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A COMPENDIUM OF PRACTICE METHODS AND THEIR
APPLICATION TO THE BASSOON

By

BRUCE HAMMEL

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CHAPTER ONE

INTRODUCTION

The following treatise is a compilation of the significant writing and research on practicing organized into a reference document for teachers and students of the bassoon to help them maximize the productivity of their practice time. The emphasis is on specific techniques which can be used to solve problems of tone development, technique, and articulation on bassoon. Although a few exercises may be included, this is not a method book, but a compendium of many approaches for working on these musical fundamentals.

A basic assumption of this project is that most students learn how to practice primarily from their teachers. Unfortunately, the exigencies of upcoming performances, juries, and auditions usually compel teachers to work exclusively on the performance aspects of the music, and therefore, seldom, if ever, do they actually observe their students practicing. A useful comparison may be made between musicians and athletes; both spend many hours performing repetitive drills to condition their muscles to respond consistently and accurately. The athlete, however, almost always has a coach/trainer present during workouts to provide motivation, direction, and feedback, whereas music students are provided teacher guidance on the average of only one to two hours per week. Therefore the music student is left with the responsibility of organizing and monitoring from 10-30 hours of personal "workouts" each week.

Most students fare adequately well in these circumstances; they learn to become self-motivating, creative in their approach to solving problems, and cognizant of the importance of organizing their time. Also, they have the freedom to discover for themselves what practicing techniques work best for them. Unfortunately, because of the relative inaccessibility of research data and scholarly literature on the subject, all but the most enterprising students are limited to using the techniques they devise on their own and those they learn from teachers, peers, and others. This compendium of approaches to practicing the bassoon will present students with a variety of ideas to consider as they develop their practicing habits and build a repertoire of appropriate practicing techniques.

The term "practice" will refer only to the activity in which a musician spends time alone working to improve his instrumental skills. Essentially, this represents the time during which the student assumes the additional role of self-teacher as he reacts to the sounds he is producing and makes decisions about how to effect their improvement.

General questions such as how much, how often, and what to practice are discussed because of their significance in organizing the practice session as a whole. However, the treatment of these topics is brief because the intention of the paper is not to determine which scheme is best. The subject of learning theory, which must necessarily be a part of any discourse on practicing, is referenced only to help explain or support specific points. Because little has been written about how to use electronic tuners, metronomes, and tape recorders efficiently and creatively, this topic receives special attention within the appropriate sections of the paper. Peripheral areas

such as motivation, memorization, stage fright, etc. are considered outside the purview of this study.

Since relatively little research has been done on the effects of different techniques of practicing, much of this treatise relies on the writings of various performers and teachers. Although little of what they propose has been verified through research, the value of what they offer can be inferred from their own success as musicians and the success of the students they have taught. Furthermore, a student may find certain techniques more useful for him than others, regardless of the results of research experiments, which can only reflect the norm.

The treatise is divided into two main sections. The first gives an overview of how to best organize practice time. Included are discussions of how much, when, where, and what to practice. The second focuses on the techniques that can be used to make the time spent in the practice room more efficient.

CHAPTER TWO

GENERAL CONSIDERATIONS

Questions regarding the length, number, distribution, and time of day of the practice sessions will be examined in this chapter so that students may determine what conditions will provide the best learning situation. The answers to these questions will vary according to the individual, but some fundamental principles will be presented to serve as a starting place for experimentation.

How long

The dilemma of how long a bassoonist should practice depends on so many variables that no single answer will be satisfactory for everyone. However, a rephrasing of the question can be valuable for all students: how significant in the learning process is the total time spent practicing? A common misconception among students is that the number of hours practiced is the principal determining factor in their progress. Certainly increasing one's practice time may be beneficial, but only if the time is used properly:

There is simply no optimum practice time. In advising students on practice, the old but true admonition should be invoked: "It's not how long you practice; it's how you practice."¹

Quality of practice is, of course, far more important than quantity. Beyond reasonable and general guidelines, rigid adherence to a specific time schedule of minutes or hours should be avoided.²

The above statements, by researchers in the field of music, are based on the results of their study of the psychology of music learning; renowned violinist, Fritz Kreisler reached the same conclusions from his own experience as a teacher and performer:

(Kreisler) regarded the accepted necessity of having to practice several hours a day as a type of self-hypnotism, which he felt was liable after a while to act like a drug and become an addiction.

¹ Robert F. Miller and G. David Peters, Music Teaching and Learning (New York: Longman, Inc., 1982), p. 156.

² Daniel Kohut, Musical Performance: Learning Theory and Pedagogy (Englewood Cliffs, New Jersey: Prentice-Hall 1985), p. 130.

The worst thing one can do, according to him, is to lay the emphasis on the number of hours you practice. It is pointless, he said. Length of time means absolutely nothing whatsoever in terms of achievement.³

Although Kreisler may have overstated the case a bit, the results of the limited research on the subject support the view that the amount of time spent practicing is not the sole or even the most significant factor that contributes to a student's musical progress. After observing the behavior of college music students in the practice room, Geringer and Kostka concluded that:

Although increasing the amount of practice time alone may not necessarily correspond with improved performance, attentiveness and structured practice appear to be important aspects of both improved practice and performance.⁴

In an experiment testing the effect of model supportive practice with beginning brass instrumentalists, Zurcher found that:

. . . while the amount of time spent in practice may be significantly different between groups, the amount of practice may not be the determining factor in increased music achievement.⁵

The results of a study on the effect of practice reports led Wagner to conclude that:

Although group 3 spent significantly more time practicing than either Groups 1 or 2, subjects within that group improved at a rate no faster than the others. It would seem then that the amount of time practiced is not the only determining factor in musical improvement.⁶

The above findings support the basic premise of this treatise, which is that the total time spent practicing may be less significant than the relative efficiency of its application. Nevertheless, since the amount of practice is still a factor in the rate of improvement, a few basic guidelines for determining some minimum and maximum limits for a day's practicing would prove helpful.

³ Leslie Sheppard, "Practice makes . . . ?," Stradivarius, 89 (1978):127.

⁴ John Geringer and Marilyn Kostka, "An Analysis of Practice Room Behavior of College Music Students," Contributions to Music Education 11 (1985):24.

⁵ Clifford K. Madsen, Douglas R. Greer, and Charles H. Madsen, Research in Music Behavior (New York: Teacher's College Press, 1975), p. 126. Zurcher study.

⁶ Madsen, Greer, and Madsen, p. 130. Wagner study.

Clarinetist Larry Combs recommends that "the serious instrumentalist, whose playing is changing and developing, should devote two to four hours daily to thoughtful, organized work, in addition to the playing done in rehearsals and performances."⁷ Ted Dechter states that "an experienced player usually practices from one to three hours daily (or even more)."⁸ In his book on practicing the violin, Robert Gerle suggests that "there is no virtue in practising eight hours daily for its own sake: two or three hours of good practice is far better than six hours of bad practice."⁹ Although there are no significant experimental data in this area, an informal survey of numerous teachers of various instruments corroborates the above statements, suggesting that a range of from one to four hours of high quality practice is the generally accepted amount of recommended daily practicing for college music students.

Excessive practice, more than four hours per day, may enable a student to acquire greater technical facility but, according to some, this facility may be earned at too great a price. Emil Sauer wrote that:

Four hours daily, divided into two equal parts (in the morning and in the evening) is abundantly sufficient. Practising beyond this time is harmful. By mechanical finger-work nothing can be attained other than the risk of killing even what little spirit is left in us.¹⁰

Fritz Kreisler believed "that practice in itself had a numbing effect on the brain, cutting down one's imaginative powers, and curbing the alertness of the mind by stimulating muscle power instead."¹¹ Both statements imply that too much practicing will not only hamper the ability to concentrate but may also cause the student to sacrifice his artistic creativity for sheer technical proficiency. In addition, the ability of a bassoonist's embouchure to endure more than four hours of strenuous practice is questionable.

Massed vs. distributed practice

A variable that may have a more profound effect on the efficiency of the practice sessions than total time is that of distribution of the time, "whether the material is acquired more efficiently

⁷ Larry Combs, "How to Practice Effectively," The Instrumentalist 39 (1985):28.

⁸ Ted Dechter, "How to Practice," The School Musician 56 (1984):8.

⁹ Robert Gerle, The Art of Practising the Violin (London: Stainer & Bell, 1983), p. 14.

¹⁰ Sauer, Emil, Mein Welt. Cited in Jozsef Gat, The Technique of Piano Playing (London: Collet's Holdings Ltd., 1965), p. 104.

¹¹ Sheppard, p. 127.

by continuous practice until learned or by splitting up the period of practice. The former method is referred to as massed practice, the latter as distributed."¹²

Rubin-Rabson, in a series of experiments testing various methods of memorizing piano music, showed that her subjects remembered more by the distributed method than by the massed method.¹³ According to Lundin, Rubin-Rabson's report "agrees with most work done in other fields of learning, where the method of distributed practice is usually most effective."¹⁴ Miller and Peters agree with this assessment, stating that "complex continuous-action tasks, such as those used in musical performance, are best learned from distributed rather than concentrated practice".¹⁵ They add that "even for most professionals, the use of several shorter practice sessions rather than one long session is beneficial."¹⁶

To fully explain why distributed practice is superior to massed practice would require a long discourse on how we learn and how our brain processes information. Therefore, to remain within the scope of this paper, discussion of the topic will be limited to a few brief observations that might be of some use to a student in improving the efficiency of his practice.

For the brain to process new information and accurately store it requires not only practice, but time:

Studies on spaced practice support the idea that the sheer amount of time spent in practicing a composition is less significant than the total amount of time that passes while the music is learned, for the understanding of the music grows during rest periods as well as during practice periods.¹⁷

This may in part explain why it is so difficult to "cram" for a performance or lesson. For those periods when finding adequate amounts of time for practice is difficult, the bassoonist may find it profitable to allot at least a small amount of time to getting new material started. Over the

¹² Robert W. Lundin, An Objective Psychology of Music (New York: The Ronald Press Company, 1953), pp. 120-21.

¹³ Lundin, p. 121.

¹⁴ Lundin, p. 121.

¹⁵ Miller and Peters, p. 156.

¹⁶ Miller and Peters, p. 156-157.

¹⁷ Randall James Jones, "Considerations with Regard to the Mechanics of Practice Methods at the Piano and a Comprehensive Performance Project in Piano Literature" (D.M.A. Dissertation, University of Iowa, 1981), p. 17.

course of time, some understanding may be gained even if future practice on the material is limited.

Langeheine adds that:

The information processing that takes place between short-term and long-term memories needs a period of time without interference. Pauses can, therefore, be regarded as "information-clinchers" and the most ideal method of retaining new material may be to sleep after learning it.¹⁸

Although sleep may not always be a practical solution, pauses during a practice session may be helpful for the effective processing of new information. The problem of interference and some suggestions for diminishing its impact will be examined in greater detail in a subsequent chapter.

Another reason to distribute the practice sessions is to avoid the potential risks of massed practice:

Practice when one is physically fatigued is detrimental because it can cause embouchure problems and excessive muscular tension, both of which are counterproductive to good performance technique. Excessive mental fatigue can also lead to numerous errors, which is equally detrimental.¹⁹

Moreover, "if performance during a practice period is caused to be inferior by 'massed' practice (without rest periods), the inferior practice will be learned and retained."²⁰ Unlike athletes, for whom superior physical conditioning is achieved by pushing themselves to the limit, bassoon students should be very cautious as they become fatigued. To strengthen the embouchure and build endurance a certain amount of playing past the tired stage is required, but prolonged practice in this condition could certainly prove more harmful than beneficial.

Practical implications

Having determined that distributed practice is preferable, the student then must decide how long to make each practice session. In the absence of experimental data to provide guidelines, the suggestions of various artists and teachers will be submitted. Bassoonist Alan Goodman

¹⁸ Linda Langeheine, "Practicing More Efficiently," *The Instrumentalist* 34 (1979):8.

¹⁹ Kohut, p. 130.

²⁰ Edwin C. Kruth, "Practice, What Do We Mean?," *The Instrumentalist* 26 (1971):53.

says that "generally speaking, it is much better to practice in shorter stretches of time, say 20 minutes to half an hour with breaks, than to tire the mind and body with longer blocks of practice time."²¹ Larry Combs' advice is:

For beginning players, or more experienced ones who have had a long absence from the instrument, shorter practice sessions (15-20 minutes at a time) repeated throughout the day are preferable to a single, longer practice session.

You should also be aware of reaching points of diminishing return, and at that time take a break of sufficient length to revive mind and body.²²

Pianist Gyorgy Sandor says that "it seems that a short break after practicing twenty minutes is advisable."²³ Jozsef Gát recognizes that it is impossible to prescribe for anyone a specific time limit for a practice session, but he does offer this opinion:

Individuals differ with regard to the length of the time they are able to practise with full concentration and without getting exhausted, and even the same pianist will change according to his momentary physical and psychic condition. The time during which we are able to concentrate without getting exhausted and suffering no detrimental consequences is generally 25-40 minutes. Thereafter it is absolutely necessary to rest for a shorter or longer period.²⁴

The previous statements would therefore suggest sustaining the practice session for 15-45 minutes while monitoring one's level of concentration to guard against playing while tired. Furthermore, advice from Miller and Peters that "longer rest periods are superior to shorter rest periods in perfecting psychomotor tasks"²⁵ would indicate separating the practice sessions with significant rest periods.

²¹ Alan Goodman, "A Practice Guide for the Bassoonist," The Instrumentalist 35 (1981):62.

²² Combs, p. 28.

²³ Gyorgy Sandor, On Piano Playing (New York: Macmillan Publishing Company, 1981), p. 186.

²⁴ Josef Gát, The Technique of Piano Playing (London: Collet's Holdings Ltd., 1965), pp. 103-104.

²⁵ Miller and Peters, p. 157.

