OBSTACLES TO THE ATTAINMENT OF SPEED IN SHORTHAND

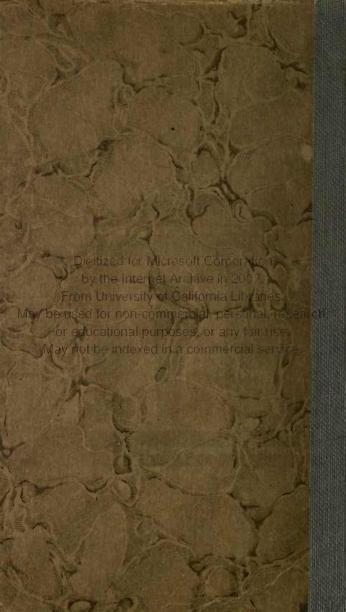


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OBSTACLES TO THE ATTAINMENT OF SPEED IN SHORTHAND

WITH SOME PLANS FOR OVERCOMING THEM

MENTAL OBSTACLES

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(A paper read before the Business Section of the National Education Association.)

MANUAL OBSTACLES

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(A paper read before the Eastern Gregg
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IN order to determine what are the obstacles to the attainment of high speed, it is first of all necessary to consider carefully the factors entering into the problem of writing shorthand rapidly and accurately. There are very many elements involved, some of which I shall bring out in the discussion of obstacles.

Some of the obstacles may be summarized briefly as:

- 1. Indecision.
- 2. Lack of concentration.
- 3. Nervousness and excitability.
- 4. Lack of poise..
- 5. Mind wandering.

- 6. Sluggish mental habits.
- 7. Slowness of perception.
- 8. Inability to grasp the meaning of the English language.
 - 9. Unfamiliar words.
- 10. Lack of confidence in ability to read the notes.
 - 11. Poor memory.
- 12. Consciousness of imperfect execution.
- 13. Unfamiliarity with the fundamental word-building principles of the system.
- 14. Imperfect co-ordination between mental and physical operations.
- 15. And, certainly, most serious of all, the lack of logical construction of the shorthand system written.

There are many obstacles which are, properly speaking, physical rather than mental, but which seriously interfere with and hamper the mental operations, such, for example, as poor hearing, poor sight, etc.

There are two distinct phases in the learning of shorthand - the learning stage and the expert stage. As teachers, we are concerned more particularly with the learning stage, for if the learning stage of the student's shorthand experience is properly taken care of, the obstacles thrown in the way of the acquisition of high speed will for the most part disappear.

In the time allotted me I can do no more than discuss briefly the most common of these obstacles that interfere with swift and accurate shorthand writing, and offer some suggestions which I hope will assist in overcoming them.

MENTAL OBSTACLES

Indecision is a most common obstacle and it arises from two sources: First, from the difficulties of phonographic construction. Difficulties which are inherent in the system of shorthand writing are serious, but much can be done to overcome them by the teacher in simplifying his instruction and by proper drill. Second, by certain mental habits of the writer due particularly to an incomplete mastery of the word-building principles and insufficient practice in applying them. The remedy for this is obvious—a thorough and deliberate review of the principles combined with plenty of drill in using the word-building principles.

Many students of shorthand, and particularly the younger ones, are incapable of concentration for more than a brief period of time. The faculty of concentration is susceptible of high cultivation. Exercises in concentration should form a part of the instruction in shorthand writing from the beginning. Without concentration, progress in learning is retarded and the development of high speed will be

impossible. Concentration may be enforced by the nature of the instruction by making it emphasize attention and by forcing the attention of those who are inattentive. An excellent plan to accomplish this is to give definite drills which will cultivate the power of holding a large number of words in the mind while the writing is suspended. Dictate a sentence or a part of a sentence and ask the students not to begin writing until the entire sentence or the part decided upon has been dictated. At first only short sentences or parts of sentences should be given, but as the power to hold the words in mind increases, the length of the exercises may be increased. It is possible to increase the ability in this direction to an amazing degree. Another exercise that is effective in developing concentration is the reading of new shorthand plates — the subject matter of which is unfamiliar to the reader. He will thus

be forced to keep his mind concentrated on the task and the power to hold himself to the work will be vastly increased. Another difficulty in connection with concentration I have observed is in the disturbance even slow dictation occasions in the minds of many students. Dictation is something new to them and they do not react to it readily. Those who have studied telegraphy, I have noticed, take to dictation much more readily because they are used to taking matter from dictation.

