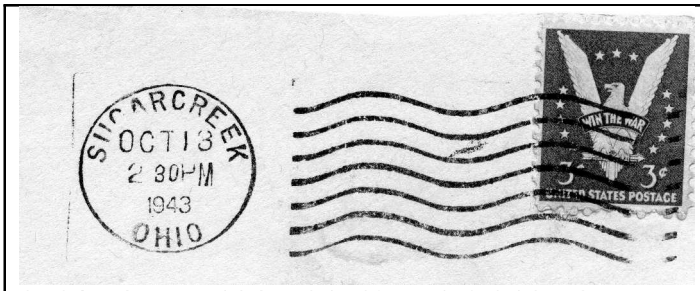
The period after OHIO is meaningless in machine cancel identification, often added in error by all manufacturers to the dials.



DUBLIN, / JAN 12 / 6 30 AM / 1959 / OHIO

International Model HD2 at left for comparison. Used at Dublin, Ohio 1959-1966 without a zip code in the dial.

This machine produces a cancel that is most similar to the Columbians, Ielfields, and Columbian-Ielfields. Note the comma after the town name. Columbia, Ielfield, and Columbia-Ielfield dials do **not** have this punctuation after the town name.



SUGAR CREEK / OCT 13 / 2 30 PM / 1943 / OHIO

Ielfield at left.
Used at Sugarcreek, Ohio 1941-1954

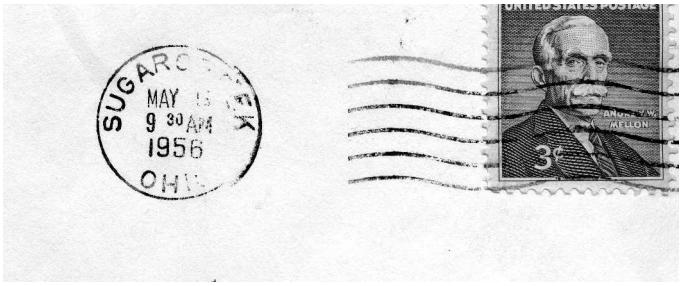
Note the close 5 mm spacing between the postmark dial and the wavy line cancel.

Note the large dial, 23-24 mm in diameter.

Note the large amplitude of the wave, from its highest to lowest point.

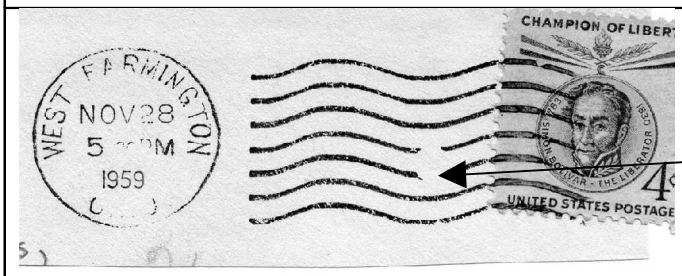
Universal at left for comparison.
Used at Sugarcreek, Ohio 1956-1965 with no zip in dial, and from 1966-on with a new dial showing a zip code.

Note the relatively wide spacing (OVER 10 mm) between the dial and the cancellation. The wide spacing on a Universal tells us this is electric.



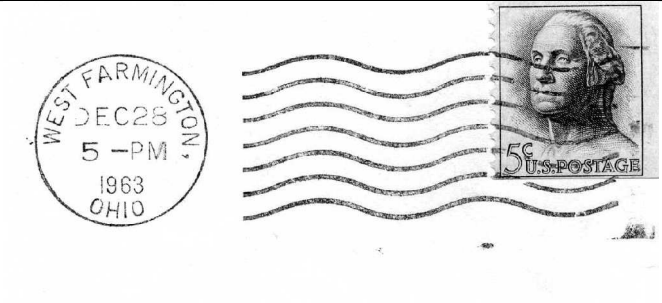
SUGAR CREEK / MAY 1? / 9 30 AM / 1956 / OHIO

The amplitude of the wavy is relatively small.



WEST FARMINGTON / NOV 28 / 5 ?? PM / 1959 / OHIO

Columbia-Ielfield at left
Used at West Farmington, Ohio 1951-1959. The handcut letters in the dial, cut into the soft steel, are apparent in this example. The screw hole in the cancellation is prominent in this example, but many examples are poorly inked or lost in the stamp design. Not all examples of a C-I will be this apparent.



WEST FARMINGTON, / DEC 28 / 5-PM / 1963 / OHIO

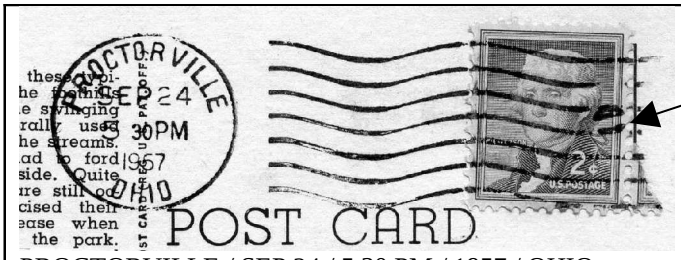
International Model HD2 at left for comparison. Used at West Farmington from 1962-on.