Regardless of the implications of research or the advice of professionals, "ultimately each student must learn to determine how long he or she is able to practice and still achieve optimum results."²⁶ Master violin teacher, Ivan Galamian adds that:

It does not make sense to demand dogmatically that every student should practice a certain number of hours according to a certain rigid schedule. All that can be stated in a generalization is that individually the student has to find out by intelligent experimenting what is best for himself.²⁷

When

What hour(s) of the day one practices and the consistency of the daily schedule are further aspects that should be considered in developing productive practicing habits. Since researchers have not studied this aspect of practicing, the following advice from teachers and performers will be given. Combs, Dechter, and Watson Forbes all recommend early in the day for practice because the mind is fresh and alert, "before the work of the day has sapped the zest for improvement."²⁸ On the other hand, Langeheine's suggestion that "the most ideal method of retaining new material may be to sleep after learning it"²⁹ indicates that a practice session before bedtime might be highly beneficial. Allgood, Kohut, and Ramon Kireilis are flexible in their advice, suggesting that each student find the time(s) of day that are best for them, especially those "when the performer is alert and at his best."³⁰

Of equal or greater importance than the actual time of day may be the consistent adherence to a schedule. Miller and Peters state simply that "scheduled practice is essential in perfecting psychomotor skills."³¹ Kohut supports this view and also offers some practical suggestions for managing the practice schedule:

What is the best time of the day for practice? For many people morning is better than afternoon or evening, because they are more alert and thus able to concentrate better. But this generalization does not apply to everyone, of course. Some persons do

²⁶ Kohut, p. 130.

²⁷ Ivan Galamian, Principles of Violin Playing and Teaching (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1962), p. 94.

²⁸ Watson Forbes, "The Daily Dozen," Stradivarius 88 (1977):633.

²⁹ Langeheine, p. 8.

³⁰ William Allgood, "The Why, When . . . of Practicing," The Instrumentalist 38 (1983):32.

³¹ Miller and Peters, p. 157.

their best work in the evening. Whatever time is selected, however, the important thing to keep in mind is consistency, not only in terms of daily practice but in establishing a definite time for practice so that it becomes a routine or habitual matter.³²

The college bassoonist should therefore consider setting up a schedule of daily practice times and adhering to it much like he would his class schedule.

Where

Students may have little choice in where they practice, but nevertheless should consider the following factors when selecting this location. The first basic criteria is that the practice room provide an environment where full concentration is possible: "a place where the student will not be disturbed by radio, television, conversation, street noise, other persons practicing, telephones, and other potential disturbances. The practice room should have good lighting and proper ventilation."³³

The student should also "consider the acoustics of the practice room carefully. Avoid an acoustically dead room or a large hard-floored room with a booming echo-chamber effect."³⁴ Bassoonists that make their own reeds should be particularly careful in this regard because a reed that sounds terrific in the practice room may sound terrible in the concert hall. The greatest danger lies in practicing in too "live" a room which can make player's tone deceptively fuller than it really is. The student should experiment with different locations until he can approximate the acoustics of the concert hall where he will be playing or "whenever possible, practice in the place of the performance itself."³⁵

³² Kohut, pp. 129-130.

³³ Ramon Kireilis, "The Practice of Practicing," The Instrumentalist 30 (1976):54.

³⁴ Kireilis, p. 54.

³⁵ Gerle, p. 22.

CHAPTER THREE

STRUCTURING THE PRACTICE SESSION

Having made some decisions about the length and distribution of the practice time, the student must next determine how to structure the time within each session effectively. Daily practicing will have to be distributed between a variety of activities such as technical studies, solos, and ensemble music. Also, pieces that are to be performed will require work on technical difficulties as well as interpretive ones. To insure adequate development in all aspects of playing, the student must achieve a satisfactory balance between these elements.

The first and most critical step is for the student to identify his current goals:

Think what you need to accomplish specifically during the day's practice: three minutes spent thinking about your practising before you start are worth three hours spent in aimless repetition, during which you only learn the bad better.

Plan ahead the amount of time you want to spend on each component of your practice material, depending on what you are preparing for and how much time there is available. The plan should include daily, weekly and even longer range schedules.¹

The goals should include immediate short range ones, such as improving small sections of a piece, to long range ones, such as increasing tongue speed. Students are urged to keep a written record of their goals and to review them frequently so they can determine whether their practicing is effective

Galamian's three categories of practice

Ivan Galamian has devised a logical and useful approach to analyzing and managing his practice time. First, he identifies three categories of musical practice:

It is very important to have an intelligently balanced division of practice hours, distributed between (1) "building time" (devoted to overcoming technical problems and advancing one's equipment in general), and (2) "interpreting time" (devoted to making the playing of a musical work conform to one's own interpretive ideas). A (3) "performing time" should be added whenever a piece is being readied for actual performance.²

¹ Robert Gerle, The Art of Practising the Violin (London: Stainer & Bell, 1983), p. 13.

² Ivan Galamian, Principles of Violin Playing and Teaching (Englewood Cliffs, N.J.: Prentice-Hall, 1962), pp. 94-95.

This system of categorization effectively classifies all of the time a student spends practicing and therefore makes a reasonable assessment of practice time easier to accomplish. After looking at a more detailed description of the activities included in each area, the process of making this assessment will be examined.

Building time

Kohut states that "building time is designed for the development of performance technique".³ Galamian recommends that this time "should be spent partly with scales and similar fundamental exercises and partly in dealing with technical problems encountered in etudes and in the repertoire."⁴ Both statements imply that this period primarily includes the repetitive drill work executed for the improvement of motor skills.

Interpreting time

Galamian states that during interpreting time "the emphasis should be placed on musical expressiveness, the shaping of a phrase, of a larger section, of a whole movement, and finally of several movements, as a convincing unit."⁵ Kohut adds that this is the time when the student works on pieces that have been "mastered technically but need attention from an expressive standpoint."⁶

However, the student should be cautioned that the technical working out of a piece does not have to be devoid of musical expressiveness; it is simply that during interpreting time, the student's attention will be focused primarily on the expressive elements of the music.

³ Daniel Kohut, Musical Performance: Learning Theory and Pedagogy (Englewood Cliffs, N.J.: Prentice-Hall, 1985), p. 125.

⁴ Galamian, p. 95.

⁵ Galamian, p. 100.

⁶ Kohut, p. 126.

Performing time

The culmination of the work in the previous phases of practice occurs during performing time:

Performing time means playing the entire piece without stopping, preferably with an accompanist if the piece requires one. The goal is to concentrate on the act of musical performance itself...⁷

During this time the student must learn how to keep going despite technical problems and should concentrate on the "musical gestalt, the total performance goal."⁸ Students often postpone this type of practice until just before upcoming performances, but Kohut advises that "this type of practice is essential and must not be neglected."⁹

Kerner adds that:

The conscientious, overly analytical, and compulsive student will find the performing time a hardship, but he is the very one who stands most in danger of stopping for errors, or stopping altogether, at a performance. Here, the teacher must insist on strict adherence to the "rules of the game" and if necessary increase the amount of performing time.¹⁰

Ideally, students should practice performing with an accompanist on a regular basis, but given the expense and scheduling problems that arise, this is not always practical. Nevertheless, some time should be allotted every day for imaginary performance run-through of pieces that have been technically mastered.

Warm up time

Although Galamian makes no mention of a warm up period, many believe that some physical and mental preparation is advisable if the practice session is to be as effective as possible:

... it is vital that teachers and students realize the importance of a proper, purposeful warm up period prior to engaging in vigorous musical activity. For optimum development of motor skills, muscles must be operating at a functioning level.

⁷ Kohut, p. 126.

⁸ Kohut, p. 126.

⁹ Kohut, p. 126.

¹⁰ Estelle Kerner, "Violin Practices: Pain is Pleasure's Cost," *Music Educator's Journal* (April, 1969), pp. 70-71.

The warm up period can be advantageous in optimizing coordination of mind and muscle prior to undertaking the new motor learning task.¹¹

Warm up activities could arguably be regarded as building time, but the purpose of the warm up is somewhat different:

Warm up is a time for activating and preparing the brain (specifically the musical ear) and the muscles for the intense concentration and efficient coordination that will be needed later, in the more formal parts of the practice session.¹²

Although many warm up techniques are possible, the bassoonist should take particular care to warm up the embouchure muscles slowly by restricting the initial few minutes of playing to the low register. The fingers may not require as much care, but slow playing in the beginning is recommended to loosen up the muscles and establish coordinated movement. Careful listening to all aspects of the sounds produced should accompany these activities to prepare the ear for the remainder of the session.

Order

With the exception of the warm up, the order, use and length of these categories may be flexible:

Even though lengthy practice periods will often include all four of the practice objectives discussed here, this does not mean that every one of them must be included in each practice period. A shortage of practice time on a given day may make this impractical. Other than warm up time, which always comes first, there is no rule that says the other three should follow exactly in the order given here. At certain times it may be more appropriate to go directly into interpreting time and end the practice session with intensive work on scales and arpeggios.¹³

Students who follow a set routine with their practice may find it helpful to vary this routine from time to time. Concentration is best at the beginning of a session so changing the order of practice will help distribute the concentration more evenly over different areas of development. In addition, the introduction of variety into the practice session may increase interest and therefore improve attention and concentration for the entire session.

¹¹ Robert F. Miller and G. David Peters, Music Teaching and Learning (New York: Longman, 1982), p. 156.

¹² Kohut, p. 124.

¹³ Kohut, p. 126.

Balance

The purpose of defining these areas of practicing is to provide the student with a way to evaluate the time he is spending on each aspect of his playing and to adjust this as necessary. Galamian explains why this is so important:

An incorrect balance of building and interpreting time will lead to other faulty practice habits. Some players neglect the building time and concertize for themselves during most of their working hours. They may develop a good feeling for the musical continuity of a work, but difficult passages will continue unmastered and the technical equipment in general will remain deficient. On the other extreme, there are students who know only "building time." They break up every measure, even the simplest, into its component elements and keep working with those elements without ever putting them together again. For such students a composition ceases to be a living work of art, but remains forever a series of technical challenges. By being so absorbed in details they fail ever to get the feeling of the piece as a whole.¹⁴

Although teachers will often recognize imbalances in a student's playing and make appropriate suggestions, students should frequently monitor their playing and practice routine themselves so they can direct their practice time most efficiently to the attainment of their goals.

Unfortunately, the results of the following study indicate that students may not always evaluate their practice time very accurately.

Geringer and Kostka sought to determine not only how students were spending their time in the practice room, but also how their self reported estimates of this time compared with that observed. The students were randomly observed while practicing and their behavior categorized as follows:

Practice room activities were divided into two categories of performance and non-performance, each with five sub categories. The performance codes included solo music practice, ensemble music practice, technical exercise practice, conducting practice, and "other" performance activity. The non performance activity` codes were reading, writing, looking at music scores, "getting ready", and "other" non performance activity.¹⁵

¹⁴ Galamian, p. 100.

¹⁵ John M. Geringer and Marilyn J. Kostka, "An Analysis of Practice Room Behavior of College Music Students," *Contributions to Music Education* 11 (1985), p. 24.

After 2,000 observations they found that 72 percent of the practice time was spent in performance activities. Of that, slightly more than one half of practice room activity was spent in practicing solo music (53%), while 11 percent was used for technical exercise practice. Almost ten percent of the time was spent getting ready.¹⁶

Of particular interest are the results of the students' self reports. "Total observed non performance time (28%) was twice that of the reported non performance time (14%)."¹⁷ Although student estimates that the majority of their performance time was spent on solo material agree with observed behavior, their estimate was significantly lower than that observed (53.3% vs. 45.0%) Conversely, students overestimated the time spent in each of the other four performance categories. The largest misconception was in the area of technical exercises where students estimated they were spending 26.2 percent of their time as opposed to the 11 percent observed.¹⁸

The disparity between observed and estimated times indicates that a reliable assessment of the practice time would be best accomplished with a written record rather than a mental one. In this way a student will be able to recognize quickly if his perceptions match his behavior. In addition, Geringer and Kostka conclude from this data that:

It would seem helpful for teachers and students to be aware of the time used for both performance and non-performance activities and to further define the nature of actual practice and non practice time. Perhaps more efficient practice would include structured preparation activities as well as allowances for relaxation time. Students might benefit from structuring specific practice objectives so that desired behaviors could be increased.¹⁹

Certainly the structuring of specific objectives is a fundamental prerequisite of good practicing. Also, given the benefits of distributed practice, scheduled relaxation time is highly recommended.

¹⁶ Geringer and Kostka, p. 25.

¹⁷ Geringer and Kostka, p. 26.

¹⁸ Geringer and Kostka, p. 26.

¹⁹ Geringer and Kostka, p. 26.

Summary

The most important aspect of structuring the practice session is to set specific goals and chart the progress towards them; otherwise, the practicing will lack direction and focus. The practice session may be divided into warming up, building, interpreting, and performing times.

Achieving a proper balance of each category is essential to the overall development of the student. Students are likely to incorrectly estimate how they are using their practice time so a written record of both goals and time spent working towards them is advised.

CHAPTER FOUR

GENERAL APPROACHES TO PRACTICING

The most basic and essential ingredient for effective practicing is the ability to provide accurate feedback on one's performance:

It is a common assumption that learning is improved merely through the "repetition" of an act. Were it not for reinforcement, the mere act of practice alone ought not change performance at all. When practice does not improve a performance, it is not for the reasons usually described. The "mere act" of practicing in itself does not insure the improvement of a skill. There are many cases to illustrate this fact among those students who slave for hours at a given work without any improvement. In an artistic skill such as music, extremely fine discriminations in the execution of an act make important differences in the consequences. Thus, out of variability in the performances that occur through repetition (practice), the job of the teacher or the student himself is to reinforce - to the degree that he is able - those acts of performance that he considers to be superior to the others. If he can not do this, there is no reason to believe the performance will improve.¹

To recognize these superior acts of performance in the practice room, the student must be able to listen to himself discriminately and objectively. Galamian believes that most students tend to hear what they would like to hear and not what actually comes out of the instrument. For practice to be of any value, the student must learn how to listen objectively:

To train the ear for objective listening is of the greatest importance in order to be able to hear the sound as the audience would hear it and to free oneself from the flattering fallacies of the subjective ear. The ability for honest, objective hearing is the most essential prerequisite for efficient practice.²

The problem of providing accurate feedback is actually a twofold one. First, the student must have a clear concept of how he would like to sound. Traditionally, students have developed this concept by listening to concerts and recordings of great artists. These activities help the student learn what superior playing is and thus, provide a model to which he can compare himself. The second half of the problem consists of making comparisons that are accurate. To do this, the student will have to heed Galamian's advice and learn to listen to himself objectively. Although

¹ Clifford Madsen and John Geringer, "The Effect of a Distraction Index on Improving Practice Attentiveness and Musical Performance," Council for Research in Music Education 66 (1981):132-33.

