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THE ALTERATION OF PARI-MUTUEL TICKETS

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The alteration of pari-mutuel tickets is normally not a prevelant problem; however, when the document examiner does receive such a case, he has the opportunity of studying some interesting aspects in regard to methods of alteration and the challenge to demonstrate these effects effectively. Whether because of the large amounts of money usually involved or the good security on tickets at the race tracks, the alterations seen have been very good and quite caefully prepared. By this is meant, the individuals have thought out their operation, have the proper tools at their disposal, and have practiced using them.

Pari-mutuel tickets are received in roll form, color-coded for the specific dollar amount in the "Win," "Place," and "Show" categories.¹ The rolls of tickets are placed into individual machines, and

¹The information contained in this paper is based upon evidence encountered in the Chicago Police Crime Laboratory. Variations in paper products and methods of printing are possible in other areas.

the center portion printed at the time of sale. Wheels, individually slotted for the insertion of metal dyes and inked from a roll pad, accomplish the printing. The mechanism is so constructed that the horse number is slotted into position from a key on the outside of the machine. A code is printed onto the ticket near its center, the code being different for each race. Winning tickets are paid according to this code and the winning horse number. Therefore, to have a winning ticket, the correct code and horse number must appear on the ticket.

With the above in mind, alterations encountered of the type involving splitting, cutting and fitting will be discussed first. (Fig. 1) The paper upon which pari-mutuel tickets are printed was at one time a three-ply paper. Thus, the papers of two tickets could be split, the number portions cut out of each and the correct number portion inserted into the paper containing the correct code. This ply of paper would then simply be pasted back onto



FIGURE 1

Splitting, cutting, and fitting as methods of altering pari-mutuel tickets.

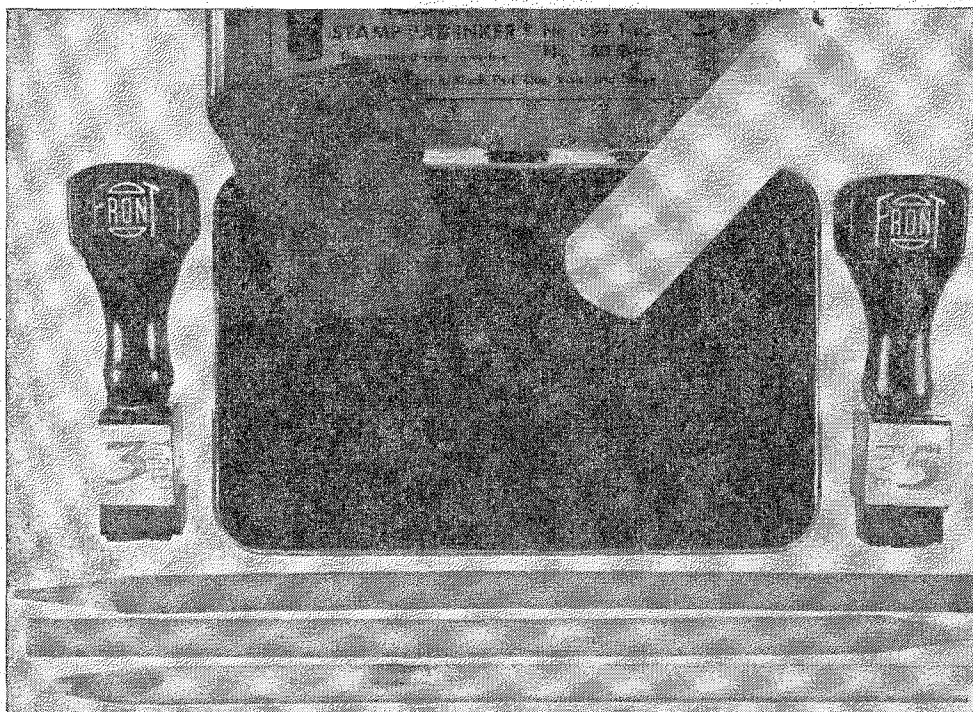


FIGURE 2

Tools used in the removal and replacement of the numeral include an abrasive material, rubber stamps, stamp pad, and colored pencils.

the card. Another similar method would be to cut out the number portions from two tickets while holding them in direct contact with one another, then inserting the correct number portion into the card containing the correct code. Again, two tickets may be split widthwise at the point between the code and the number, then the bottom portion of the one containing the correct number joined to the top portion of the other containing the correct code. The problem involved here would be to split the tickets so that the printing along the lengthwise edges would eventually match. It should be obvious that splitting, cutting, and fitting in are not an easy accomplishment and would require a good deal of practice and dexterity.

Another different method of altering pari-mutuel tickets, wherein a good deal of forethought was given to the problem, involves the application of certain tools (Fig. 2) and a degree of skill. An abrasive material such as an ink eraser or emery paper is used to remove the number portion on the ticket. This process also removes the background color in the surrounding area, revealing the white

paper fibers and sometimes the colored middle ply paper. The winning number is then rubber-stamped into place and the proper background color filled in with a similarly colored wax pencil. (Fig. 3) The design of the individual rubber stamps exactly duplicates that of the original numbers and a stamp pad ink similar in color to that on the ticket is used.

More recently, the paper used for printing pari-mutuel tickets has been reduced to one-ply and has a distinctly rough surface. The one-ply paper practically eliminates the prospects of splitting and makes fitting in and retention of inserted portions more difficult. The rough surface is seen to make erasing more difficult as the ink is able to penetrate further into the fibers. If the ink is erased, the paper is thinned considerably and care must be taken not to penetrate it completely.

