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## TECHNICAL INFORMATION

### Questioned Document Analysis Plates

Catalog Nos. 370H, 371H, 372H, 373H

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#### INTRODUCTION

Document Examination Plates are ideal for direct photography. Fine line and accurate detail permit a more comprehensive analysis of a variety of situations. Viewing is simplified and shadows eliminated since the printed image is on the bottom of each glass plate.

#### NO. 370H TYPE ANGLE PLATE

It is a known fact that every typewriter gains its own individual characteristics due to wear and use. One characteristic that often proves important in the examination of a questioned typewritten document is known as “type slant”. The normal slant of all type is 90° (at right angles) to the baseline of the typewritten sentence—the typeface or block will remain in this alignment until the type bar it is mounted on is bent or forced out of shape. When this



*No. 372H used in examining the slope of sample handwriting.*

occurs, the letter will appear tilted. This tilt is often slight, so extreme care should be exercised in the examination and in the use of the Type Angle Plate. The use of photographic enlargements will aid in determining the exact angle and degree of variation.

### Utilizing The Type Angle Plate

The No. 370H Type Angle Plate (pictured right) contains two pairs of horizontal lines. The upper pair are for use with elite type and the lower for pica type. Both of these pairs of lines will be found near the middle of the plate. To find the degree of variation from the normal, place the glass plate over the letter or word with the horizontal lines parallel to the baseline of the sentence. When the plate is properly positioned, the letter in question should be enclosed in a square formed by the angle lines and the horizontal lines. To be considered a specific angle, the angle line on the plate should pass through or run parallel to the axis of the letter in question. Through use of a photographic enlargement, a conclusion regarding slant characteristics can be made. *Dimensions: 5"W x 7"H x 1/16" thick; Weight: 3.1 oz.*

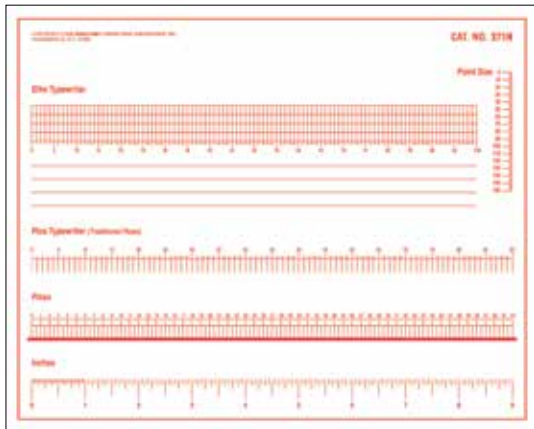


### NO. 371H TYPEWRITER MEASUREMENT PLATE

One of the individual characteristics a typewriter gains as it grows older is its letter alignment. The letters, when typed onto a sheet of paper, are seldom in perfect alignment with the baseline. When this condition is due to the type bars being out of line, it will be observed that the same discrepancy will occur in both the upper and lower case letters. Faults in alignment cannot be observed without the use of an instrument such as No. 371H. The top block and line scale are for use on pica type and the lower block and line scale are used on elite type. *Dimensions: 10"W x 8"H x 1/16" thick; Weight: 7.8 oz.*

### Block Scale

The block scale is placed over a line of typewritten copy to determine which letters are out of alignment. Adjust the scale until every letter is in an individual block—any letters higher or lower than the baseline will be visible. Photo enlargements may be required when misalignment is slight. *NOTE: Both block scales contain four rows each: rows 1 and 3 are for the lower case letters; rows 2 and 4 are for the upper case letters.*



### Line Scale

Use the horizontal line scale, located under each block scale, to determine if any line or words have been added to an original document. Ordinary typewriters have automatic spacing—making it next to impossible to insert a word or series of words without a trace. The same applies to added material because feeding a sheet of paper in a typewriter in the same original position is difficult.

Place the correct type scale for the words in question over the document. Adjust the instrument so the top line of the scale is directly over a baseline of typewritten words—on a line above or below the words suspected of being added. If the scale does not fall on the baseline of the suspected words, the document has been altered.

## 8" Rule Scale

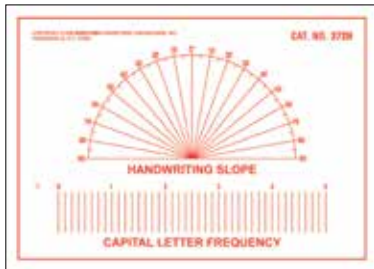
In document examination, the size and distance between the signature and the body of the letter or proportions often arises. This can be determined with the rule located at the lower edge of the plate. The scale may be superimposed over the questionable part of the document and photographed. This would not be possible with an opaque steel rule.