² Galamian, *Principles of Violin Playing and Teaching* (Englewood Cliffs, N.J.: Prentice-Hall, 1962), p. 101.

Galamian does not offer any methods for effectively training the ear in this area, an awareness of the problem and a conscious effort to overcome it is likely to lead to success over a period of time. However, an excellent resource for developing these listening skills is the tape recorder.

Tape recorder

By taping himself, the student can be removed from the act of performing and therefore evaluate his playing more objectively:

The tape recorder, another practice aid of great value, is most obviously applied to self-evaluation. Regardless of the relative quality of the recorder, speakers and other components, students can discern (and judge) the basic elements of intonation, rhythm, clarity and phrasing, etc. in their playing.³

Since the student's ability to identify problems even in this context will still depend on the level of his musicianship, the teacher's assistance is recommended:

Simply playing a tape of a student's performance is good, and the aural feedback is made even more positive if the teacher reviews and critiques the tape with the student.

The serious problem in providing feedback occurs when the student is practicing in the absence of the teacher. Knowing that practice, lacking in feedback, is insufficient, teachers should encourage students to tape practice sessions for later spot-check review by both teacher and student.⁴

The taping of entire practice sessions would also provide both the student and the teacher with an opportunity to evaluate the student's practicing methods:

Tape every practice session. At first, the students will be amazed to hear their uncanny talent for wasting time, making careless repetitive mistakes and just plain getting nowhere. The recording will reveal many mistakes and bad playing habits that they may not have realized. Often students never understand their teacher's criticism until they hear themselves on tape.⁵

³ Leopold LaFosse, "Teaching the Art of Practicing," The Instrumentalist 28 (1973):43.

⁴ Robert F. Miller and G. David Peters, Music Teaching and Learning (New York: Longman, Inc., 1982), pp. 158-159.

⁵ Ramon Kireilis, "The Practice of Practicing," The Instrumentalist 30 (1976):57.

Since the time spent in the practice room can be as much as doubled through the process of listening to the tape, this technique may not be practical on a regular basis. Taping and listening to an entire practice session should be done from time to time for the purpose of evaluating the efficiency of the student's practicing techniques. On a more regular basis, the student should tape short segments of the session for immediate review. A particularly helpful exercise is to pick out a section of a piece, record and listen to it, try some changes in interpretation, re-record, and then repeat the cycle until satisfied with the result.

The tape recorder can also be helpful in the reed-making process. In the finishing stages when final adjustments to the reed are being made, it can be difficult for the bassoonist to know how a reed will sound to the audience. The tape recorder can help develop the student's understanding of what his reeds must sound like on stage if they are to project a desirable tone to the audience.

Inner hearing

The development of listening skills is important not only for providing feedback, but also for creating a sense of "inner hearing". In his book on playing the piano, Kochevitsky outlines the relationship between the ear, brain, and muscles in the learning of music. Although his explanation is too detailed to relate entirely, his conclusions are worth repeating. His principal point about the function of inner hearing is that:

It is of extreme importance that from the very beginning of music study this connection be established thus: visual-auditory-motor, instead of, as usually happens, visual- motor. The motor response should not be a direct reaction to visual stimulation. The latter should go through the auditory center and only then provoke the motor response.

In the scheme see - hear inwardly - move - hear actually - control, the second link of this chain, being a conditional stimulus, will call forth the movement which produces the sound. This result is immediately checked by the attentive ear and evaluated. So, in circular fashion, this functional relationship is preserved all the time the pianist is active at his instrument.⁶

⁶ George Kochevitsky, The Art of Piano Playing: A Scientific Approach (Princeton, N.J.: Summy-Birchard Music, 1967), p. 28.

During the practice of technical passages when concentration is focused on establishing correct finger patterns, the student should pay particular attention to hearing the notes inwardly before playing them, "otherwise the technique can become an end in itself."⁷

Mental practice

The ability to hear inwardly is also an important aspect of an area of practice that is receiving increasing attention and popularity, that of mental practice. Mental practice is the "cognitive rehearsal of a skill that takes place within the individual, in the absence of any gross muscular movements."⁸ As it pertains to music:

Mental practice is the symbolic or imaginary rehearsal of performance activities without observable movement or sound. In music it is the mental repetition of a given task without the instrument. In brief, it means to practice silently.⁹

In silent practicing, the music is heard and rehearsed inwardly. This type of practicing can be used in a number of ways to work on different aspects of performance. Kohut recognizes two types of mental practice:

There are actually two types of mental practice. the first involves using our imagination (conscious brain) to formulate positive mental images of ourselves accurately doing specific musical tasks. The other type of mental practice involves training the unconscious brain to efficiently process and organize information (goals specified by the conscious brain) and transform it into specific nerve signals to the muscles. In this context mental practice is directed toward development of neuromuscular coordination.¹⁰

The first type, imagery, is advocated by many for increasing concentration, calming the nerves, and quieting the mind. With this technique, also called visualization, every detail of the performance should be imagined. Agrell relates how this method can be helpful:

⁷ Kochevitsky, p. 28.

⁸ Stewart L. Ross, "The Effectiveness of Mental Practice in Improving the Performance of College Trombonists" (Ph.D. Dissertation, Northwestern University, 1985), p. 1.

⁹ Daniel Kohut, Musical Performance: Learning Theory and Pedagogy (Englewood Cliffs, New Jersey: Prentice-Hall, 1985), p. 127.

¹⁰ Kohut, p. 127.

Besides establishing an unhindered mental flow through the piece of music, the mental rehearsal of visualization also activates the physical responses - the fingering, breathing, phrasing. Even though these movements are slight, they nevertheless reinforce the use of particular nerve pathways, just as actual practice does. And better, you can visualize your playing of the piece - with practice - as smooth, relaxed, and without error. In this way you literally program yourself to play it as you wish, just as fears and doubts program error.

Visualization quiets the language-using part of the mind (responsible for fear and doubt, which produce tension) and speaks to the body in its mother tongue: images.¹¹

Agrell illustrates with an example for french hornists that is equally pertinent to bassoon playing. To practice attacking a note cleanly and accurately, he suggests using a kind of visualization ceremony in which the player imagines the details of the action, such as:

. . .watching the approach of the passage, deep breath, position of the tongue, set embouchure and mouthpiece pressure, release of air, support of air column - clumsy in words, but smooth and fluid as a visualization, and easy to practice without the horn.¹²

Kohut's second type of mental practice is used in the learning of specific performance problems in pieces. As a student mentally hears the music, electromyographic studies have shown that "nerve signals actually travel from the unconscious brain to the muscles."¹³ Therefore, the correct pathways to the fingers can be reinforced without actual contact with the instrument.

Because of this transmission of nerve impulses during mental practice and the importance of hearing the composition inwardly before playing, many musicians believe that a piece should be studied and analyzed mentally before beginning any physical practice: "only after a player knows the music visually and aurally, should he begin practicing it with the instrument."¹⁴ In this way, correct aural stimuli will be established at the outset and the likelihood of accuracy in playing will be increased significantly.

¹¹ Jeffrey Agrell, "Practicing Without the Horn," Woodwind, Brass, and Percussion 23 (1984):9.

¹² Agrell, p. 9.

¹³ Kohut, p. 127.

¹⁴ Warren Benfield, "Practice Habits for the Bass Student," The Instrumentalist (November 1979):62.

After physical practice has begun, the student may also find it helpful to mentally practice isolated difficult passages or entire compositions. During the repetitive work of learning the technical aspects of a piece, it is important to also mentally rehearse the music so that the musical conception is not lost:

The whole composition which is being studied should be read mentally from time to time. We must remember Busoni's warning that one easily forgets about the musical meaning during the motor work at the piano. By mental reading without actual playing we can revive the clear acoustic picture of the composition in our mind and are stimulated in our efforts to master it technically.

Besides, while reading silently one notices better what is written around the notes - the many important signs which might not have been observed during actual playing. As with anything stationary, visual impressions of the printed page are engraved on the mind more easily, accurately and with more stability than fleeting auditory ones.

The silent mental reading of a musical composition (or some section of it if needed) often helps better than actual playing to unite separate tones into meaningful musical lines. After perceiving the composition in all its logical connections and successions, one is able to follow inwardly the course of its sound in faster tempo, and thus play it as fast as needed.¹⁵

An additional advantage of mental practice is that it can be used at any time or place. Many touring musicians rely on mental practice when physical practice is not possible. Bassoonists may find it helpful to mentally practice during ensemble rehearsals when other sections of the group are being rehearsed or before concerts and recitals to refresh the memory without tiring the embouchure.

Mental practice can also be interjected at any point within the practice session. The few studies that have been done suggest that the best time to use mental practice is someplace mid-way in the rehearsals: "results showed that the mid-way period of (mental) rehearsal was superior to the other forms of distributed rehearsal."¹⁶ In addition, the use of mental practice at various points during the practice session can be useful in providing the physical apparatus, the embouchure especially, with a brief rest.

Research on mental practicing has been performed in many areas, especially sports, and has been shown to be effective in many cases, especially when used in conjunction with physical

¹⁵ Kochevitsky, p. 50.

¹⁶ Robert W. Lundin, An Objective Psychology of Music (New York: The Ronald Press Company, 1953), p. 123.

practice. Ross, as a result of his study on the effects of mental practice on college trombonists, concluded that:

The use of mental practice, in combination with traditional physical practice, would seem to be the most efficient and effective type of practice. Undoubtedly, physical practice continues to play a crucial part in muscular development and conditioning of instrumentalists. Nevertheless, practice that combines mental and physical work should improve performance over a short period of rehearsal.¹⁷

He does caution that:

For the unskilled or inexperienced performer, however, the lack of fundamental skills could pose serious problems. Conceivably, this type of player might play worse after mentally practicing than in not practicing at all; bad habits could be mentally rehearsed over and over, without the necessary feedback to correct initial mistakes.¹⁸

However, college instrumentalists on their principal instrument should have enough skill to "internalize a very clear model of a perfect performance during mental practice, even if he cannot yet perform in this manner."¹⁹ Therefore, for them, mental practice can be a valuable technique.

Preparing pieces for performance

Whole vs. part

When first working on a new piece the student will have to decide whether to first work on isolated sections of the piece and then put them together or to work on the whole composition at once. On the basis of a limited amount of research data on the memorization of piano music Lundin concludes that:

. . . the whole method may be an effective one so long as the amount of material being learned is small. It is quite possible, as in other learning studies, that a larger score of music will be most effectively learned by the part method. Here the results agree fairly well with those in other studies of learning. The method used will depend on the size,

¹⁷ Ross, p. 114.

¹⁸ Ross, p. 113.

¹⁹ Ross, p. 113.

difficulty, and meaning of the material to be memorized as well as the performance level of the subjects involved.²⁰

Lundin's rather vague statements would indicate that only relatively short pieces should be approached by the whole method. Whole practice is necessary at times for obtaining a broad view of the piece and for establishing continuity between sections. Unfortunately, the technical difficulties of a work may require the student to take a tempo so slow that the overall conception will be lost. Also, to efficiently learn the most problematic sections, the student will often need to repeat these small sections alone many times. Therefore, many musicians advocate the use of some combination of whole and part practice. For instance, Newman believes that "small-section practice should serve largely as a means of final polishing"²¹ and therefore recommends beginning practice of a piece "with the over-all view so as to put the practicing into perspective - that is, it is better to go through the entire piece or movement and include everything at once, from fingering to dynamics."²²

When section practice is used, Newmann suggests the following approach:

He who begins by trying to perfect the first line, then the next, and so on, usually ends up with the beginning sounding fine, the middle fair, and the ending weak, to say the least. If anything, the ending should sound best, since it leaves the last impression. By practicing the entire piece, beginning on page 3 on Tuesday if page 2 marked the end of Monday's practice, the effort will be evenly distributed.²³

Following similar logic, Madsen recommends learning pieces from the end to the beginning so that when the piece is performed, the student will be proceeding into more and more familiar territory rather than the other way around.²⁴ Cerone adds one further bit of justification for additional practice at the end of a piece:

²⁰ Lundin, p. 120.

²¹ William S. Newman, The Pianist's Problems: A Modern Approach to Efficient Practice and Musicanly Performance, 4th ed. (New York: Da Capo, 1984), p. 128.

²² Newman, p. 128.

²³ Newman, pp. 128-29.

²⁴ From a classroom lecture in Behavior Modification, Clifford Madsen.

Practice the ends of pieces with special attention. Very often "the horse smells the stable" and that otherwise spotless performance is marred by a rather substantial act of carelessness right at one of the most climactic moments.²⁵

Section practice is most often used to learn problem spots, but Jones recommends using this technique only if other methods have failed:

The disadvantage of this practice method is that it requires a passage to be labeled a trouble area, and this may remain as a stigma in the performer's mind even if the passage has been carefully practiced and the problem seemingly solved. During the pressure of performance, uneasiness and insecurity may appear in just such passages.²⁶

It is likely that the student will identify and label difficult passages as such before section practice begins and will need to practice them separately in order to reduce the student's insecurity over them. Nevertheless, overpractice of a particularly difficult passage without evidence of significant improvement can increase the stigma associated with it, in which case, some other tactic should be tried.

The bassoonist will have to experiment with different distributions of whole and section practice as he tries to achieve an effective approach to learning new pieces.

Slow practice

Almost every article written on practicing mentions the value of slow practice. Many students attempt to play their music at performance tempos too soon and often "need to be reminded that before one can be expected to run, one first needs to learn how to roll over, crawl, then stand up and walk steadily."²⁷ In more scientific terms, neurologist Frank Wilson explains that the cerebellum is the active part of the brain during the learning of coordinated muscular activity and that:

. . . it assumes that any repetitive activity in the muscular system is being repeated because the conscious mind is trying to make it automatic. The cerebellum will be just as efficient an automatizer of incorrect sequences of timing as of those that are

²⁵ David Cerone, "Bringing the Stage into the Practice Room," *American String Teacher* 31 (1981):25.