Nervousness, which is a serious obstacle to speed and accuracy, is often the result of mental habits and also of going over the shorthand principles too hurriedly. The nervous person nearly always lacks poise. Improvements can be effected in such cases by a deliberate review of the principles, giving the dictation very slowly in order that the student will have ample opportunity to do his work correctly. As soon as his

confidence is restored the nervousness will disappear.

Until the writer reaches the stage when a majority of words are written subconsciously, the mental obstacle of mind-wandering does not often become manifest. Its presence is a serious difficulty in the way of speed development. Mind-wandering is an obstacle which can be overcome only by the application of concentration on the part of the writer himself. The teacher can assist by the selection of the matter he is using for dictation, making it more difficult and requiring the constant attention on the part of the writer.

Except in rare instances, the students we get in the schools have done little that quickens perception, that prevents sluggish mental habits. Shorthand re-1 quires quick thinking, quick decision and action. In most of our studies there is time for deliberate thinking and in most of them we have little coordination of mental alertness and manual readiness. Shorthand is a superior study in this respect. The study of it and the acquirement of practical skill in it are worth the effort required for the mental discipline they give in this direction. Any exercise that requires quick co-ordination of mental and manual effort is effective. That is why athletic games, like tennis, football, and basketball, are valuable in developing these qualities.

We are all familiar with the obstacle of unfamiliarity with the English language. A great deal of the student's effort in shorthand writing is absorbed in trying to understand the meaning of what is being dictated. When he encounters an unfamiliar word he is confronted with two difficulties — first of understanding the sounds in it; and second, of selecting the correct phonographic form. Of course, the obvious remedy for this condition is

the constant study of English until the student's vocabulary has been widened. Every strange word should become the subject of special study. The variety of matter used in dictation in the advanced stages also becomes an important aid in developing knowledge of the language as well as to increase the writer's vocabulary and thus lessen the number of words which cause hesitation by their unfamiliarity.

The foregoing obstacles deal with things that are commonly not within the scope of the shorthand teacher's work, yet much can be done by shorthand teachers to improve the situation.

TECHNICAL OBSTACLES

We now come to certain technical obstacles that demand the earnest application of the teacher. First of these is the consciousness of imperfect execution. The moment a writer writes a

form that is so imperfectly executed as to arrest his attention, his mental equilibrium is disturbed and his concentration momentarily destroyed. The result is a decided reduction in the speed of writing, and we encounter what reporters, as well as telegraphers, call a "break." In this state of mind the writer may lose several words. And, contrary to the customary impression, these disturbances are not confined strictly to those who have advanced to the expert stage. They occur with the beginner even more frequently. To remedy these difficulties, we must get at the cause for the imperfect execution. It may be due either to poor elementary training in penmanship or it may be due entirely to the executional difficulties of the system itself. If the shorthand characters can be executed with the freedom and ease of longhand writing, it is obvious that the obstacle of poor execution is reduced to the

minimum. It is the same in shorthand. We all know that the Gregg student can acquire a high speed in a shorter time than can the writer of a non-script system. The angular, geometric systems do not lend themselves readily to rapid and accurate execution. When written rapidly the forms become distorted because they are not constructed to take into account natural tendencies of the hand.

Springing out of the difficulty that arises from a consciousness of imperfect execution of the characters, there comes a lack of confidence in the ability to read what has been written. The writer who lacks confidence in his ability to read his notes can never make a rapid or accurate writer until this obstacle is overcome. The obvious corrective for this condition is plenty of reading practice, both of engraved shorthand to emphasize the correct form, and of the writer's own

notes to familiarize him with the deviations from correct form. A special study should be made of words likely to clash, the difficulties of execution analyzed, executional facility developed by practice. This should be supplemented by drills in penmanship to improve the style of writing.

The next obstacle in point of seriousness, perhaps, is that of unfamiliarity with the word-building principles. Of course, this is present with students of all systems of shorthand, and the only corrective is a study of the principles until the fundamental word-building principles are like A, B, C. The simpler the system, of course, the more quickly this may be accomplished with certainty. A system which has but few rules and no exceptions naturally is at a tremendous advantage over one which is complex and full of exceptions. The student of Gregg Shorthand will be at once struck with the fact that a great

majority of words are written from the alphabet. This being so, the student begins to use his shorthand from the beginning, and familiarity breeds skill.

