

## The Identification of Hand-Printed Musical Scores

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**REFERENCE:** Calvert, J. R., "The Identification of Hand-Printed Musical Scores," *Journal of Forensic Sciences*, JFSCA, Vol. 25, No. 3, July 1980, pp. 619-623.

**ABSTRACT:** Music is communicated in written form by a system of symbols called notation. As in handwriting, there are various degrees of expertise in executing hand-produced musical scores. The identification of an initial hand-produced musical score is usually less complicated than identifying the work of a notator. Principles and procedures for examining and comparing a musical score are the same as those employed in making a hand-printing identification. Specific aspects of notation are discussed and applied to the identification of a musical score.

**KEY WORDS:** questioned documents, handwriting, music

A system of symbols used by a number of people to communicate with one another constitutes a language. Considering this, music may be called a language and, as music knows no boundaries, it may be the only truly universal language. Music is communicated in written form by a system of symbols called notation. The use of notation may result in a musical score, as a novel may be constructed with the use of an alphabet.

Music is recorded with pen or pencil, usually on musical score paper. After making a rough draft, the composer will either make a better copy himself or enlist the services of a notator. A notator is to the composer what the draftsman is to the engineer, or the typist to the author. The notator then prepares a copy of the new musical score for mechanical reproduction. The publisher receives the musical work and reproduces it mechanically for general distribution.

It is my contention that, like any written language, hand-produced musical scores, both the initial and the notator's work, can be examined and compared and an identification made as to who authored the score.

Identification of the initial work of a composer, instrumentalist, orchestrator, or arranger is usually less complicated than identifying the work of a notator. The composer is generally less accomplished at noting his work on paper than is the trained and practiced notator, whose goals are legibility and rapidity. The notator, like a draftsman, has been trained and practices his art frequently. The notator is more conscious of the "copybook form" and usually tries to conform to this method (make a copy closer to this form). As in hand-printing, personal characteristics are developed. Identification of the executor of the work can be made because of these particular characteristics.

The principles used in making a musical score examination and comparison are the same as those employed in making a hand-printing examination and comparison. Original questioned documents are needed. Ample, original, contemporary, collected, known exemplars have to be obtained. If more than one questioned document is presented, a careful examina-

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tion should be made of the questioned material to determine if it was produced by one person. The same procedures used in a hand-printing examination should be applied here. Once this has been completed, the comparison can be made between the questioned and the known exemplars.

In the course of my work with musical scores, I have found evidence of individual design in certain notes and symbols. The treble and bass clefs are generally found in every piece of music. Even if the work was executed by an accomplished notator, these clefs are usually most stylized and are good indicators of the author (Fig. 1).

Individual notes should then be examined. Eighth, 16th, and 32nd notes tend to be more stylized than other notes because of the attached flags. When notes are examined, beginning and ending strokes, pressure, and closings should be considered. Attention should be given to form. Notes, excepting the whole note, should be egg-shaped and should slant up to the right slightly. The placement of the stem and how it connects to the note are also important in the examination of written music. Ideally the stem should meet the note-head precisely. The stems should always start at the note-head and be placed on the right side for upward stems and on the left for downward stems (Fig. 2).



FIG. 1—Treble and bass clefs. Column 1 was prepared by a professional notator, Column 2 by a composer, Column 3 by a beginning student of notation, and Column 4 by an advanced student.

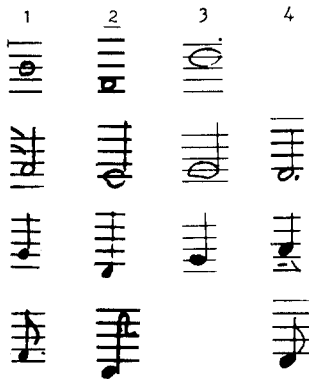


FIG. 2—Whole, half, quarter, and eighth notes. Column 1 was prepared by a professional notator, Column 2 by a composer, Column 3 by a beginning student of notation, and Column 4 by an advanced student.