²⁶ Randall James Jones, "Considerations with Regard to the Mechanics of Practice Methods at the Piano and a Comprehensive Performance Project in Piano Literature" (D.M.A. Dissertation, University of Iowa, 1981), p. 6.

²⁷ Kohut, p. 125.

correct. When practicing takes place at a pace too fast for accurate playing, there is very little chance for the material to be mastered, and reliable, confident performance simply will not occur.²⁸

Slow practice can be valuable at any point in the learning process, but it is particularly important in the initial stages of learning a work in insuring that only correct responses are learned. As a new work becomes more familiar and the note patterns more automatic, the tempo can be increased without as much danger of errors occurring. Wilson actually states that "it is probably true that practice for speed is seldom necessary. The cerebellum can supply all the speed wanted if patterning is correct during practice."²⁹ However, most musicians believe that some practice at fast tempos is essential. Violinist, Robert Gerle admits that slow practice is important, but adds that:

A piece practised slower than its proper tempo is a different piece. The only way to get a true idea of a piece and its problems is to play it in its performance tempo, even in the early stages of learning. The tempo in which a passage has to be played, the speed with which any of the motions has to be executed, are essential and specific elements of the technique involved in its performance.

After these bowings and fingerings have been solidified by slow practice, the passage, and the whole piece, have to be practised again in the final tempo in order to learn the appropriate physical motions and mental impulses at their proper speed.³⁰

The effect fast playing has on the conception and the technical problems of a piece are just as significant on the bassoon as the violin. Many fingering combinations on the bassoon, especially those involving the thumb, are useable at slower tempos, but impossible at faster tempos. When selecting fingerings and making decisions about the use of techniques such as flicking, the bassoonist must be aware that the performance tempo may prohibit certain choices. The experienced bassoonist may be able to anticipate these situations and make the correct choice without experimentation, but the student who is still seeking the most efficient approach for a particular problem may find it helpful to practice more than one fingering possibility before becoming locked into one which may fail at the faster tempo. As the student becomes comfortable with each fingering sequence, the tempo can be increased until it becomes apparent which combination will work best.

²⁸ Frank Wilson, "Mind, Muscle and Music" (Bulletin from the Selmer Company, 1981), p. 14.

²⁹ Wilson, p. 14.

³⁰ Robert Gerle, The Art of Practising the Violin (London: Stainer & Bell, 1983), p. 14.

Since slow practice "allows the student to listen and evaluate a performance more easily and accurately and to concentrate on and become more aware of kinesthetic sensations in the body,"³¹ it can be used effectively to work on the musical details of a piece and to refresh the brain's perception of the muscle movements. During fast passages, the mind's attention is often focused on the technical problems presented and not on the musical phrasing. Slow practice will permit the student to concentrate on the musical shape of the line until that becomes as automatic as the fingerings.

Gerle suggests combining the most effective elements of both fast and slow practice to give the student the "advantage of practising the crucial motions in tempo to the one of having time to think."³² The combining of slow and fast practice refers to a technique where every finger movement is made quickly and decisively as if in the performance tempo, but is preceded by a short pause to give the mind time to think through the process. One of the advantages of this technique is that the length of the pauses can be varied to suit the difficulty of the finger movement. Eventually, as the student masters a difficult passage, the pauses can be reduced until eliminated.

Gyorgy Sandor advocates a related type of practicing in which the student plays everything as fast as he can control. Problematic passages will necessarily need to be practiced more slowly, resulting in "totally uneven metric values because the amount of time it takes to master each note or passage varies with its difficulty!"³³ This "uneven" practicing saves time in getting the student through the easier material quickly and also forces him to concentrate more intently. Although Sandor certainly does not advocate unevenness in performance, the student should be warned that its overuse could result in uneven performance if not done in conjunction with other practicing techniques.

For the later stages of the learning of a piece, Jones advocates a compromise, "three-quarter" tempo which may at least partially provide the benefits of both slow and fast practice:

This procedure requires the music to be played at just the point in tempo where difficulties begin to be evident. The performer can cope with his temporary musical inadequacies more easily at this tempo than at a tempo in which the playing is completely out of control.³⁴

³¹ Kohut, p. 125.

³² Gerle, p. 14.

³³ Gyorgy Sandor, On Piano Playing (New York: Macmillan Publishing Company, 1981), p. 186.

³⁴ Randall Jones, p. 3.

This technique allows the student to get a better grasp of the work as a whole while maintaining good control of the technical aspects. "Three-quarter speed" practice can be particularly useful for maintaining a work that has been mastered and must be kept ready for a period of time.

One final method of practice is advocated by Gerle and others:

It is also a good idea to practise fast passages faster than concert tempo (and slow ones slower) in order to build up an extra margin of safety above and beyond the tempo of the performance.³⁵

Kochevitsky explains that a tempo reserve is necessary because "the stage influences nervous activity greatly and makes much greater requirements."³⁶ The tendency of many students to play faster in performance than in practice provides further incentive for creating a tempo reserve, but the student should be careful not to start perceiving the faster tempo as correct. The conscientious use of a metronome to maintain a feeling for the desired tempo is critical.

The use of slow practice is unquestionably a valuable technique and should be used frequently, both during the learning stages of a work and also afterwards. The student should experiment with the different applications of slow practice that have been presented to determine which ones work best for him.

Practicing musically

In learning new pieces, students must spend a fair amount of time working out technical problems. Although these problems are generally mechanical in nature, many musicians maintain that they should not be practiced in a mechanical way. Leon Fleisher presents the following argument for "musical" practice:

It has been my experience that if, for example, you take a passage in a piece of music that is difficult and you work on it purely as technique - mechanically, from a mechanical point of view - and master it from a mechanical point of view, the moment you begin to superimpose your conception, you, in quotes, "expression," which consists of crescendos, diminuendos, and all that kind of thing, this mechanical

³⁵ Gerle, p. 14.

³⁶ Kochevitsky, p. 53.

structure you have built up collapses. It will not withstand, it will not support the weight of the conception.³⁷

More specifically, Galamian explains that:

In the complete rendition, the addition of vibrato, the concern for expression, for nuance and dynamics, all add entirely new elements that were not present when the passage was segregated for the cold technical study. These additional factors disturb the smooth functioning of the practiced passage.³⁸

Galamanian recommends that after “the passage has been mastered from a purely technical point of view, it must be practiced again as a piece of music, in the context of a larger section and with the expression that is its due.”³⁹ On the other hand, Fleisher suggests that the musical expression should not be reserved until after the technical problems have been conquered:

Even in the slow practice of a technically difficult place you must practice it with all that you are going to put into it later - the same kind of expression, the same kind of dynamics, the same inner tension and relaxation.⁴⁰

This type of practice will enable the student to reach his performance tempo without having to relearn the passage with the addition of expression. Also, technical passages, having been treated musically from the beginning, will have a greater likelihood of being performed in a more expressive manner if practiced in this way. Moreover, Kochevitsky believes that many passages that are difficult from a purely technical standpoint will become much easier if different musical interpretations are attempted. He hypothesizes that “often the difficulty does not lie in the motor process itself, but is hidden in the musical demands.”⁴¹ In other words, practice of the physical actions alone may never lead the player to mastery of a passage; the student must make a “connection between the inner musical imagination, the innervations of movement, and muscular sensations”⁴² if he is to develop virtuosity. Therefore, he suggests the following practice procedure:

³⁷ Leon Fleisher: About Practicing and Making Music,” *Clavier* 2 (1963):12.

³⁸ Galamian, p. 101.

³⁹ Galamian, p. 101.

⁴⁰ Fleisher, p. 12.

⁴¹ Kochevitsky, p. 16.

⁴² Kochevitsky, p. 16.

Each difficult technical problem should be examined and approached from different points of view. Each time an intricate passage is repeated, its execution demands a new adaptation, and so acquiring technique appears as adjustment. Repetition, instead of dull drilling, now becomes a trial solution, a trial always rationally prepared. "If you had to open the door and had the wrong key it would only spoil the lock and the key if you tried it a hundred times... "Try different keys until you find one which fits," said Egon Petri.⁴³

This technique has the additional advantages of stimulation the student's musical creativity and reducing the monotony of repetitive practice.

Practice performing

An area of practice that is often neglected by students is that of practicing for the performance itself. Since the student must spend so much time preparing for a performance, he should be careful not to risk spoiling the performance through inattention to what may seem like minor details.

The principal problem of performing is that "conditions during a performance - both outside and within the performer - are markedly different than those prevailing during practice."⁴⁴ Gerle cites a few of the ways in which the conditions may be different:

Instead of the familiar surroundings of your own home, the concert hall appears strangely unfamiliar; the comforting knowledge that a mistake can be corrected and a passage repeated without the penalty of anybody's judgment or disapproval (except your own), gives way to the desire to please the audience. Memory, which works well in the solitude of a studio may be distracted by unexpected sights and occurrences during the performance; the different acoustical properties of the hall, and the way in which we perceive them may cause us to play familiar works in an unfamiliar manner; and, most importantly, our own inner reactions to the excitement of the moment, the heightened emotional and muscular tension of an inspired concert performance, in contrast to the relaxed objectivity of a practice run-through, can transform the established premise of the whole playing mechanism.⁴⁵

⁴³ Kochevitsky, p. 16.

⁴⁴ Gerle, p. 21.

⁴⁵ Gerle, p. 21.

For most relatively inexperienced student performers, almost every aspect of the performance will be unlike the practice situation. Therefore, the student must attempt to foresee as many of the performance conditions as possible and prepare for them carefully.

As a performance approaches and the works to be played are mastered, the student should attempt a full-scale performance, reproducing as closely as possible every detail of the actual performance. This means that the pieces should be played “in tempo and with all musical expression” so that the student can determine “what technical and musical changes or improvements need still to be incorporated.”⁴⁶ Newman suggests doing a cold play-through to start the day because such a performance is “about as handicapped as a nervous one.”⁴⁷ He also suggest bringing in friends to form a small audience; their presence will help approximate actual performance conditions and their comments may be very helpful.

During these practice performances, the student should simulate as many details of the performance as possible. Concert dress should be worn at this time in case it will cause additional problems. Bassoonists must be particularly careful to wear something that will not get caught in the keys or get in the way of the right thumb movements. Men must check their shirt collar for tightness so that the air supply will not be restricted and women should check the effect their shoes, especially high-heels, will have on the position of the instrument.

Stage entrances and exits, tuning, page turns, and bows should all be practiced to prevent unexpected problems. Bassoonists should find places between movements or during rests for getting rid of excess water that has built up in the bocal or tone holes. The student should also practice what he is going to do during long rests so that he does not end up looking uncomfortable during the performance.

During these practice performances the student will discover much about the musical problems that may arise as a result of performance conditions. Certain technical trouble spots may turn out to be more or less difficult depending on their placement in the program. A sense of musical continuity can be developed during these play-throughs enabling the student to make any necessary adjustments to improve the overall musical effect of his pieces. For the bassoonist, endurance is a particularly important facet of the performance that should be monitored; some pieces will become much more difficult when the embouchure is fatigued. Finally, concentration may vary over the course of a performance, so the student must look for places where he can relax a little to save some mental energy for later in the program.

⁴⁶ Gerle, p. 21.

⁴⁷ Newman, p. 158.

Preparing a new piece for performance

The following is a long range strategy for preparing a piece for performance. It bears repeating in its entirety because it incorporates many previously mentioned elements of practicing in a well organized and progressive manner.

The Concours (final exam) is only one month away. How does one prepare?

First read the piano score, vertically as well as horizontally. Solfege (sight sing) the music precisely and with metronome (your indispensable work companion). Analyze the piece: slow movements, fast movements. Find out the tempi, the ritardandi, the accelerandi, the sensitive spots. Now organize your work schedule. Divide your month into three ten-day periods, planning the number of hours per day. Each practice session must not exceed 45 minutes. One must never have sore lips, so in this well-planned session one must use the greatest concentration.

FIRST TEN DAYS: Work slowly on the technical aspects; do not try to play a rapid passage fast even if you feel capable of doing so. Let yourself be taken over by an unconscious automatism regarding the fingers, the brain. Furthermore, even at the slow tempi be extremely respectful of the dynamics and the unity of the piece. If you slow a tempo of 144 mm to the quarter note by half, the values become twice as slow, and this obviously includes the longer values. Take much care of the tone quality; now is the time to have good reeds - at least ten. Place them in a reed case where they will not become warped and dry. Classify them in your order of preference. Play them every day. Think of the attacks, that the tone comes easily, velvety. make real nuances; make them audible to the listener; ppp - pp - mp - mf - f - ff - fff. Make sure that your crescendi and diminuendi are progressive and even, and that the ritardandi and accelerandi are logical (musical) and supple in the rhythm. And don't spend all of your time on your main piece. Find the time to spend a quarter hour daily on long tones and scales.

FROM THE ELEVENTH DAY; Increase the tempo of the rapid passages over the next ten days. If the tempo is marked 144 to the quarter note, start at 72 to the quarter, then 88, 92, 100, 108, 116, 126, 132, 138 to simply achieve 144 to the quarter on the tenth day.

If a technical passage resists your good will, do it in rhythmical patterns (I am a firm believer in this method, tensing and crisping the fingers, but then!)

For the slow movements, think of expression. make each note interesting. Initiate each phrase opening by supporting the air column. Give your interpretation style clearly marked by the nuances. **LIVE** your music.

You should now have 2 or 3 reeds of prime choice; take good care of them. Play them regularly.

ON THE TWENTIETH DAY: Work with less intensity. Do breathing exercises. Review the fast tempi calmly. Practice regularly with your accompanist because you should know your part and that of the piano, equally. Do not count measures when you do not have to play. Listen and make your entry in rhythm and in style. Play your solo piece three times in a row visualizing the exam "situation". Try to see yourself on THE day: see the members of the jury in front of you. this way of going about it may seem much overdone but will bring, I truly believe, surprising results.