Unfamiliarity with the word-building principles often arises from variability of form. A system of shorthand writing which makes it possible for a word to be written in several different ways presents obstacles in learning that are insuperable to many students. Automatism is something earnestly to be desired in shorthand writing, and the more quickly it can be acquired, the more rapid will be the advance toward high speed. Automatism is practically impossible where a writer must constantly struggle with the selection from a number of possible forms of the particular form that best suits the purpose. However desirable variety in words may be in writing English to avoid monotony of expression, simplicity and uniformity of word-

forms are the things most desired in shorthand writing. Hence it is important that the writer standardize his forms as early as possible. Words should always be written in the same way, for wherever a change is made hesitation occurs.

The lack of ability to co-ordinate mental and physical operations is a common problem in the teaching of shorthand. The ability to co-ordinate mental and physical effort is a rare gift. Some students seem to possess it naturally, and no matter how complex the word forms, they display an astonishing facility almost from the start. But with the great majority of students the growth of skill in this direction is acquired in almost exact proportion to the degree of complexity of the shorthand. A system which is simple in structure, in which there are few if any exceptions to rules, in which there is practically but one way of

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writing a word, is a vital aid in developing co-ordination of mental and manual effort.

WRITING OF SHORTHAND COMPLEX OPERATION

The most common and the most serious obstacle in the way of gaining facility in writing is the complexity of the shorthand system itself. In order that this may be appreciated, let us analyze some of the mental processes of the shorthand writer in writing shorthand. Mr. Rupert P. SoRelle, in his monograph, "The Educational and Practical Value of the Study of Shorthand," gives them very tersely as follows:

"First, there is the hearing and the comprehension of the words and the grasping of the thought of the speaker; second, the translation of these words into the elementary sounds (I believe we commonly think of words in their

printed or written form); third, the selection of the shorthand material from which they are to be constructed into tangible form; fourth, the transferring of these impressions to the fingers; fifth, the manual execution of the forms. Here are five distinct processes through which each word must be put in the smallest fraction of a second."

Thus it will be seen that at best the writing of shorthand rapidly is a rather complex operation. And, it may be remarked, the processes referred to are inseparable from all systems of shorthand. Some of them, it is true, are much more highly complex with certain methods of writing than with others. To illustrate this point, I should like to direct your attention for a moment to the phase of writing mentioned, "the selection of the shorthand material from which the words are to be constructed." It is the effort to make

this selection that presents one of the most difficult problems in the teaching of shorthand. It may be stated as axiomatic that the mental facility of writing shorthand is in exact proportion to the simplicity of the phonographic material.

For example: In one form of short-hand which is, perhaps, known to most of those present, the vowels are written, if at all, after the complete consonant outline has been determined upon and placed upon paper. This means that the learner must first analyze his work for consonants, then re-analyze for vowels — and particularly the important or accented vowel, in order that the outline may be placed in its proper position with regard to the line of writing.

Let me trace the mental processes necessary in constructing a word by this method. The word is first heard; the sounds are analyzed phonographically; next the consonants are determined; then a selection is made from perhaps two or three ways of writing each of the consonants in the word; then a re-analysis is made to determine the vowel sounds and to select the accented vowel; when all this has been done the position of the word is then decided. Before the position of the word can be fully determined, however, it is necessary for the writer to recall whether the first consonant stroke in the word is a horizontal, an oblique, or a vertical character. All these processes must be completed before the actual writing of the word begins. If it is then concluded that certain vowels must be inserted to add to the legibility of the word form, the writer must decide what these vowels are, and by means of dots and dashes place them in their proper position on the consonants. As each consonant stroke has three positions upon it, and as each word must be placed in its proper position, the mental processes necessary in the construction of any word are increased to a very high degree. The difficulty is still further increased by the fact that the sounds are thus written out of their accustomed order. Of course, as familiarity with words increases and the writer builds up a shorthand vocabulary, recalling the forms of the frequently recurring words becomes less and less difficult. Memory comes to his aid and he can recall the form of the word without conscious analysis. But whenever it is necessary to write a word by analysis - and this is the way in which all words are written by the beginner — the mental processes mentioned must be put into operation. The shorthand writer never reaches the point in his speed where the phonographic outlines of all words are familiar to him. The new word always crops up at the unexpected moment to throw the writer out of equilibrium the degree of loss of equilibrium depending entirely upon his facility in handling the word-building principles of the system he writes.