In examining altered pari-mutuel tickets, the problem is usually not one of restoration but of determining the method of alteration. In the first three instances cited, restoration would be impossible as the number portion has been wholly removed. Restoration in the last instance might be



FIGURE 3

Removal and replacement of the numeral (only) as a method of altering pari-mutuel tickets.

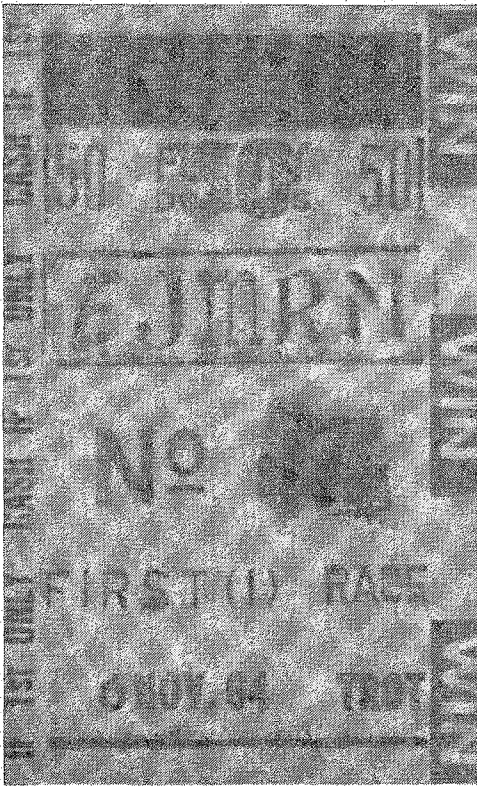


FIGURE 4

Fluorescence under ultra violet light of the background area in contrast to non-fluorescence of the 'colored' area.

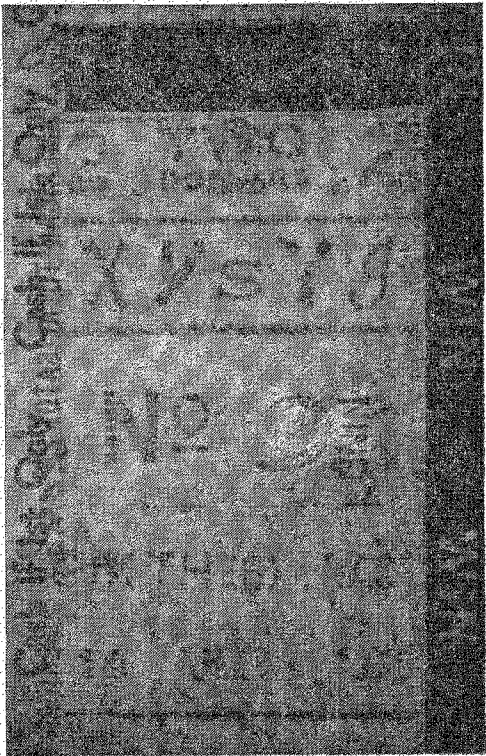


FIGURE 5

Erased area of one-ply paper viewed with transmitted light.

possible depending upon the completeness of erasure.

Detection of the altered portions of the tickets may sometimes be seen visually in good daylight and are usually always apparent under microscopic examination. Since the first three methods involve only splitting, cutting, and fitting-in of certain portions, photographic enlargements should effectively demonstrate the alterations. It may also be possible to show that the background design of a "fit-in" portion does not align properly with the background design of the ticket.

In the last method, as there is the addition of rubber stamp inks and colored wax pencils in the alteration process, a somewhat different and more interesting procedure is followed. Visual observance may not readily show the alteration depending upon how close the fill-in color matches that of the background and also how close the color of the rubber stamp ink matches that of the original ink. However, the disturbance of fibers is usually visible in the erased area under oblique lighting even though the fibers have been matted down as a result of coloring in the background. Fluorescence under ultra violet light is seen to occur in the background area of some tickets due to the presence of certain dyes used in the manufacture of the ink; whereas, fluorescence may not occur in the area where the colored wax pencil is used. (Fig. 4) However, this phenomenon does not occur in all cases. For example, the yellow background area of one

ticket fluoresced under ultra violet light while the area colored by the wax pencil remained unaffected. Other tickets of blue and pink background exhibited no fluorescent properties whatever. Dichroic filters, in some cases, may prove useful in differentiating between the ink used in printing the tickets and a similarly colored rubber stamp ink used in altering the tickets. For example, dichroic filters differentiated the dye in a number stamped with a purple-colored rubber stamp ink from a similarly colored ink on the remainder of the ticket. These filters did not show any differential where a black-colored rubber stamp ink had been used on tickets having a black inking. The thinning of the paper in the erased areas on the rough-surfaced, one-ply tickets becomes particularly prominent when viewed with transmitted light. (Fig 5)

The methods of attacking an alteration problem vary, depending upon the type of evidence and the tools with which it is altered. In many cases, the means used in detection are also those best used for illustration. It is sometimes possible to determine immediately from a critical examination of the evidence what methods will readily yield results, at other times more exhaustive testing is required. It is always preferable to exhaust all visual, microscopic, and photographic means rather than resort to chemicals. Non-destructive methods proved especially useful in the above case where the problem was one of determining the methods of alteration rather than one of restoration.