You have now found your "solo reed". Leave it on the mouthpiece so that it may find its true place and now "BONNE CHANCE".⁴⁸

⁴⁸ Guy Dancain, "About the Clarinet and About Practicing," Journal of the International Double Reed Society (March 1981):9.

CHAPTER FIVE

TECHNIQUE

The development of technical facility on bassoon may demand more time and effort than any other single practice room activity. This chapter will discuss some of the basic principles of learning motor skills, the benefits and risks of repetition as a practice device, and some specific methods for working out difficult technical passages.

Psychological considerations

George Kochevitsky's *The Art of Piano Playing: A Scientific Approach* contains a wealth of information on the physiological aspects of learning motor skills for musical performance and makes some specific recommendations based on the results of this research. Some background information on this subject will be invaluable to the student as he tries to evaluate his practice methods.

Proprioception

Although the ear provides feedback on the musical results of our efforts, some conscious awareness of our muscle activity, proprioception, is also necessary for developing technical facility:

Proprioceptive sensations and the ability to make the finest inner analysis and synthesis of these sensations are necessary for acquiring motor skill. These motor signals also represent the only material through which our motor centers operate, the basis on which dexterous motor acts are built and developed. Hence, when aiming for the most efficient piano practicing, we have to take care that our proprioceptive sensations are clear and distinct.¹

Kochevitsky states that slow practice is helpful in this regard, but urges the student to also exaggerate his movements during practice. Although this may mean that the finger motions will be different from those during actual performance, it will allow the imprint of the moments to be clear. Therefore he suggests that "while practicing, fingers should be raised to obtain the most distinct sensations from their action, but only as much as is needed for this purpose."² Although bassoon students are taught to keep their fingers as close to the keys as possible

¹ George Kochevitsky, *The Art of Piano Playing; A Scientific Approach* (Princeton, J.J.: Summy-Birchard Music, 1967), p. 24.

² Kochevitsky, p. 25

while playing, occasional use of exaggerated finger movement is likely to be of more benefit than harm. In fact, intentional lifting of the fingers from the keys helps the student become more aware of his fingers in general and may ultimately serve to reduce excessive finger motion.

Excitation and Inhibition

Excitation and inhibition are physiological processes that regulate our muscle activity. Kochevitsky explains that the two must be in a proper balance for muscle activity to be fast and even. Unfortunately, “the excitatory process, first and basic in the formation of conditioned connections, is formed more quickly and easily and is more stable than the process of inhibition, which weakens easily and disappears under certain circumstances.”³ The result is a poor regulation of the muscle contractions and therefore, “tendencies to accelerate the tempo, to rush at some spots and to uneven timing of finger activity.”⁴

To strengthen the inhibitory process, Kochevitsky states that “slow and extremely even playing is indispensable,”⁵ but adds that a method of “stopping” practice may be more effective:

Since the disturbance of this balance shows itself most often in rushing toward the strong beat, toward the end of a passage, it would help train the inhibitory process to make stops or to retard (or both) before these points.

Stopping practice should be used not only to control what you just did and what you are going to do, but to force yourself to detain the impulse for the next movement for as long as you want at any given moment. This is an excellent means for strengthening inhibition. It is especially hard to stop before strong beats.

In connection with stopping practice, I suggest A that at first the stops be for each beat, and later occur less and less often - one stop for every two, three and even four beats. Also, since the nervous system has a tendency toward fixation of any repeated pattern, its flexibility must be developed: stopping points should often be shifted.⁶

³ Kochevitsky, p. 25.

⁴ Kochevitsky, p. 25.

⁵ Kochevitsky, p. 26.

⁶ Kochevitsky, p. 26.

Kochevitsky later warns that as greater speed is attained with a piece, the maintenance of a good correlation between excitatory and inhibitory processes:

. . . appears to be a most difficult task for our nervous system because, while increasing speed, we strengthen excitation and suppress inhibition. Therefore, the increase of tempo while studying a musical composition should proceed gradually, and this increase must often alternate with slow_ and very careful playing. The ability to play evenly and the ability to slow down at any point in a passage serve as criteria of precise and sufficient inhibition.⁷

Although he recommends slow playing to help strengthen control of these processes, Kochevitsky also advises the performer to execute all movements energetically: "It should be emphasized that slow playing does not necessarily_ mean slow motion. The movements must be swift but clearly "separated from each other."⁸

Finally, Kochevitsky recommends another version of stopping practice:

Divide the piece (or passage) into metrical groups, at first short, later embracing longer and longer stretches. Practice the passage with stops, this time on strong beats. The aim is now somewhat different: whereas it was the development of inhibition in the former case, it is now the strengthening of nervous processes.

This recommended variant is of great use in I all cases where we wish to increase tempo. It can j be used when our peripheral apparatus is capable of 'A fast execution, but when we still cannot think fast enough through the entire composition or, at least, through comparatively long sections of it.⁹

Kochevitsky adds that these techniques may be effective not in only during the initial learning of a piece, but also as a means of maintaining a work that has been previously mastered.

Repetition

Although practicing in general may be defined as "that phase of learning in which we acquire motion habits through repetition,"¹⁰ the type of repetition to be discussed here is that

⁷ Kochevitsky, p. 32.

⁸ Kochevitsky, p. 32.

⁹ Kochevitsky, p. 32.

¹⁰ Gyorgy Sandor, On Piano Playing (New York: Schirmer Books, 1982}, p. 183.

consisting of the successive replaying of an isolated section of a piece or exercise. Repetition of this type can be an effective method of learning complex fingering patterns and is advocated by many teachers and performers. However, a few points should be considered before using this technique.

When is Repetitive Practice Appropriate?

The first thing the student should do is determine when this kind of practicing is appropriate: This type of practice will always be justified and necessary to some degree in the following:

(1) The acquiring of some new and perhaps difficult technical resource. (2) A new scale or arpeggio. (3) The correction of a wrong habit, or stubborn fault. The idea is to make the particular correct action required, become, by means of repetition, automatic. In other words, to develop the action or sequence, or whatever it is, to the point where it can be done without concentration. Done without direct thought, so that the mind can be free to pursue other things, such as continuity of reading, interpretation, or expression.¹¹

Much of a college bassoonist's practicing will be concentrated in these areas and repetition will therefore be a significant component of the practicing routine. However, there are times when the student should avoid this type of practice. O'Doherty believes that too often students use excessive repetitive practice to learn a piece which is beyond their technical ability. By taking a piece of music "bar by bar, or section by section, and pounding away hundreds (or perhaps even thousands) of times,"¹² many dangerous consequences may result:

Player's cramp, muscular stiffness, even in some extreme cases, rheumatism in the hands or arms. Secondly, a growing distaste of the music because of the monotony of practice, and over familiarity with each section. (Familiarity breeds contempt.) Thirdly, this kind of practice, if persisted in, can lead to loss of mental control of the fingers.

¹¹Joseph O'Doherty, "The Pros and Cons of Repetitive Practice," Stradivarius 77 (1966):135.

¹²O'Doherty, p. 137.

I would like to explain my third example more fully. Below are three sections of a piece of music, each slightly varied.

The image shows three musical examples, labeled (1), (2), and (3), each consisting of two measures of music in treble clef. Example (1) starts with a eighth-note followed by a sixteenth-note, then a quarter-note, another eighth-note, and a sixteenth-note. Example (2) starts with a quarter-note followed by a eighth-note, then a quarter-note, another eighth-note, and a sixteenth-note. Example (3) starts with a eighth-note followed by a quarter-note, then a eighth-note, another eighth-note, and a sixteenth-note.

It will be noticed that (1), (2) and (3) have one thing in common: they all start the same way. Now suppose someone were to repeat Ex. (1) hundreds or thousands of times, the action of the fingers in playing the bar would become automatic, and the whole progressive action would become fossilized, as it were, in the mind and reflexes. What would subsequently happen? The result would be that if a passage like (2) or (3) were afterwards attempted by the student, unless the strongest concentration were used, he or she would end up by playing (1) in spite of themselves.

Another danger is in the isolation of a section, from the rest of the music, denying the mind the experience of continuity. To put it simply, what you practice most you are inclined to do at most times. If you always start at the same note, and end on the same note, in repetitional practice, you will in all probability be inclined to have hesitations at these two points at subsequent attempts to play the piece as a whole. There will be a halt immediately before the section, and immediately after the section. Why? Because that was the way it was practised.¹³

Gát warns that repetitional practice may also "diminish the intensity of the musical concept"¹⁴ and therefore risk having "the technical work becoming an aim in itself."¹⁵ To avoid this problem, he advises the following practice technique:

¹³ O'Doherty, p. 137.

¹⁴ Jozsef Gát, The Technique of Piano Playing (London: Collet's Holdings Ltd., 1965), p. 99.

The only method of preserving the emotional content from damage is to try with each repetition to penetrate deeper and deeper into the essence of a composition. The repetitions are to be continued only as long as we feel this development of our emotions. If we feel that a composition is of no interest to us any more (sic), if we don't find new possibilities in its interpretation, any further practising will harm not only the performance of that particular composition but even our whole technique. In his Preface to the transcriptions of Paganini's Caprice, Schumann wrote the following: "Even that which is most beautiful will, if it is enjoyed at the inappropriate place or to excess, give rise to indifference and disgust . . ."¹⁶

These statements should not be understood to mean that repetitive practice should never be used, only that it can be harmful if not used judiciously.

Concentration

Without stating it directly, both O'Doherty and Gát imply that one of the fundamental risks of repetitive practice is the loss of concentration. Without full attention directed to the task at hand, practicing is of little benefit:

The thing that must be impressed on the student above all else is the necessity for complete and constant mental alertness during practice. It happens only too often with too many students that the mind wanders to different spheres while the fingers and hands are engaged in mechanical routine-functioning and endless repetitions. Practice of this kind, lacking both direction and control, is a waste of time and effort. Not only does it not achieve what it sets out to do, but also it can sometimes be positively harmful. Mistakes are repeated over and over again, and the ear becomes impervious to faulty sounds.¹⁷

The negative effects of inattentive practice are also mentioned by Kochevitsky:

During one practice period, several conscious well-prepared repetitions of a troublesome spot in a piece can be sufficient. when we repeat that spot too many

¹⁵ Gát, p. 137.

¹⁶ Gát, p. 99.

¹⁷ Ivan Galamian, Principles of Violin Playing and Teaching (Englewood Cliffs, N.J.: Prentice-Hall , 1962), p. 94.

times, our attention is weakened and consequently distracted: unconscious repetition would probably obliterate the positive results we had achieved.¹⁸

His suggestion to consciously prepare each repetition can do much to make a practice session more efficient and profitable.

Distraction Index

Madsen and Geringer, convinced of the importance of attentiveness during practice, sought to determine whether the use of a distraction index during the practice sessions would help a group of college music students improve their concentration. The students in the test group were asked to mark down on a paper each time they were distracted during the practice session and then to resume practicing. The effect this had on the students is summarized here:

It would seem that the intervening variable of the distraction index functioned to increase observed attentiveness. Also, there appeared to be some internalization toward greater on-task for the experimental group. The total number of distractions, however, was identical when compared to the initial level during the reinstatement of the distraction index procedures. The increased attentiveness compared with improved musical performance scores does indicate that the distraction index functioned to increase both attentiveness and performance.

Thus it would appear that the distraction index serves to teach students to discriminate. Obviously, if subjects were totally involved (on-task) in practicing or making music they would not be aware of the “distracting” distraction index. The index not only provided a record of off-task interruptions but probably served as a punisher in that students had to stop practicing, take pencil and mark their distraction. Additionally, the act of marking the distraction serves as a reminder to begin practicing again. Other student comments indicated that “after becoming involved with the index, my concentration was improved,” and “I am better able to concentrate on other subjects now.”¹⁹

The results of the study indicate that such a distraction index could be helpful in improving a student’s ability to sustain his concentration for a greater part of each practice session.

¹⁸ Kochevitsky, p. 28.

¹⁹ Clifford K. Madsen and John Geringer, “The Effect of a Distraction Index on Improving Practice Attentiveness and Musical Performance,” *Council for Research in Music Education* 66 (1981):50.

How Much Repetition?

How much repetition is necessary in a given practice session? The following analysis by Kochevitsky may help the student find an answer to this question:

The necessary number of repetitions and length of period needed for assimilation of a new combination of movements depend on several circumstances. The most important are: (1) the complexity of a given motor form; (2) the type of nervous system of a given individual; (3) the concentration of his attention; (4) the previously established connections.²⁰

Although the student will have little control over the first two points, he can certainly reduce the amount of repetition required to learn a passage by improving the last two. It has already been shown that good concentration is essential for effective practicing; on the fourth point, further explanation is given by Kochevitsky:

This last point represents the foundation upon which all subsequent learning is based. We have in our motor storage countless forms of motion & which in later technical development we often use as half-ready products. These have to be selected and modified in accordance with some particular purpose. On the basis of retained experience and with the help of conscious and subconscious motor activity, we learn and gain proficiency in the most complex technical tasks.²¹

A careful study of a technically troublesome passage will often reveal a pattern of motion that has been previously learned and which could easily be incorporated into the new passage. It is hoped that much of this transfer of skills "will happen at the subconscious level, but in some situations, the previously practiced pattern will be difficult to see in the music and therefore only discovered by a thorough analysis.

Overlearning and Interference

Another consideration that should be made regarding "\ ' the amount of repetition required regards overlearning:

Psychologists agree that one of the best preventatives to forgetting is "overlearning." For this reason, teachers must not stop "drill— "and-practice" sessions simply because a student has seemingly "mastered" a particular fingering pattern, rudiment,

²⁰ Kochevitsky, p. 29.

²¹ Kochevitsky, p. 29.

or fundamental skill. Students must be instructed to continue for longer than they at first think necessary, then periodically review the skill sequence.²²

Miller and Peters continue with a discussion of a related phenomenon called interference which can retard motor skill acquisition:

At first glance it would seem that the greatest enemy of maintenance of performance skills is time, but this is not totally the case.