HOW TO ELIMINATE HESITATION

Hence it is obvious that to eliminate the most frequent source of hesitation in writing — the great obstacle to speed as well as accuracy — the number of mental processes must be reduced to a minimum, and these processes must be made automatic as soon as possible. The essentials of the system must be carefully segregated from the nonessentials, and the fine points for the amusement of the theorist, and those who are specially gifted mentally and manually. This is a function of the teacher.

In the foregoing I have mentioned only some of the obstacles in the way of rapid writing. It is clear, however, Attainment of Speed in Shorthand 23

that many of these obstacles will be presented in reading shorthand, but there is not enough time at my disposal to discuss these features.

In closing let me emphasize the point that in order to remove many of the obstacles mentioned, the teacher must simplify his methods of teaching. He must analyze the difficulties in individual cases, and work out a plan of prevention as well as of elimination of difficulties already discovered. In this, experience and constant study of his profession will come to his aid.

THE MANUAL OBSTACLES TO THE ATTAINMENT OF SPEED IN SHORTHAND

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CINCE the two great factors of speed In shorthand are mental alertness and manual dexterity, each of these elements must be cultivated to a high degree before one can become a rapid writer. But in the effort to attain speed, all aspirants are not beset by the same natural difficulties. Some writers think rapidly enough, but lack the necessary co-ordination of mind and muscle, and therefore are clumsy and slowhanded. Others, again, possess manual agility, but are slow thinkers, and speed is missed while "the eager hand waits upon the lagging mind." With another group, thought leaps from active brain to nimble hand and

is transferred to paper with lightning swiftness. These are the kings of the craft. There are still others—and may their tribe decrease!—sluggish in both mind and hand. Slowness, however, either manual or mental, may often be due rather to lack of proper training than to inherent inability.

In dealing with this phase of the subject, we are confronted, not by a few glaring faults, but by a considerable number of apparently small ones. To a person who has given no thought to the subject, some of these may seem so trivial as to be unworthy of notice. But when we consider that the reporter makes something like two hundred strokes of the pen in every minute of note-taking, and that one or several of these little faults may lurk in every line to hinder speed, no obstacle is too insignificant to demand attention.

A writer generally does not realize, does not even suspect, that he has Attainment of Speed in Shorthand 29

these faults, and may wonder why he cannot attain greater speed. His errors have to be pointed out to him by a teacher or a practiced writer who observes him at work.

THE IMPORTANCE OF CORRECT POSITION

It might seem almost too obvious for discussion that an incorrect position of the body at the desk or table is a hindrance to rapid writing. Yet students have often to be reminded not to loll back in the seat while taking dictation; not to sit hunched up; not to throw the left arm over the back of the chair, or not to rest the head in the left hand. The shorthand writer should sit erect, though easily and naturally, not stiffly, with both feet firmly on the floor. He should sit squarely in front of the table; the arms should rest on the table, but not with equal weight.

One of the most common faults common because generally unsuspected - is the habit of resting the weight of the body largely on the right forearm. Pinned down by this weight, a free movement of the arm, and consequently of the hand, is impossible, and without freedom of movement there can be no speed. Struggling against this impediment, the hand soon becomes tired.

In order to write rapidly, all weight must be taken off the right arm. The body should be supported entirely by the left arm, the right arm and hand resting on the table as lightly as possible, with nothing to obstruct the freedom of movement.

A number of evils result from a faulty position of the hand. Often the wrist is allowed to rest on the edge of the table; sometimes the hand seems in imminent danger of falling off. The entire hand and arm are tense and

rigid. The hand, seemingly tied in a knot, is turned so that it rests heavily on the side or outer edge of the palm, with the wrist almost vertical, instead of flat or horizontal.

Resting the wrist on the edge of the table tends to benumb the hand and arm. With the hand in this position, and with the fingers cramped, a free, gliding movement is impossible. Moreover, such a position quickly tires the muscles, and thus prevents the best work.

Such a cramped, unnatural position of the hand is both cause and effect of writing solely with a finger movement. Using a finger movement alone is almost certain to result in an incorrect position of the hand, and, conversely, with such a position of the hand, no other movement is possible. With an exclusive finger movement, the writing is inevitably laborious, cramped, jerky, and consequently slow.

When speed is attempted, the result is sprawling, misshapen, illegible notes. The hand's journey across the page is painful to see. The hand remains stationary while a few characters are written, and when the fingers have stretched as far as they can, the hand is lifted entirely off the paper and jerked forward, or is dragged along to a new resting place, where the same operation is repeated. With such a succession of jerks, jarring the hand and interrupting the continuity of movement, speedy writing is absolutely out of the question.