Consideration must be given to flats, sharps, and naturals because of their frequent occurrence in music. Flats are almost always executed freehand, and personal characteristics are more predominant in freehand work. The size and placement of flats are important. Sharps and naturals, if done by a notator, are usually made with the assistance of a straightedge. Here, crossing strokes, placement, and size should be considered (Fig. 3).

Quarter, eighth, 16th, and 32nd rests are usually done freehand and exemplify personal characteristics that can be used for identification. Their formation, placement on the staff, and size must be considered.

Holds and slurs are often found in musical scores; here again, habitual movements are evident. Shape, arc formation, and placement should be noted. The position of the period in the hold sign can be significant when the examiner is working with these items (Fig. 4).

Most musical scores contain time signatures and lettering, or worded instructions. Special attention should be given to their examination if a notator is believed to have authored the questioned material. The major concern here is that he may have used a template or lettering guide, in which case the personal characteristics would be missing. From my study I have found that notators are akin to the penmen of old, or the draftsmen of today, and prefer to do their lettering freehand. In such a case, a very highly stylized form of printing will be used (Fig. 5).

The total work, or score, should be examined as a hand-printed letter. Here, overall style, writing speed, spacing, shading, placement, size, slant, and total appearance require scrutiny. The notator is very aware of spacing. The composer or arranger may tend to be more conscious of the content of the score, and thus neglect spacing. Shading is important, just as in handwriting, because it is usually accomplished with the same type of stroke. An individual develops shading methods that he uses consistently.

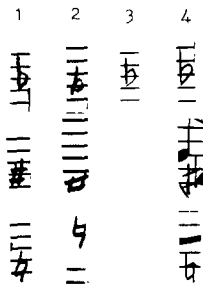


FIG. 3—Flats, sharps, and naturals. Column 1 was prepared by a professional notator, Column 2 by a composer, Column 3 by a beginning student of notation, and Column 4 by an advanced student.

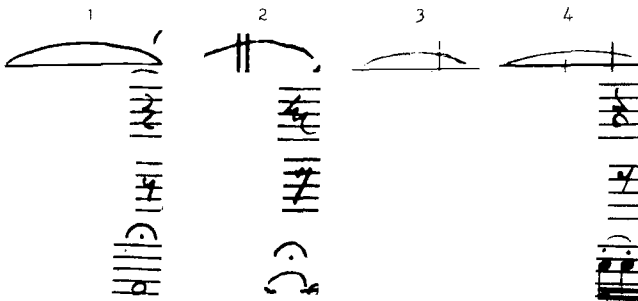


FIG. 4—Phrase marks and rests. Column 1 was prepared by a professional notator, Column 2 by a composer, Column 3 by a beginning student of notation, and Column 4 by an advanced student.

The placement of notes on the staff is important to the musician and to the document examiner. Whether the notes touch the line or are slightly above or below the line can indicate a personal writing habit. The dot placement after a note is another characteristic developed by individuals. Ideally notes should slant to the right, stems should be perpendicular, and bar rests should be horizontal. Any deviation from this aids in the identification of hand-produced scores (Fig. 6).

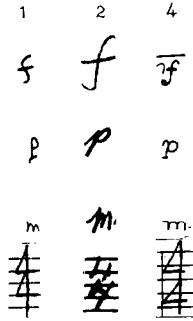


FIG. 5—Lettering and time signatures. Column 1 was prepared by a professional notator, Column 2 by a composer, and Column 4 by an advanced student of notation.



FIG. 6—Overall scores; (upper left) prepared by a professional notator [1]; (upper right) prepared by a composer [2]; (lower left) prepared by a beginning student of notation; and (lower right) prepared by an advanced student of notation.

After observing the overall score, the examiner should have an idea of whether or not the individual is familiar with notation. He should know if the work was done freehand or if templates or letter guides were employed. Attention may then be focused on specific items. I believe that if one has original questioned material and ample known exemplars, and compares the two as he would in any document case, an identification can be made.

### References

- [1] Carter, W. L., *Eric*, Music Factory, Park Forest, Ill., 1977.
- [2] Carter, W. L., *Flump*, Music Factory, Park Forest, Ill., 1978.

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