Although it is true that the longer the period of time between the original learning and the next application of the motor skill, the greater the skill loss, there is another and more influential factor-intervening but closely related motor skills acquisition. If a particular fingering pattern is learned at the keyboard, then the player does absolutely no playing for a week, the motor acuity lost will actually be less than if the player learned a different but closely related finger pattern without continuing review of the first. In the latter case, there would be a certain amount of interference from the newly acquired skill.²³

Since bassoon fingerings are so complex, students of the instrument should be aware of "the necessity for constant brush-up work in motor-skill maintenance."²⁴

Even during the practice session itself, interference may pose a problem. Linda Langeheine believes that the brain needs a period of time without interference to process information from short-term to long-term memory. She recommends using pauses within the practice session to serve as "information-clinchers" and warns that "any form of excitement or a highly emotional experience may disturb the learning process."²⁵ The student must attempt to keep his mind focused on his practicing not only throughout each session, but for a period immediately afterwards as well.

Langeheine offers one final insight that could have a significant effect on how one structures his practice time:

²² Robert F. Miller and G. David Peters, Music Teaching and Learning (New York: Longman, Inc., 1982}, p. 155.

²³ Miller and Peters, p. 155.

²⁴ Miller and Peters, p. 155.

²⁵ Linda Langeheine, "Practicing More Efficiently," The Instrumentalist 34 (1979):8.

If you learn a relatively large segment of a piece (A) and, without taking a break, learn a second segment (B}, you will retain less of the first segment than if you had learned nothing new in the meantime. As a matter of fact, not; only is a portion of the first section lost but also a portion of the second segment.

Even more interference may take place when passages are practiced that are very much alike. Contrasting passages should be practiced after each other. Parallel passages should only be practiced consecutively when a piece is well learned and an added challenge is needed to check for possible memory slips.²⁶

Despite a lack of experimental data on this subject, Langeheine's theory deserves careful consideration. After intense work on a difficult passage, students may find it profitable to take a short pause before resuming practice to give the brain time to process what has been learned so that long-term retention will be improved.

Plateaus

A student may be using efficient practicing procedures, but still encounter a period when no improvement is noticeable. Miller and Peters explain that these plateaus may not really be periods of slow learning:

This tendency to learn in spurts or surges, with the rapid acquisition of part of a skill and then a slowing down of progress, followed by another rapid increase in skill rate, has led to the conventional wisdom that people experience static periods in skill development known as plateaus. Teachers tend to accept these plateaus and to "stop pushing" when a student reaches them, backing off and allowing the student to coast for weeks or months until the next surge occurs. Psychologists have concluded that this is not an appropriate solution, for while progress is not always rapid, consistent practice almost always leads to some skills acquisition. The plateaus are not really flat spots in the learning curve but simply places of less rapid development. To get over these quickly, the teacher is admonished to reject the notion that lack of perceptible improvement is a sign of no improvement.²⁷

Students, too, should heed this advice and not get discouraged by an apparent lack of progress. Provided that the practicing methods being used are sound, continued practice during static periods should eventually produce noticeable improvement.

²⁶ Langeheine, p. 8.

²⁷ Miller and Peters, p. 151.

Difficult Fast Passages

The area in which repetition plays the largest role is in the learning of difficult fast passages. Certain sections of pieces can usually be identified that will require more practice time than others. The remainder of this chapter will discuss the specific techniques that can be used to make the learning of these trouble spots more efficient.

The basic process is outlined here by Kohut:

Another facet of efficient technical drill has to do with learning how to identify specific performance problems (notes, intervals, motifs), isolate them from the larger context of the phrase in question (analysis) and create appropriate drills for solving them on an individual basis.²⁸

Identification of the trouble spots is usually not difficult: Grenier suggests simply penciling in brackets around measures that cannot be played accurately.²⁹ Further analysis may be required to determine exactly what is causing the problem, for example a difficult fingering or embouchure adjustment. Gerle therefore recommends that the student "break down a passage into its components, isolate the problems and concentrate on them separately, and, when corrected, reconstitute and practise them as written."³⁰ By practicing in this manner, the student will not "waste time continuing to practice less difficult portions in too slow a tempo."³¹

After the problem areas in a piece have been isolated, drills need to be designed that will make their practice more efficient. By adding some variety to the repetitions and thereby making them harder in many cases, the student will have to concentrate more. boredom will be reduced and better learning will result. Inventing appropriate drills for a specific problem may require some imagination. but the following techniques may be applied to most difficult finger passages. The order in which they are listed reflects neither their relative value nor the order in which they should be applied; the student should pick and choose according to the demands of each situation.

²⁸ Daniel Kohut, Musical Performance: Learning Theory and Pedagogy, (Englewood Cliffs, New Jersey: Prentice-Hall, 1985), p. 125.

²⁹ Victoria Grenier, "Improving Finger Technique," The Instrumentalist 37 (1983):42.

³⁰ Robert Gerle, The Art of Practising the Violin, (London: Stainer & Bell, 1983), PP. 17-18.

³¹ Larry Combs, "How to Practice Effectively," The Instrumentalist 39 (1985):30.

Grenier suggests this straightforward method:

Practice the difficult passage at a slow metronome marking until you can play it perfectly five times in a row. Then increase the metronome speed by one notch and repeat the process—five times perfectly. Continue this procedure until you reach a metronome speed that is too fast for clean playing. Drop the speed by 10 notches and start again.³²

In a similar drill. Donald Sinta recommends increasing the metronome speed to the maximum attainable for that session. but then suggests continuing the repetitions at gradually decreasing metronome speeds until finishing at a very slow tempo. In this way the session will end with extremely accurate playing and be retained in memory more clearly.³³

The following drills can be applied either separately or in combinations and are based on changes of rhythms. accents. and note groupings. Example 1 is a hypothetical trouble spot and will be used to illustrate these practicing procedures:

Example 1



Although an almost limitless number of rhythmic alterations could be applied to this example, some of the more common ones as conceived by Linda Langeheine are shown in example 2:³⁴

³² Grenier, p. 44.

³³ Interview with Donald Sinta, 1980.

³⁴ Langeheine, p. 9.

Example 2

The image shows three staves of musical notation for a bass clef instrument. Each staff consists of five horizontal lines. The first two staves begin with a single note followed by a bar line, then a series of eighth notes. The third staff begins with a single note followed by a bar line, then a series of sixteenth notes. All staves conclude with a double bar line.

By moving the bar lines to different places in the measure, the rhythmic patterns can be started on new notes as in example 3:³⁵

Example 3

The image shows one staff of musical notation for a bass clef instrument. It begins with a single note followed by a bar line, then a series of eighth notes. The second measure begins with a single note followed by a bar line, then a series of sixteenth notes. The staff concludes with a double bar line.

Accents

In many cases, the new rhythm patterns or bar lines will cause certain notes to receive accents that they normally would not. Similarly, simply changing the natural accents of the original can also be a useful technique:

Temporary simplification of a passage by replacing the prescribed accents with more convenient ones often helps overcome a difficulty. The passage first played in simplified version comes into the fingers easily. Then after smooth execution is

³⁵ Langeheine, p. 9.

achieved, restoring the prescribed metrical groupings will not cause any significant difficulty.³⁶

For instance, Langeheine illustrates this technique with the following example:

Example 4³⁷



Another method of displacing the normal accents is that of regrouping the notes. For example, a triplet grouping can be superimposed over the sixteenths. Applying this to example 1 yields:³⁸

Example 5



The previous accent exercise, example 5, can be used to introduce the concept of changing the given note groupings so that units of any length can be practiced both as written and in different rhythms. New groupings permit the development of entirely new rhythms and accents.

³⁶ Kochevitsky, p. 47.

³⁷ Langeheine, p. 9.

³⁸ Dale S. Jayne, "Scales, Scales, Scales," *The Instrumentalist* 38 (1983):22.

Example 6³⁹



The metronome can also be used creatively in this type of practice:

Use the metronome in syncopation. Accents are redistributed by such syncopations, much as they are by practicing in various rhythms: but here the playing remains even. This technique, though difficult, will solve many technical problems.⁴⁰

Arguments Against Rhythmic Practice

Although a majority of performers and teachers advocate some use of varied rhythms for practicing difficult technical passages, there are those who do not:

The use of a rhythmic formula tends to make practicing mechanical, and when patterns with dotted notes are used, the short notes usually don't receive sufficient time and attention. It is better to practice the notes as they are originally written and engrain the text as you want it engraved in your mind.⁴¹

Overuse of rhythmic practicing may cause musical problems such as unevenness in tone or rhythm in the final rendering of a passage. Therefore, the student must be careful to frequently practice the passage in its original form so that the desired musical intent may be preserved.

³⁹ Grenier, p. 42.

⁴⁰ Warren Hutton, "Creative Organ Practice," Clavier 6 (1967):38.

⁴¹ Sandor, p. 184.

Other Techniques

Leon Russianoff advocates a technique for scale practice which could also be applied to other series of fast notes. Essentially, he suggests that the first two notes of the section be practiced, then the first three, then four, until the entire passage can be played.⁴²

Russianoff also recommends a "pendulum" practicing technique:

It is done by selecting a few notes of a phrase, repeatedly rocking them back and forth until they sound equal and even (until they 'swing'), then going on to round off the phrase.⁴³

Example 7



Although isolating spots in a general manner is easy for most musicians. to pinpoint the exact source of a problem can be quite difficult according to Arthur Weisberg:

We must first know precisely where to concentrate. we must know exactly what is wrong with a particular passage. This is not as easy as it may sound. The difficulties are not apparent when played slowly; or if they are, they are of a different nature. we must listen to the passage played in tempo and be able to tell exactly what is wrong. Our ear must be trained to analyze very quickly because the notes are being played so fast. The ear must hear only the problem notes and not the one before or the one after.⁴⁴

Weisberg discusses in detail the mechanics of finger technique and stresses the importance of focusing the concentration on these trouble points. He offers the following method of practicing for training one's concentration:

⁴² Leon Russianoff, Clarinet Method, 2 vols. (New York: Schirmer Books, 1982), vol. 2, p. 22.

⁴³ Russianoff, p.123.

⁴⁴ Arthur Weisberg, The Art of Wind Playing (New York: Schirmer, 1975); p. 77.

In a passage where three notes in a row are badly executed, we must first find the exact point where the difficulty starts. It is at this point that we must first direct our concentration. It may be necessary first to play the passage many times, at about the right tempo, until we can readily identify the exact spot. When we feel that we know this is it, we then play the passage again, right up to the trouble spot. At this point, the last note is held. During the time that this note is to be held--which should be for several seconds--the concentration is brought to bear on the fingering of that note and. more especially, on the next note. We must get the feeling of what the next fingering is to be. This change is then made as quickly and positively as possible, with the fingers "clicking" into place with all possible definiteness. Only when this concentration has been focused and the player feels sure of the next change, will he then go on and finish the passage. This is to be done several times. with a real pause for regrouping of the thoughts before the passage is tried with no pause (as written).

Example 8 shows what could be a difficult passage, and the way to practice it.

Example 8



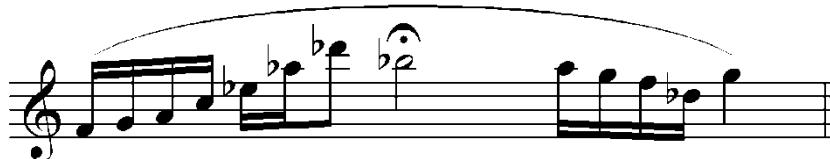
As written



Practiced

After this passage has been practiced in the manner shown, it should then be played straight through, in tempo. At this point. we may be surprised to find that there are now other spots in the passage which we did not notice before that are being played poorly. This could happen as a result of the original difficult passage having covered up some of these less difficult ones of which we were unaware. Another reason for this new difficulty is that. after mastering the first difficult passage, we find the fingers in a - different position. We then have to work on these new difficulties in exactly the same way as on the first. They are taken in order and worked on one at a time. so that the next step may involve playing the passage as shown in example 9.

Example 9



During the practicing of the newer problem, we may find that we are again losing what we have gained on the first one. If that happens—and it is likely — then we must return to the first one again. Such are the problems of conquering a difficult passage.⁴⁵

Negative Practice

Many difficult passages contain certain fingering patterns that do not show improvement with the previously mentioned techniques:

Despite the efforts of instrumentalists in practice to aim for correct fingering repetitions in order to establish proper stimulus patterns for correct fingering in performance, certain passages of music, by virtue of their difficult or unusual nature, pose fingering problems leading to habitual fingering errors which seem to defy correction through traditional positive practice procedures.⁴⁶

Negative practice is a method which may correct these habitual errors by actually practicing them:

It has already been demonstrated that practicing errors in learning certain materials, particularly when muscular movement is involved, will help eliminate the errors, providing one realizes that he is practicing a mistake. This has been known as the beta hypothesis. For example, in learning typewriting one may form the habit of writing teh instead of the. Practicing of this mistake helps eliminate it, providing, of course, one attends to the fact that it is an error he is practicing and that it should be eliminated.⁴⁷

⁴⁵ Weisberg, pp. 78-79.

⁴⁶ J. W. Reitmeyer, "The Application of Negative Practice to the Correction of Habitual Errors in Clarinet Performance" (Doctoral Thesis, Pennsylvania State University, 1972), p. 6.

⁴⁷ Robert W. Lundin, An Objective Psychology of Music (New York: The Ronald Press Company, 1953i, p. 126).

In the first study of negative practice with musicians, Johnson found that "positive practice seemed to be of more value in the type of exercises that this test involved, but the use of negative practice cannot be discounted."⁴⁸ Reitmeyer later performed a similar experiment and concluded that:

Because the data indicate that negative practice is neither more nor less effective than positive practice in correcting and eliminating habitual fingering errors, students and teachers of the clarinet should consider negative practice a useful alternative to the traditional method.⁴⁹

Although more data needs to be taken on this subject, the student may find that negative practice may be beneficial in some situations. Given the difficulty of bassoon fingerings and the number of alternatives available for many notes, bassoonists may find this technique particularly useful for improving their ability to use the correct fingering for a specific passage. Edwin Kruth's suggestion to "do it right--do it wrong--do it right"⁵⁰ would be very suitable for work in this area.

Put Things Back Into Context

The final step in learning difficult fast passages is to reinsert them into the piece:

After having isolated and mastered a specific problem, practise it and ensure that you can play it correctly in the larger context, including the passages immediately preceding and following.

