SOME SUGGESTED PROCEDURES FOR ESTABLISHING AND MAINTAINING
A SUCCESSFUL STRING PROGRAM IN THE ELEMENTARY SCHOOLS

by
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According to Vinaver Haller, there is a specific need for \[ \text{source} \].

Reginald Stewart, "The Orchestra in Education," *Orchestra\text{\textline}world*, XX (September, 1951), 7, 13.

CHAPTER I

THE PROBLEM

Need for the Study. There is a definite shortage of competent string players today. In an article published in *Etude* magazine, Reginald Stewart discusses two reasons which are responsible for this shortage.

Too little attention has been given to the teaching of stringed instruments. For several years there has been a "vanishing" orchestra in the general program of the public schools. It may be safely stated that this is due to two situations. First, the overemphasis on the band and underemphasis on the orchestra and, second, the lack of ability of the average instrumental teacher to promote a sound teaching program for orchestral instruments. There is a great scarcity of string teachers prepared to do class instruction.

A few years later John W. Molnar published his ideas regarding the shortage of competent string players.

Much has been written and said during the last few years concerning the shortage of string players in the schools, and the paucity of orchestras in the instrumental programs of high schools. Among the reasons for this lack of strings is the tremendous growth of bands. Many prospective string players have joined the bands' ranks because of the pageantry, the appeal of the quasi-military organization and activities, the uniforms, etc.  

According to Gilbert Waller, there is a specific need

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for viola, cello, and string bass players in the schools. Waller feels that the shortage of string players on these particular instruments is due primarily to four basic factors, these being: lack of provision in school policy for the purchase of these instruments; instruction offered for violin students only; lack of adequately trained teachers; and, the parent's inability or desire to buy large instruments.4

Among the numerous other reasons cited by authorities for the lack of competent string players are (1) inferior quality instruments, (2) an exaggerated and false concept of difficulty of mastery, (3) the desire for quick results, (4) the promotion of sales by band instrument companies, (5) competitive extracurricular activities, (6) young students' desire to join the organization to which their friends belong, (7) the idea that an orchestra costs more to maintain than a band, and (8) the community's preference for a band over an orchestra.

**Purpose of the Study.** This study is an attempt to discover ways in which the string program may be sufficiently improved to make the shortage of adequate string players less critical, as well as to suggest teaching methods and

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4Ibid.
procedures to be followed by teachers in establishing and maintaining a successful string program. It is hoped that these suggested procedures will help those teachers not specifically trained in string instruction to better understand and meet the problems involved.

Scope of the Study. This study is limited to the organization of the string program and suggested procedures dealing with the instruction only as they relate to beginning string students.

Method of Investigation. The preparation of this paper is based upon research, string clinic lectures, and interviews with string players.

Mark A. Simley, in his book Musical Band and Orchestra Administration, discusses the publicity values derived from performing for community affairs.

Playing for community affairs is a privilege as well as an obligation, as long as it does not become too burdensome. All the civic clubs are usually interested in having the band, orchestra, a soloist,
CHAPTER II

ORGANIZING THE STRING PROGRAM

Promoting the String Program. Promotion of the string program can be accomplished in innumerable ways, limited only by a teacher's ingenuity and diligence. In an article written for Etude magazine, Henri Temianka discusses one method in which the teacher can supply "glamour and excitement" to the string program through co-operation with a concert artist.

An artist of standing who visits a community for the purpose of giving a concert, is usually the object of a good deal of gracious hospitality and publicity in connection with the event. If, instead of directing all this publicity towards himself, the artist (can be persuaded to show) genuine interest in the public school string program, he can channel much of the public interest towards that program and render a considerable public service. To begin with, he should call attention to the string program in his press and radio interviews. This will have a strong psychological effect. For the inescapable meaning to be inferred is that the artist regards this program as so highly important, that he wishes to be linked and associated with it. And the immediate reaction of his local readers and listening audience is bound to be that it is important to them, also. ¹

Mark H. Hindsley, in his book School Band and Orchestra Administration, discusses the publicity values derived from performing for community affairs.

or an ensemble appear on their programs occasionally. Such an appearance adds to their program, gives valuable experience to the soloist or organization playing, and keeps the instrumental music department in the public eye.  