EASY ARM MOVEMENT

Anything like speed in shorthand can never be attained without the acquirement of a free, smooth, continuous, gliding motion. And a long step in this direction is the cultivation of the muscular or free-arm movement. This movement is universally recog-

nized as the only proper one in longhand writing, and both reason and experience prove it to be equally efficacious in the writing of a shorthand that is based upon longhand principles.

But in cultivating the muscular movement it is a mistake to suppose that we are to discard entirely the use of the fingers as writing agents. The danger lies in making them the sole agents. David Wolfe Brown says: "It should not be forgotten that those nimble little instruments, the fingers, so highly valued in every other manual art because of their adaptation to quick and delicate movements, can serve as important adjuncts (I do not claim that they should be the sole machinery) in symmetrical and rapid shorthand writing." Undoubtedly better results may be obtained by a judicious combination of the muscular and finger movements - with the muscular movement the predominating one,

however — than is possible with either method alone. In conjunction with these a lateral movement of the wrist may be used to advantage. Co-ordinating these three movements gives the hand marvelous flexibility.

A faulty habit of many writers is the practice of gripping the pen too tightly. This produces a tenseness and stiffness of the entire hand and arm. The movement of the hand is jerky, spasmodic. The fingers are rigid, and their help in the formation of characters is lost. The excessive strain wearies the muscles. The pen should be held lightly—with just enough pressure to control it—and the muscles should be relaxed. Only in this way is it possible to gain the free, flowing movement so necessary to speed in Gregg Shorthand.

A common impediment to speed is the resting of the hand too heavily on the paper. This is an inevitable ac-

companiment of the sole use of the finger movement, in which the hand rests on the ball or the outer edge of the palm. It is often, also, the result of a too tight gripping of the pen. Sometimes this fault is due to, or is accentuated by, the use of a stiff pen or a hard pencil, which requires undue pressure in order to register. Some writers habitually bear down on the writing instrument and make heavier outlines than necessary, with a resultant loss of speed. Either a soft, flexible pen, with a fine point, or a moderately soft pencil, should be used, and the pressure of the hand on the paper should be as light as possible.

Many stenographers make the mistake of writing their notes too large. This not only consumes unnecessary time in the writing of the individual outlines, but entails a further loss of time in compelling a more frequent passing from line to line and from page to page. A similar loss of time is occasioned by writing the outlines too far apart. A distinct gain in speed is often found to follow the cultivation of a reasonably small and compact style of writing.

PENMANSHIP THE FOUNDATION OF EXECUTIONAL SKILL

A habit common to a large number of experienced writers is that of pausing unnecessarily at the points of angles, or when the direction of the stroke is changed. This is generally due to making the angle too sharp and precise. On this subject I quote Mr. John R. Gregg, in the Gregg Writer:

"Some time ago in this magazine, when speaking of the notes of a stenographer who complained that he found it impossible to get up speed, we said: 'The notes showed wonderful exactness of form, but the angles were so positive that it was evident that an absolute pause had taken place after each of them. Precision is a good thing, especially when learning the principles, but it can be carried too far in the case of rapid note-taking and thus prove a detriment to the acquirement of high speed. When the writer of shorthand has attained sufficient command over his hand to make the outlines rapidly and yet retain proportion of form, he should aim to acquire skill in turning the corners, so to speak — in other words, round off the angles. This is a point worthy of thought, experiment, and practice on the part of the writer who aims at becoming an expert reporter."

It seems incredible that more than fifty per cent of the time spent by the average writer in note-taking is lost between outlines — during penlifts. Yet that is what some shorthand experts claim. David Wolfe Brown says: "It

is doubtless true that the ordinary writer loses, while his pen does not touch the paper — while he is passing from word to word, from phrase to phrase, from line to line, from page to page — while, strictly speaking, no writing is being done — more time than he occupies in the shaping of the shorthand characters."

While much of the loss of time between outlines is due, especially in the case of young writers, to mental hesitation, there are several time-consuming manual faults to which even practiced writers are prone, and constant effort must be exercised to overcome them.