The principle of practising in context extends not only to the technical, but to the musical context as well.⁵¹

Without this last procedure, much of the skill acquired from the drill work may be wasted.

⁴⁸ Gordon Johnson, "Negative Practice on Band Instruments, an Exploratory Study," Journal of Research in Music Education 10 (1962):103.

⁴⁹ Reitmeyer, p. 75.

⁵⁰ Edwin Kruth, "Practice - What Do Us Mean?," The Instrumentalist 26 (1971):53.

⁵¹ Gerle. pp. 19-20.

Summary

Improving technique on bassoon and learning difficult fast passages can be done efficiently by following some basic methods of practice. An understanding of the complex physiological mechanisms that occur during the learning process will help the bassoonist make better judgments about how to practice effectively. In order to improve feedback from the body, slow practice is recommended as well as exaggerated finger movement. "Stopping" practice is suggested for maintaining a balance between excitation and inhibition, the processes that control the evenness of execution.

Repetition is a commonly used technique that, when used properly, can accelerate the learning process significantly. It is most effective for drilling difficult technical passages, but should not be overused in an attempt to learn pieces beyond the student's current abilities. The amount of repetition required to learn a passage will depend on a number of factors. To minimize this amount, the student is urged to maintain good concentration and to look for familiar patterns within the music to which he can apply previously practiced finger movements. Also, overlearning of difficult spots is recommended. Because of the problem of interference, the student should be careful to practice with as uncluttered a mind as possible and should pause briefly after working on trouble spots to allow the brain time to process the information. Also, difficult patterns of a similar nature should not be practiced too close to one another.

Difficult passages in pieces should be isolated and practiced independently for more efficient practice. Drill work on these should include a number of alterations in rhythm, accent, and note groupings. For the improvement of habitual fingering errors, negative practice may be an additional technique of some value.

CHAPTER SIX

INTONATION

A survey taken in 1971 showed that a majority of American bassoonists considered intonation to be second only to reeds as the most problematic aspect of playing the instrument.¹ In addition, studies have shown that "listener preference for intonation supersede preference for tone quality."² Therefore, intonation should be a primary concern of the student in the practice room. However, little has been written about how to approach the practicing of this skill. This chapter will present a brief overview of the mechanics of playing in tune and will examine some methods for practicing intonation.

Playing in Tune

Due to the imperfect nature of the bassoon, almost every note on the instrument requires some degree of embouchure and/or tongue-oral cavity adjustment to be played in tune. These adjustments are compounded by changes in dynamics, tempo, harmonic setting, and fatigue. Therefore, playing in tune on the bassoon is a complex process requiring instantaneous and precise reactions in a variety of situations.

Kochevitsky's scheme of see--hear inwardly—move— hear actually—control, provides a good model for the process of playing in tune. When this sequence is followed the player reads the note on the page and forms an aural impression in his mind of the proper pitch. This inward hearing then supplies a stimulus for the embouchure and tongue to adjust so that the note will be initiated at the correct pitch level. Upon hearing the note, the performer determines whether it is in tune and then makes any necessary corrections.

The first steps of the scheme, see--hear inwardly—move, are critical for beginning notes in tune:

The player must know the pitch level he is attempting to achieve. He must "hear the tone" before he plays it. To play an instrument without this concept is similar to pointing a gun in the air and firing aimlessly with no particular target in mind.³

¹ Ronald J. Klimko, Bassoon Performance Practices and Teaching in the United States and Canada (Moscow, Idaho: University of Idaho School of Music Publications, 1974), p. 41.

² Robert A. Duke, "Wind Instrumentalists' Intonational Performance of Selected Musical Intervals," (Ph.D. Dissertation, Florida State University, 1983), p. 1.

³ George Wilson. "Bassoon intonation: No Mystery!" The Instrumentalist 18 (1964):65.

Since each note requires a different setting of the embouchure and tongue, the attack of each note must be preceded by some degree of physical preparation. For these preparatory responses to be accurate, the student must form strong associations between the pitch and the embouchure/tongue setting necessary to produce it.

If a student simply follows the intonational tendencies of the instrument and plays each note in a way that "feels" correct without recognizing whether the note is actually in tune, he will not only learn incorrect muscular responses for each pitch, but will also begin to accept the out-of-tune playing as correct. If at a later time the student becomes aware of his tuning inconsistencies, he may find that many notes will "feel", and often even sound, incorrect when actually played in tune. Initiating notes in tune on bassoon is therefore a matter of learning both the intonational tendencies of each note and the corresponding embouchure/tongue response that will result in correct placement of the pitch.

The final steps of Kochevitsky's model, hear actually--control, are important for perceiving when intonation is correct and making the necessary adjustments. Galamian's admonition that the student must learn to listen to himself objectively is especially appropriate to the area of intonation where particularly acute sensitivity is required to detect slight aberrations in pitch. The close relationship between a pitch and the muscular feelings associated with it makes truly objective listening to intonation difficult.

Practicing Intonation

Three basic techniques are cited for improving intonation: listening to the intonational tendencies in interval, scale, or chord practice; vocalizing; and using electronic tuning devices. Since the experimental research that has studied these techniques suggests that no one method is particularly more effective than another, each will be examined for its potential benefits. Although they will be treated separately, these techniques can also be used in combination.

Scales and Chords

Scales and arpeggios are probably the most familiar patterns in the ears of students and therefore provide a good starting point for intonation practice: "when playing alone, there is no better way to hear yourself play in tune than in scales."⁴ After reviewing research on the relationship of tuning to the scales of a given culture, Burns and Ward concluded that "the intonation of individual musicians is primarily a function of their acquired ability to

⁴ Norman Dearborn, "Practicing Scales," *The Instrumentalist* (1965), p. 20.

reproduce the learned interval categories of these scales.⁵ While more complex intervals may be difficult to hear accurately at first, the major and minor seconds of the major scale are easy for most students to perceive.

Scales are too often practiced solely to learn fingering patterns without sufficient attention being paid to the pitch of the sounds produced. Scale practice should start slowly with attention focused on the tuning of each interval. Before each note is played, the student should try to anticipate the correct pitch level for the next note, attempt to play it in tune, and listen carefully to determine whether he has been successful. As the student performs scales in this manner, he should begin to make a record of which notes tend to be sharp and which flat. A knowledge of the tendencies for each note will increase the probabilities that the anticipatory responses will be correct.

Simple melodies that outline basic harmonic progressions can also be useful for developing better intonation. Theodor Podnos has developed a system of teaching intonation to violin players which requires an awareness of each note's position in the harmonic setting:

While playing a marching melody such as the following,



say to yourself, 'This is a Tonic chord, this is a Dominant chord.' The second time you play the first beats of these measures, say, "This note is the Tonic's root: this the Dominant's third: this the Dominant's fifth.' During the final playing, realize that the Tonic's root requires no alteration, whereas the Dominant's third does —that of sharpening: the third measure contains the Dominant's fifth (no alteration), and the last measure has the Tonic's root (no alteration). Diligent practice will make it possible to complete all of these analyses simultaneously. Although taxing, such mental work gradually becomes second nature.⁶

Whether the bassoonist decides to raise the third in dominant chords is not the issue here: the process of listening to each pitch within a harmonic framework will do much to improve one's intonation:

⁵ Edward Burns and Dixon Ward, "Intervals, Scales, and Tuning," The Psychology of Music, ed. Diana Deutsch (New York: Academic Press, 1982), p. 262.

⁶ Theodor Podnos, Intonation for Strings, Winds, and Singers (Metuchen, N.J.: The Scarecrow Press, ISBI), p. B0.

Your thorough analysis of each note has accomplished two things. First, like dissecting an insect under a microscope, you have analyzed intonation to find out 'what makes it tick.' In this manner, you have diagnosed the nucleus of many tuning problems.⁷

After practicing scales and simple melodies in this manner, the student can begin to apply these concepts to performance music. Recognition of scale and harmonic patterns in the music and association of these with previous tuning practice will help the student correct or prevent tuning problems.

Vocalization

Many musicians have advocated singing as a means to better intonation. The act of producing each pitch vocally helps the student develop his inner hearing and therefore should improve the connection between his ear and embouchure muscles. Also, singing allows the student to produce the pitches without having to overcome the tuning deficiencies of the instrument. If the vocalized pitches are correct, the student will then establish an aural model in his ear to which he can compare the pitches he produces on the instrument.

Only one study was found that tested this technique with college instrumentalists. The results indicated that for the experimental group, "there were no significant differences between exercises which were performed instrumentally and exercises which were vocalized prior to instrumental performance."⁸ However, "the cent deviation of woodwind performers decreased slightly in those exercises vocalized prior to instrumental performance."⁹ Although the need for further research is indicated, the use of vocalization as a means of improving intonation would appear to be a worthwhile technique for the bassoonist.

Tuners

Perhaps the most popular method of improving intonation is to use an electronic tuner which indicates the degree of flatness or sharpness of a note by means of a visual display. The tuner can be used as a reference tool at any time during the practice session. While performing warm-up exercises such as long tones, the tuner is useful for establishing a

⁷ Podnos, p. 89.

⁸ Duke, p. 111.

⁹ Duke, p. 111.

stable pitch level for the entire practice session. For the remainder of the session, it is valuable for checking problem notes, tuning intervals and for reinforcing the correct aural/physical relationships that are being established.

Unfortunately, many students deceive themselves into the belief that they are improving their intonation by simply watching the tuner's meter despite never actually engaging their ears in the process. Although intonation may indeed improve somewhat because of the muscle memory that is formed, the ear's critical role in the process is reduced by practicing in this manner. Therefore, the following approach to its use is advocated. First, the pitch in question should always be arrived at and sustained before the tuner is referenced. Otherwise, the mind may subconsciously react to the Visual indication of the meter, make adjustments to correct the pitch, and thus circumvent the engagement of the ear in the process. The performer should therefore listen carefully to the sound he is producing before viewing the tuner so that an aural rather than a visual association will be established.

The tuner's most important function is to provide a reference point for checking the instrument and reed's overall tuning level. To effectively perform this operation, the student should warm up briefly and then play a note, such as small c, or one that is usually in tune at about a mezzoforte dynamic. If the tuner shows a deviation from the desired tuning level, a change of reed or bocal is indicated. Practicing on flat or sharp equipment will cause incorrect muscular responses to be learned during the ensuing practice session.

When working on intonation in performance music, the notes being checked should be approached in exactly the way they will be performed, with all dynamic and tempo considerations included:

It is one thing to practise a passage for intonation, important as that is; it is quite another to perform it with all the expression and drama it deserves, and which transforms the player's technical approach as well.¹⁰

The number of variables that can influence the pitch tendency of a note are too numerous to mention; for this reason, each situation must be worked out with as many of the actual performance characteristics as possible.

If one note on the instrument needs special attention, then the tuner should be set to that pitch (many tuners automatically adjust to the sounding pitch) and referenced each time the note is played during a passage. When the note registers out-of-tune, the student should replay the passage and make adjustments until the note can be consistently played

¹⁰ Robert Gerle, The Art of Practising the Violin (London: Steiner & Bell, 1983), p. 20.

in tune. In this manner, the student will discover what the note's tuning tendencies are in a variety of situations.

Tone Generators

Another method of practicing intonation requires a tone generating device such as an electronic keyboard or a tuner that will produce a range of tones. A well-tuned piano can also be of some use, but the sustaining capabilities of the electronic instruments offer many advantages.

The ability to play in tune with oneself is important, but in ensemble situations, the performer must also be able to adjust quickly to the pitch of others. Tone generators afford the student an opportunity to develop this skill in the practice room. In addition, to match a pitch, the ear alone must make the pitch discriminations without any visual aid. Therefore, this technique is likely to improve one's aural pitch awareness more effectively than meter-watching.

The most straightforward method of using a reference tone is to simply practice playing unisons. Bending the pitch above and below the tone while listening carefully will help develop sensitivity and quick response time to imperfect unisons. In the same manner, tuning larger intervals such as octaves, perfect fifths, and major thirds can be equally beneficial.

For improving intonation within pieces, a reference tone can be used in a variety of ways. First, select a pitch that needs attention in a passage, set the tone on it, and play the passage, stopping each time a unison is reached. If necessary, adjust the pitch until it is in tune and note in which direction the correction was made. Repeat the process until the pitch can be played consistently in tune without adjustment.

Used in conjunction with harmonic analysis, the tone generator can increase awareness of the tuning of triads and other basic structural harmonies. If a passage shows a predominance of a particular triad, the tone can be set on the triad's root and the pitches then tuned relative to this. This technique can increase the student's awareness of the tonal relationships that are present in a work and subsequently help solidify the tuning of many passages.

Other scale degrees can also be used for a reference pitch so that the tuning of notes may be examined in more than one setting. If the fifth is chosen, for example, then the tonic can be tuned in the new context of a perfect fifth rather than as a unison. Setting the reference tone in different places can sensitize the ear to intervalic relationships.

For those students who do not have access to a tone- generating tuner, the following suggestion may prove useful:

Another method of encouraging proper embouchure effort is the use of a tuning bar pitched in A. Choose a bar which has a good, free resonance and keep it in the practice room (this method works best in a small room).

Not only should the student use the bar for tuning, but he should also listen for the bar to ring every time an A is played. Whenever an A is played in tune, the bar will ring sympathetically; but if an A is not played in tune, the bar will remain quiet.

This practice will encourage a stable pitch rather than one that constantly rises during the rehearsal.¹¹

This technique, of course, only checks a single note on the instrument, but the tuning of this note will probably represent the general tuning tendency of the player throughout the range of the instrument. Given that bassoonists have a tendency towards sharpness as they play, this technique could serve as a useful reminder to keep the pitch from rising.

¹¹ Ronald Tyree, "Intonation Problems in Bassoon Playing," The School Musician 49 (1977):18.

CHAPTER SEVEN

TONGUING

Great demands are often made of the bassoonist in the area of articulation. To be prepared for any situation that may arise, the performer must develop speed, endurance, and control of his tongue at all tempos. Although these qualities are interrelated, they can and should be practiced independently. The following practicing methods focus on improvement of the tongue itself only; coordination of the tongue with the fingers is a separate problem that can be developed through the use of the techniques described in earlier chapters.