This machine produces a cancel that is most similar to the Columbians, Ielfields, and Columbian-Ielfields.

Note the comma after the town name. C, I, and C-I dials do **not** have this punctuation after the town name.

MAPLEWOOD / OCT 19 / 4 30 PM / 1961 / OHIO

Columbia-Ielfield at left
Used at Maplewood, Ohio. Known use limited to this backstamp dated October 19, 1961. The crudely cut letters and the lack of punctuation after MAPLEWOOD, coupled with the closeness of the dial to the high amplitude wavy cancel identify this as C-I. The screw holes appear to be missing, or are off the envelope at its right.

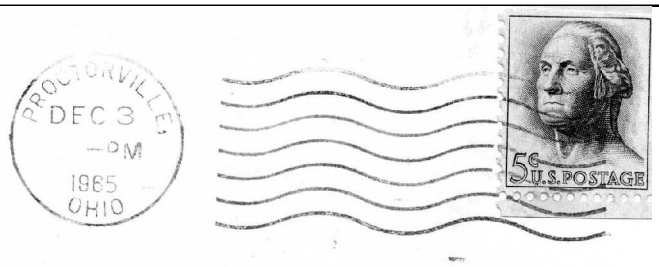


PROCTORVILLE / SEP 24 / 5 30 PM / 1957 / OHIO

Columbia-Ielfield at left
Used at Proctorville, Ohio used 1949-1957. Note the screw in the cancellation, which is easily confused as an ink blot.

Note the tell-tale lack of comma after the city name.

The gap between 1957 and 1960 does not

The date is easily misread as 1967. Indeed, it was misreported in the Machine Cancel Society data bank as such.	indicate a lack of machine at Proctorville, but a lack of reported uses. Machine cancel collectors search to fill these gaps, and report uses found.
 PROCTORVILLE, / DEC 3 / --PM / 1965 / OHIO	**International Model HD2** at left Used at Proctorville, Ohio 1960-1965 without a zip code, and then with a zip code from 1967-1973. Note the comma after the city name.

International (IPSC)

The Post Office Department began using International Postal Supply Company (IPSC) machines in 1888. Its electric Flier was a legend. Marketed in the 1890's, arguably it was the fastest machine cancel for the next sixty years. It was as dependable as it was fast. Its high quality made it more expensive to lease than its cheaper, slower, and less reliable rivals.

For the first half of the Twentieth Century, most International postmark dials had their year at the very bottom of the postmark dial. Some exceptions (and there are always exceptions) include a 1923 Washington, DC, test (which does not concern astrophilatelists) and the previously noted Model HD2.

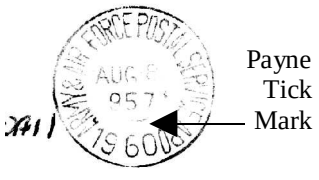
A prominent feature for many International electric models prior to 1960 was a very short line or arc just below the center of the postmark dial. This arc or line is not a stray ink blob, but has been shown to be a constant variety caused by a protruding piece of the dial mechanism.

"The datestamps had the year engraved at the foot of the dater die and the time-and-month pieces of type were held in position by a little latch under the month. The head of the latch often printed as a crescent under the month. We nicknamed it in our study of the IPSC as the "Payne tick mark" after Bob Payne who first drew the constancy of the ink mark to my attention."—Reg Morris[12].

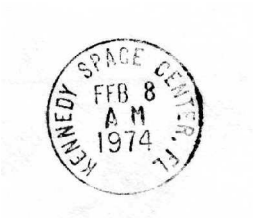
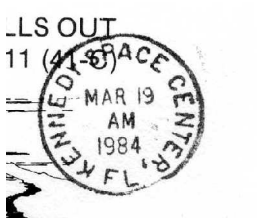
When International went from engraved years (which necessitated that the postmark dials be changed every year), to dials with a hole to allow a year type to be inserted, the "Payne tick mark" disappeared. The year was also moved from the bottom of the dial, to the middle.

As a result, International dials became very similar to Universal dials. Distinguishing International and Universal machine cancels by dial only for the period after 1957 is risky business.

Typical International and Universal Postmark Dials

A	**B**	**C**
 International	 International HD2	 Universal
D	**E**	**F**

[12] Reg Morris, Wanted – An International Model "L" Machine, *Machine Cancel Forum* (April 2004), at page 3363.

		
Universal	International	International

The Payne Tick Mark only helps with the dial in Box A above. For Boxes B-F, more information is needed. To distinguish them further, we will need to look at the cancellation (frequently wavy lines), the distance from the cancellation to the dial, the lettering size of the year slug, and the presence/size of the comma in the dial.

First

On pages 4049-4051, looking for high amplitude wavy lines, we have distinguished the Columbia/Ielfield/Columbia-Ielfield and the International HD2 from other machines. Separating the Columbia/Ielfield/Columbia-Ielfied from the HD2 was relatively simple. If there was a comma after the city name, it was an HD2. If not, it was the Columbia/ Ielfield/Columbia-Ielfield.