One of these is a habit of lifting the entire hand from the paper between outlines. With every lift of the hand, time equal to the writing of one or more strokes is lost. If the writer uses a finger movement solely, the hand, after a few characters have

been written, must be either lifted from the paper, jerked forward and restationed, or dragged along the paper to a new resting place. And during these ever-recurring lifts or shifts, of course the pen is idle. The hand should never be lifted from the paper during the course of a line, and need not be lifted during the writing of a page. The hand should rest on the nails of the third and fourth fingers, gliding along on them smoothly and continuously, with as little pressure as possible. The wrist or ball of the hand should not touch the paper. Only the thumb and first two fingers, which hold the pen, should be lifted.

Even when only the writing fingers are lifted, and not the entire hand, some writers lift the pen too high. Hand in hand with this habit goes the error of writing the outlines too far apart, entailing unnecessary traveling of the hand along the line and from one

line to another. The closer the pen is kept to the paper, and the shorter the distance it has to travel, the more speed is possible.

PHRASING NECESSARY TO SPEED

Many writers rob themselves of possible speed by failure to phrase wordforms that are easily phrasable. The benefits of phrasing are threefold: it eliminates the loss of time incident to lifting the pen between outlines; it permits the abbreviation of words commonly joined, as "at the present time," "we are in receipt"; it allows the omission of minor words occurring in the group phrased, as "in regard (to the) matter," "out (of the) question." Phrase-writing, however, must be done judiciously. While all easily-joined, frequently-occurring word groups should be phrased, there must be no straining after unusual, unfamiliar combinations, or awkward, unnatural joinings.

An operation that occasions an annoying loss of time to the great majority of writers is the turning the leaves of the notebook. Generally the hand is allowed to work its way down, line after line, until, by the time the pen reaches the bottom of the page, the hand has slid entirely off the tablet. When the last line is reached, there is a wild scramble, in which both hands are engaged, to separate the leaf from the others and turn it over. During this process the speaking goes right on, and when the hand finally reaches the top of the new page, the writer finds himself many words behind.

Perhaps the most satisfactory method of turning the leaves is the following: When the hand has traveled about a third of the way down the page, push the leaf up a little, either with the ball of the little finger of the right hand or with the left hand, and insert the second finger of the left hand under the leaf,

keeping the leaf pressed flat with the first finger and thumb. Then, instead of letting the right hand work down the page, keep it on the tablet at about the same level and shift the leaf up with the first finger and thumb of the left hand. The shifting of the leaf can easily be accomplished while the pen is passing from one line to another. When the bottom of the page is reached. lift the thumb and first finger, and the second finger will turn the leaf over without perceptible effort. With this method, the hand always has a smooth surface, as the supporting fingers are always on the tablet, and no time whatever is lost in passing from page to page.

If the obstacles mentioned can be eliminated, the result should be a light, free, smooth, continuous, gliding movement. High speed is impossible without this movement, but if once this movement is acquired, there is

Attainment of Speed in Shorthand 43 practically no limit, on the manual side, to the speed that may be attained.

MOTIVE POWER

But let it be remembered that the elimination of all the obstacles in the world will not produce speed. Removing obstacles is only a negative process. Letting off the brakes does not push the engine; there must be motive power back of it. And the motive power back of rapid shorthand writing is practice, practice, practice. It is surely betraying no secret to say that the greatest obstacle to the attainment of speed in shorthand is simply lack of practice - intelligent, systematic practice. But the mistake is commonly made of limiting practice to just one thing - dictation. Mr. John R. Gregg says on this point:

"The highest degree of skill in the study of everything may be attained most easily and quickly by following a well-planned course of training. In the study of shorthand such a course of training should provide for variety in the methods of practice. It is a singular thing how many students of shorthand believe that all they need in order to attain speed is plenty of 'dictation practice.' In athletics or sports of any kind, it is generally known that an athlete or a player will go 'stale' if he is kept practicing one thing or in one way all the time. A change in the form of training or practice enables him to maintain his vigor, elasticity and reserve power. Everybody recognizes the truth of this idea as applied to anything - save shorthand or typewriting."

The plan of training should embrace such features as the copying of shorthand plates, to preserve a correct style of writing; drill on the frequent combinations, the wordsigns, and the common phrases, until the execution be-

Attainment of Speed in Shorthand 45 comes automatic; writing thoroughly practiced matter from dictation, to train the hand to swift transitions; writing new matter from dictation, to cultivate the word-building faculty; reporting lectures, sermons, etc., whenever opportunity offers; reading back all of one's own notes; reading the correctly-written shorthand in the wide range of literature now available in the system; drills in penmanship both shorthand penmanship and longhand penmanship, cultivating the freearm movement. If a program of this kind is followed, there will be no such

things as obstacles to speed.