Speed

The first area of concern for most students is that of tongue speed. The ability to articulate quickly will in part be determined by the actual mechanics of the student's tonguing technique and by the natural quickness of the tongue, but assuming that the student's fundamental approach is sound, he should be able to increase his tongue speed through practice:

The key to the development of rapid tonguing technique is virtually always enough practice and repetition. Speed is something acquired over the course of a prolonged series of sessions. As with any physical activity, rapid tonguing may be learned and developed.¹

Arthur Weisberg discusses the action of the tongue in *The Art of Wind Playing* and makes many practical suggestions for improving speed and control. Tongue speed, he says, is dependent on how far the tongue moves on each stroke and on how long it pauses at each change of direction. In the production of short, fast notes, "one of the main difficulties involves the transition from backward motion to forward motion. Ideally, there should be no pause whatsoever."² For this reason, Weisberg advocates the practicing of short, staccato notes to help reduce the transition time for the tongue:

¹ David Michael Pierce, "The Bassoon in the woodwind Quintet: Performance and Technical Demands and Their Solutions" {D.M.A. Dissertation, University of Illinois at Urbana-Champaign, 1986), p. 35.

² Arthur Weisberg, *The Art of Wind Playing* (New York: Schirmer, 1975), p. 24.

3 Weisberg, p. 25.

This is why it is of the utmost importance to develop as short notes as possible, because it is the ultimate shortness of the notes that will determine how rapid a staccato a player is to have. No one can tongue faster than the shortest note that he can play.³

Based on this theory, Weisberg recommends practicing single-tonguing by stopping each note as quickly as possible with the tongue in the following manner:

Example 1



As we can see, the exercise is to be combined with the playing of long tones. This is absolutely essential because the short notes must be exactly like the long tone in quality and in pitch. Combining them in the same exercise will allow us to compare them constantly.⁴

In the beginning, the student may have to play the long tone frequently until he can create a good sound more consistently in his staccato notes. The long tone will serve as a reference point and a reminder of what the tone should sound like. This exercise should be practiced on the notes of the major scale in a comfortable tessitura before advancing into the extremes of register.

In the practicing of staccato notes the metronome speed should be ‘gradually increased until we reach a speed of $J = 100$.⁵ At this point. Weisberg recommends using the following variation of Example 1:

Example 2



³ Weisberg, p. 25.

⁴ Weisberg, p. 53

⁵ Weisberg, pp. 53-54.

As the tempo is increased, the sixteenths will become so close together that the pause of the tongue at the front position will be almost eliminated:

As the player practices staccato, he gradually accelerates the notes until at a particular speed the tongue will be in continuous motion. This speed is the approximate speed of sixteenth notes at a metronome setting of $J = 120$.⁶ The student should continue to increase the metronome speed until a maximum is reached for clean articulation of the sixteenths, with consistent practice over the course of weeks, this maximum speed can be increased.

A much different approach to tonguing practice is advocated by Herman Burnette. Instead of beginning with the shortest staccato notes possible, the player is urged to start with a legato articulation and gradually increase the speed until the notes become fast and short.

Apparently, it is not generally realized that when practising rapid tonguing the vital thing is to make the tongue move quickly, and the worst way of doing this is to make the notes staccato. The concept of staccato playing produces too negative an approach. The idea should always be of a continuous process which can only be perpetuated when we play each note right to its finish. If we use this method, the notes are bound to be shorter when the tempo increases, and there is no discernible difference between staccato and non-staccato if the notes are very quick.⁷

This technique is particularly useful for helping the student isolate the tongue's motion so that he can reduce the jaw movement that often accompanies staccato playing on bassoon.

Control and Endurance

In addition to tongue speed, control of the tongue at various tempos and the ability to sustain tonguing over extended passages are also essential skills for the bassoonist. The previous exercises will contribute somewhat to development in these areas, but if particular weaknesses are discovered in either of these aspects of tonguing, the following techniques may prove useful.

⁶ Weisberg. p. 25.

⁷ Rodney Bass, "The Art of Practising: Part 3, Woodwind," *Music in Education* 36 (1972):72.

In the development of tongue speed, students may find that they can control their tonguing at a range of slow and fast tempos, but encounter a loss of control at some mid-range tempos. According to Burnette:

The explanation of this phenomenon lies in the fact that the tongue is a muscular organ and therefore capable of reflex as well as controlled responses. When there is a void between the two, the result is mid-tempo articulation difficulties.⁸

Burnette's suggestion for ameliorating this deficiency begins with determining exactly where the cutoff points are for both controlled and reflex tonguing:

To locate the cutoff point of the controlled tonguing, set the metronome at a slow speed so as to easily allow the player to tongue a series of four sixteenth-notes per beat. For this, select one note in a comfortable register of the instrument. Then increase the metronome speed one notch at a time until it becomes difficult for the tongue to articulate the series of notes evenly. This controlled-tonguing cutoff point is the fastest speed at which the notes can be evenly tongued. To find the cutoff point of the reflex tonguing, place the metronome at a much faster speed, one at which the tongue is operating at its maximum reflex capability. Then decrease the metronome speed one notch at a time until the four notes per beat are again difficult to articulate evenly: this is the reflex-tonguing cutoff point. These two cutoff points establish present individual limitations and progress can be monitored.⁹

The exercises that Burnette suggests for eliminating these cutoff points and gaining control of the tongue at all tempos are similar to ones used by L. Hugh Cooper at the University of Michigan. The following is a combination of both:

⁸ Herman Burnette. "Therapy for Tired Tongues." The Instrumentalist 33 (1978):53.

⁹ Burnette. pp. 53-54.

These patterns are based on an additive principle in which the tongue is forced to make progressively more tongue strokes between rest periods. The initial pattern requires the tongue to make two strokes before resting for a dotted eighth note. Each successive pattern adds one stroke until the tongue is in continuous motion on steady sixteenth notes.

Burnette suggests performing the first pattern over the entire range of the instrument at increasing metronome speeds until it has been mastered. Since bassoonists may find articulation in the extreme registers far more difficult at faster tempos, they should not expect to have the same degree of success in these ranges. Once the first pattern has been mastered, each successive one, should be practiced until continuous sixteenth notes can be played at all tempos.

These patterns can also be used effectively for developing more tongue endurance at fast tempos. The student should choose a tempo near the tongue's maximum speed and play each pattern at this tempo until a series of tongue strokes is reached that is too long for the tongue's endurance. Repetition of the patterns just prior to this cutoff point will help build endurance so that in later sessions the tongue will be able to perform longer and longer series of strokes at rapid tempos.

Double-tonguing

Even if developed to its maximum potential, single-tonguing may not be rapid enough to handle every situation that arises. Although it is more difficult to learn than single-tonguing, double-tonguing is frequently the only solution to playing certain passages:

The ability to use the tongue varies from person to person. There will always be differences in the speed attained by different people; but with practice, everyone can learn to tongue at a satisfactory speed. Very fast single-tonguing is not attainable by

all players. However, double-tonguing is, and even a moderately fast double-tongue is faster than the fastest single-tongue.¹⁰

Although there are a number of approaches to teaching the mechanics of double-tonguing, they all require the player to articulate notes alternately from the front and the back of the tongue using syllable combinations such as ta—ka or da—ga. The great difficulty for the bassoonist, regardless of the syllable used, is the ability to produce a clean and controlled attack from the back part of the tongue. Therefore, beginning practicing efforts must be directed at improving the quality of the ka attack. Weisberg suggests proceeding in the following manner:

As we said before, one of the main concerns in double-tonguing is to match the lengths of the ta and ka. This is to be done very slowly at first, as in Example 4.

Example 4



Over a period of months the speed is to be increased. When it has become somewhat stabilized, it will be helpful to start the exercise with the ka rather than the ta. This will help make the ka stronger, since it is on the downbeat. Another variation is to practice only kas: ka(k)---ka(k)---ka(k)---ka(k). When the speed has advanced to about $J = 120$, the sixteenth notes should be put into a scale, starting with tas and kas.¹¹

The tonguing exercise presented earlier, example 3, is also a good one to use for increasing double-tonguing speed. This exercise should be practiced using both ta and ka for the initial attacks to help improve control and flexibility of the double-tongue.

Only when the double-tongue can be performed consistently on single notes should coordination with the fingers be attempted. Since each note in a passage will require a slightly different embouchure/throat setting, the feeling of the ka syllable will vary from

¹⁰ Weisberg, p. 18.

¹¹ Weisberg, pp. 54-55.

note to note. Successful double-tonguing of fast passages will require careful slow practice to learn the proper setting for each note. As tempo is increased, however, the player's attention must focus on the problem of coordinating the tongue/embouchure/throat activity with the fingers. Therefore, the bassoonist must develop absolute control of the tone production mechanism when double-tonguing before attempting changing note patterns.

CHAPTER EIGHT

SUMMARY AND CONCLUSIONS

The basic tenet of this treatise is that the time a bassoonist spends practicing should be as efficient and effective as possible. Many techniques for improving learning during practice sessions have been advocated by musicians over the years, but no compilation of these methods exists. Therefore, this paper has attempted to assemble as many principles of effective practicing as possible and apply them to learning the bassoon.

Questions such as how long, when, and where to practice, need to be addressed by the bassoonist as he develops a practicing routine that is best for him. Results of studies and the experience of teachers indicate that although the amount of total time spent practicing may not be the most significant factor in a bassoonist's development, about one to four hours of quality practice per day is the recommended average for an aspiring instrumentalist. These hours should be distributed in sessions lasting between 15 and 45 minutes over the course of the day and not performed in a single sitting. Most teachers advise against practicing in excess of four hours in a day because of the problems that may arise from physical and mental fatigue. Ultimately, since every student is different, the student must closely monitor his ability to concentrate for long periods of time and determine for himself what the time limits for his practicing should be.

The bassoonist should find times to practice when his mind is fresh and alert and should adhere to a regular schedule if possible. The place where the student practices should be chosen carefully, especially when trying out new reeds. An acoustically dead or overly live room may result in a false concept of one's actual tone quality and projection, whenever possible, bassoonists should practice in the locations where they will actually be performing.

Once in the practice room, the bassoonist must make intelligent decisions regarding how much time to spend on each segment of his material. Long- and short-term goals must be established so that the work done in practice can be well-focused and meaningful, and so that progress towards these goals may be measured accurately. Dividing the practice schedule into the categories of warm-up, building time, interpreting time, and performing time can be a useful step towards developing a well—balanced practice routine. Since students have a tendency to incorrectly estimate how their practice time is actually being spent, a written record that charts goals and progress is recommended.

One of the greatest obstacles to effective practicing is the inability to provide accurate feedback on one's own performance. The ability to hear oneself objectively can be developed over time, but the process can be accelerated by the use of a tape recorder.

Mental practice is a technique which offers many advantages to the student. Through the technique of visualization, the student can imagine performance conditions and practice controlling problems of anxiety. Works that are difficult from a technical standpoint can be performed error-free in the mind, which allows the student to get a better overall conception of the musical design of the piece. In addition, motor skills themselves can be effectively improved through mental rehearsal. Therefore, it is strongly suggested that mental practice become a regular part of the practice routine.

Slow playing is one of the most basic methods of efficient practice because it helps prevent the student from practicing mistakes. This technique may be used to work on both technical and musical problems with a high degree of effectiveness. Various combinations of slow, fast, and uneven practice may be used at different stages in the learning of a piece and to solve specific problems.

In the working out of technically difficult passages, the bassoonist is urged to also add all of the musical nuances that will be part of the final performance. Passages that have been practiced in a purely mechanical way will frequently break down when the musical expression is added. In addition, the solution to problems of finger coordination will oftentimes lie in the musical interpretation.

Students should think through all of the details of the actual performance and practice accordingly. Such things as tuning, cleaning the instrument; and acknowledging the audience should be practiced in the manner in which they will be performed. Complete run-throughs of the piece or program should be performed in concert dress so that potential problems can be identified and corrected.

Because of the complexity of the fingering patterns on their instrument, bassoonists must spend a large proportion of their time working on the technical problems of their music. Physiological evidence suggests that slow playing, exaggerated finger movements, and "stopping" practice may help the student overcome technical difficulties more rapidly. Another practice method that can save time is to isolate the most difficult passages and practice them independently. If this method is used; the student should prepare each repetition thoughtfully and be careful to monitor his concentration level to avoid mindless repetitions that could lead to sloppy or mechanical playing. Also, after working intensely on a difficult passage, the student should pause briefly to let the brain process the information from short-term to long-term memory.

Techniques such as variations in the rhythm, accents, and note groupings can be helpful for working on trouble spots. Habitual fingering errors may be changed by negative practice.

Intonation is a particularly problematic aspect of bassoon performance that deserves attention in the practice room. Three basic techniques are recommended for improving intonation: listening to the intonational tendencies of the instrument during interval, scale

and arpeggio practice; vocalizing; and using an electronic tuning device. The first method is based on the student's ability to distinguish tuning problems in major scales and arpeggios. These utilize the most basic intervals and should be the easiest for the student to hear. Vocalization is a traditional method for improving intonation and is still recommended. Good intonation requires the ability to mentally anticipate the sound of each pitch and singing can help improve this skill. Finally, electronic tuners have become perhaps the most popular method of checking intonation, but many students use these devices inefficiently. The student is urged to engage the ear at all times and to rely on the visual indication of the meter only in conjunction with careful listening.

Tonguing is a physical process that must be exercised on bassoon independent of the fingers using principles similar to athletic training. The two main components of tonguing are speed and endurance, and each may be practiced separately. Two opposing methods for increasing speed have been advanced: one advocates playing the shortest staccato notes possible and the other suggests using legato articulation. Endurance can be increased by tonguing for long periods of time at a moderate tempo or by using various tonguing exercises at fast tempos. Double-tonguing is a technique that some bassoonists may need to master and can be practiced in much the same manner as single tonguing, with particular attention paid to improving the "ka" syllable.

Many techniques have been advocated for efficient practicing, many of which are somewhat contradictory. Therefore, each student must experiment with these methods to find ones which suit his playing and temperament. Perhaps more importantly, the student should evaluate his practice routine regularly and be thoughtful and creative in his approach to new musical problems while applying the basic principles outlined in this treatise.

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