There was one exception, the Columbia/Ielfield/Columbia-Ielfield were not used on ship or at military bases after 1941. Finding a cancellation with high amplitude wavy lines after 1941 used on board a ship or at a military base assures you of an International HD2.

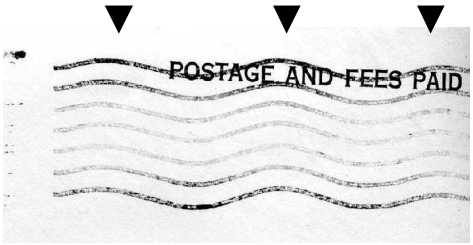
Second

For machine cancels after the Second World War, a year at the very bottom of the dial, with a Payne Tick mark, the cancel is an electric International. Without a Payne Tick mark, it can be an International electric OR a facer-canceller. See page 4055 to sort the facer-cancellers out from the electric Internationals.

Third

For machine cancels after the Second World War, with dials having the year in the middle, one must study several things:

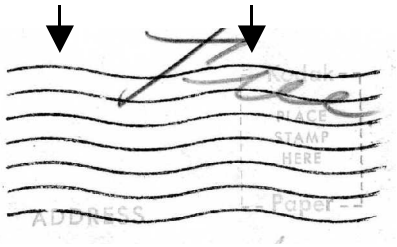
- The cancellation of the electric International machines is produced by steel plates, separated by spacers. Frequently, you will observe 3 complete waves (that is to say the wave goes up, reaches a peak, and goes down). The edge of the steel plates collect and apply the ink onto the envelope. These plates by their nature give under pressure. You may (but not necessarily) see differences in spacing between the wavy lines. See below:



The peaks of the three complete waves are marked with arrows

- The cancellation of the Universal machines, both electric and hand powered, are engraved onto a cylinder. The raised, uncut edges of the cylinder, collect and apply the ink onto the envelope.

These edges are much sturdier, and give a solid equally spaced wavy line. You will usually observe only one or two complete sets of waves. See below:



The peaks of the two complete waves are marked with arrows.
Universal machine cancellations for this period can have 6 or 7 wavy lines,
and either 1 or 2 complete waves.

- Observation of the waves will more often than not distinguish the cancel as being either an International or a Universal. But there are more checks. If there is no comma in the dial, it is usually a Universal . . . but not always. International dials for ships and bases are usually without a comma as well.
- If you observe enough year types for the two machines, you will frequently find the Universal types to be taller than the Internationals.
- Commas when used by Universal tend to be small, almost like periods. International commas can be quite dramatic.

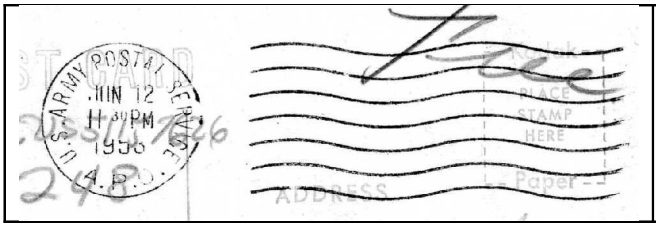
Go back to page 4052 and look over the dials. C and D have very dainty commas, but large year type. E on the other hand has a hefty comma, but with a relatively small year type. F would be impossible to tell without looking at the cancellation. Looking at the commas and year type are helpful checks, after observing the cancellation.

At this point, with your 1957 cancels, you should have separated out any Columbia/Ielfield/Columbia-Ielfield, the International HD2, and International electric. What you have left are the Universals. If you have any post-1957 cancels, you may have facer-cancellers. We will talk about them at the end.

Universal (Pitney-Bowes)

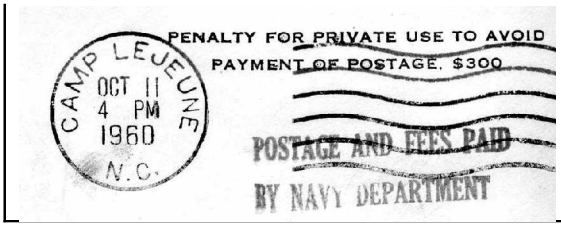
Compared to the rest, Walter Bowes (later of Pitney-Bowes meter fame) started late. In 1909 he notified the Post Office that he would be submitting a canceling machine for trial. A minor modification was made, and by 1910 he was leasing machines to the Post Office.

Just like the International, there are electric and hand driven machines. To distinguish them, you only need to measure the distance from the postmark dial to the cancellation. If the distance is small (5 mm), you have a hand driven Model K. If the distance is large (12 mm), you have an electric version.



U.S. ARMY POSTAL SERVICE
JUN 12 / 11 30 PM / 1953
A.P.O.

Model K hand driven Universal



CAMP LEJEUNE
OCT 11 / 4 PM
1960
N.C.

Electric powered Universal

Even if the cover does not show all of the Universal cancellation, the distance between the postmark dial and the beginning of the cancellation shows instantly if it is electric or hand driven.