## NO. 372H SLOPE PROTRACTOR & LETTER FREQUENCY PLATE

As the examiner of questioned documents knows, one of the first thoughts of the inexperienced forger is to change the slope of his writing in an effort to disguise it. Therefore, this factor is one of the first steps in the examination process. Use the handwriting slope plate to determine the exact slope of individual letters, words, sentences, or whole paragraphs. *NOTE: Ordinarily, undisguised writing generally slopes from 30°-50° to the right of the vertical—backhand (and/or left-handed) writing tends to slope not more than 30° to the left of the vertical.*

### Utilizing The Handwriting Slope Plate

Place the No. 372H plate over the writing so the horizontal line marked 90° is in perfect alignment with the baseline of writing—note which angle line passes through the axis of the letter. All readings are made from the right or the left of the vertical on the lined marked “0” degrees. The use of photographic enlargements will aid in drawing a conclusion in this phase of the examination.



### Frequency Measurement

Use the frequency measurement plate to determine the letter frequency or the space factor of the handwriting in question. The spacing of writing is greatly influenced by what is known as “movement”. There

are three types of movement: the finger, the hand and forearm or muscular movement. This spacing factor is often overlooked by the inexperienced forger.

#### Utilizing The Frequency Measurement Plate

Place the No. 372H plate over the writing so the baseline is perpendicular to the lines on the scale. Observe the results and then place it on the standard or example. Any variation that may be present between the two can be photographed.

Another important use of the frequency measurement is determining the width-breadth of individual letters. The plate is placed on the writing as before—in this case, the use of photographic enlargement will be helpful.

In making up an analysis chart on a questioned document, the examiner must state the frequency of deviations from the normal of a certain letter. With the No. 372H plate placed on a whole line of writing, the number of times the deviation occurs in that sentence can be counted. *Dimensions: 7"W x 5"H x 1/16" thick; Weight: 3.1 oz.*

### **NO. 373H HANDWRITING LETTER SLANT & COMPARISON PLATE**

#### ***Letter Slant***

The letter slant plate is used to determine the slope of individual letters, groups of letters, words or sentences. This plate has been designed especially for better visibility and to permit more accuracy than is possible with a protractor.

There are three scales on the upper portion of the No. 373H plate. The first two scales, #1 and #2, are used to determine the clockwise (right) slant angle of handwriting; #1 is graduated from 0°-35° and #2 from 35°-64°. The third scale, #3, is used to determine the counterclockwise (left) slant angle of handwriting and is graduated from 0°-35°.

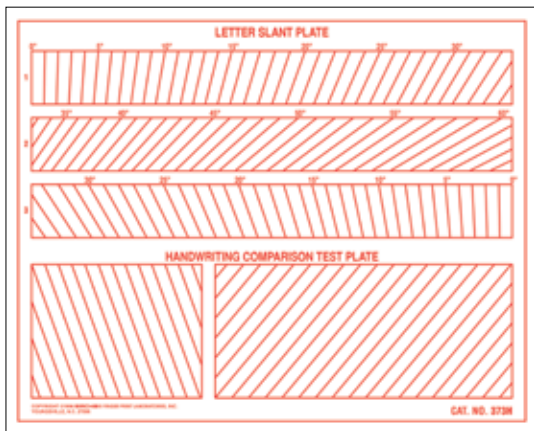
### Utilizing The Letter Slant Plate

Place the No. 373H plate over the document until the scale is in place on top of the line or letter to be examined. The lower of the horizontal lines that enclose the scale is superimposed on the baseline of the word or sentence in question. The scale is then manipulated until a degree line is found that runs parallel or through the axis of the letter in question—this is the angle of the letter.

This plate is designed to eliminate angular lines from being too close to the letter being examined as is found in a protractor type of slant plate. Visibility is one of the foremost advantages of this plate over the standard protractor. The No. 373H permits the examiner to study the letter in question under each individual degree line without interference of the other degree lines that originate at a common apex.

### ***Handwriting Comparison Test Plate***

This plate is found directly below the letter slant plate and helps determine the slope or slant of a paragraph or group of words or sentences—it is used for general comparisons only. Conclusions drawn from the slant test are formed on an average basis.



The forger often makes a radical change in his forged writing in an effort to conceal his identity. If the examiner finds that the example (or submitted writing) and the questioned writing do not vary more than  $10^{\circ}$ - $15^{\circ}$  and this variation remains constant, then it is highly probable that the papers were written by different writers. A forger would not alter the angle of slant a mere  $10^{\circ}$ , but would try to make the alteration as radical as possible.

#### Utilizing The Handwriting Comparison Test Plate

Place the No. 373H plate over the standard or example handwriting and photograph it again. An enlargement of both, placed side-by-side, will show the average deviation in the slant of the writing. Another way of using the plate is to place it over the actual writings, placed side-by-side, and make the comparisons directly. Sometimes, direct comparison is prohibited by wide margins, serrations and torn samples.

There are two sections of the Handwriting Comparison Test Plate. The section to the right is used to determine the clockwise (right) slant angle of handwriting and the section to the left is used to determine the counterclockwise (left) slant angle. *Dimensions: 10"W x 8"H x 1/16" thick; Weight: 7.8 oz.*

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