

above the less urban parts of Ohio and well below most of the other large cities in the state.

Cities with the lowest rates in 1940 generally showed increases in 1950 far greater than cities with the highest rates in 1940. This is believed mainly due to improved

reporting of basic medical information.

The rates in the 12 largest cities of the nation were on the average almost twice the rates of the 12 smallest big cities, that is, cities with populations of 100,000 or more.

Science News Letter, April 14, 1956

#### POLICE SCIENCE

## How Typing Is Disguised

French police scientist warns American colleagues of methods by which criminals alter typing or file down letters on machine to avoid detection.

► POLICE in this country are warned of two methods by which criminals disguise typing or typewriters to avoid detection as the source of threatening letters and other criminal documents.

The warning is published in Chicago in the *Journal of Criminal Law, Criminology and Police Science* (April). It is contributed by Jean Gayet of the staff of the Police Laboratory in Lyon, France.

The first method is very simple. The criminal (whom M. Gayet calls the "malefactor") uses two sheets of paper and one carbon sheet. Between the top sheet and the carbon, he puts a piece of coarse cloth. Then it is the carbon copy that is sent to the victim.

The writing on this copy has a canvas-like appearance which may appear to the police expert as the work of a multigraph or some other duplicator rather than a typewriter. To identify it as carbon, the expert should use a magnifying glass, M. Gayet suggests. If the writing was disguised by use of a cloth, the expert will see a multitude of little colored dots close around each letter.

Do not try to measure the exact height of the letters. This is difficult enough if the typing was done through a fine ribbon.

When done through a coarse cloth, it is completely deceptive. It is possible, however, to determine whether the letter was written with elite or pica type.

It is also hopeless to try to recognize the breaks or recesses in the metal due to use. It is possible to note defects in alignment of letters, whether a particular letter prints too high or too low or too much to the right or the left.

The other method of disguise is done after the criminal letter has been written. The criminal files the keys on his machine so that samples of typing from it will not match the typing in the criminal letter.

Remedy is to examine the machine itself. Notice whether the alterations affect little-used symbols such as %, &, or / as much as such letters as e, i, or o.

If it is not possible to seize the suspected typewriter for examination, get samples of typing some time before the crime as well as since. If the recently made impressions show signs of "wear" that would not be expected in such a short time, that in itself is a good sign that the typewriter has been tampered with and is evidence of guilt.

Science News Letter, April 14, 1956

in determining the success of industries engaged in highly complex and new products.

Dr. Ramo reported to the Society that the challenging nature of these complex scientific and technological systems, as illustrated by guided missile developments, has already meant a meshing of all the sciences. The widespread teaming of physicists with engineers, and of carefully controlled experiments and unusually deep theoretical analyses, applies over the whole spectrum of new technological developments.

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#### AERONAUTICS

## Missiles to Carry Freight

► GUIDED MISSILES may be carrying a portion of the nation's air freight by 1966, Dr. Simon Ramo, executive vice-president of the Ramo-Wooldridge Corporation, Los Angeles, told the American Rocket Society meeting in Princeton, N. J.

In making his prediction, Dr. Ramo said that even the transportation of passengers will be under precise guidance or automatic control from take-off to landing, even though a pilot will still be present.

Dr. Ramo used guided missiles as an illustration of how complex systems engineering is changing the role of the scientist, as well as the nation's entire industrial make-up.

Guided missile developments of today, he stated, are merely the forerunner of a

vast automating of industry, business and transportation. The development of "synthetic" intelligence devices, such as electronic "brains," will have the most major of consequences, peace or war, Dr. Ramo told the Society.

A stumbling block to the march of progress in these directions, Dr. Ramo cautioned, will be the shortage of technically skilled personnel.

Both educational methods and the training of scientists and engineers brought about by complex systems engineering will be changed, he predicted.

The coming decades will be distinguished in industry by the growth of the technical manager, and technical considerations will dominate over more conventional factors