Hindsley also points out the advantages of speaking before various groups about the music program.

In addition to providing musical numbers for civic programs the director should avail himself of all opportunities to speak to various clubs on his instrumental music work. The creation of community interest is essential for the perpetuation of the work. If the public knows what is being done in the music education program and understands the values to be derived from such a program, it cannot help being interested, and interest brings support, both moral and financial.

In many areas school officials are reluctant to promote string instruction if it has not previously been included in the music program. Reasons given for this attitude are usually (1) the band is quicker and easier to develop to the performance level, or (2) an orchestra costs too much. John W. Molnar, in an article written for The Instrumentalist magazine, answers the first objection.

It is claimed that a band is developed much quicker and easier than an orchestra. This is not true, except perhaps tonally in the early stages of development.

Regarding the expense of the orchestra, Molnar mentions the lack of necessity for uniforms, a major item in the band's budget. At most, capes are purchased for the

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2Mark H. Hindsley, School Band and Orchestra Administration, (New York: Boosey & Hawkes, Inc., 1940), p. 94.

3Ibid.

4Molnar, op. cit., p. 37.

5Ibid.
orchestra, and those at far below the cost of a full band uniform. Based on the findings of Thomas A. Wasson, the difference between the cost of equipping a band and equipping an orchestra is almost sufficient to pay a teacher's salary. The fact that string instruments do not wear out the way wind instruments do must be considered also.

String instrument companies can do much to promote string programs, just as wind instrument companies have boosted the interest in band programs. Literature dealing with methods of promotion is readily available through manufacturers and dealers of string instruments.

Motivating Students. The prestige accorded to the school orchestra motivates the students of that school to join the organization. Temianaka suggests association with concert artists to help insure the status of the group. In Temianaka's words,

The visiting artist-teacher can do much. Within the time limits of his stay in a community, he can offer to visit one or more schools, and, if he is a string player, attend string rehearsals, accept invitations to talk to the students, conduct a rehearsal. To the students this is of course a tremendous stimulus, lifting them out of their everyday routine and bringing them into personal contact with the visitor to their town.

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7 Temianaka, loc. cit.
The press can be invited to report on these get-togethers by word and picture, and the students, finding themselves temporarily the center of public attention, publicly linked with their teacher and the artist, will begin to find as much or more glamour in string playing as in any other organization.  

Arthur C. Hills, in an article written for the School Musician magazine, suggests several means for further emphasizing the school string program. He recommends that the orchestra be given a vital role in the life of the school and that the high calibre of its contribution be emphasized. Hills declares that nothing attracts prospective students to the study of orchestral instruments so much as the creation of the idea that the orchestra is an important and necessary part of the school and community. He further recommends that the teacher stress the selectivity of the orchestra in recruiting wind and percussion players. It should be pointed out that it is a distinct privilege for these players to belong to the orchestra. To make the program more attractive to boys, Hills suggests reminding them of the many fine male performers in the fields of both symphonic and jazz music.  

There is general agreement among authorities that interest in the study of string instruments is stimulated if

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8Ibid.
10Ibid. 
11Ibid.
abundant opportunities are provided for students to hear individuals or performing groups. Local groups who prepare programs for any occasion should be invited to perform for demonstration purposes or for assembly programs. Some music stores send representatives to put on demonstrations after which students are allowed to hold and play the instruments. Occasionally, it is possible to arrange to have a string ensemble consisting of fifth and sixth grade students play for the fourth graders; or to have the fourth graders visit an elementary instrumental class while it is in session.

To further acquaint students with string instruments, charts showing the parts of all the string instruments, pictures of the instruments and well-known performers, or cartoons and drawings on musical subjects may be displayed on bulletin boards.

The quality and quantity of a school's instruments is of vital importance in the motivation of students and the success of the program. Gilbert R. Waller states that "as a rule, schools should furnish some of the instruments, particularly violas, cellos, and string basses, since these instruments are more expensive than violins to rent or purchase." Those talented students, whose parents are financially unable to rent or purchase an instrument, will

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12Gilbert R. Waller, "Recruiting of String Players, Instruments for School Classes," The Instrumentalist, VII (October, 1952), p. 32.
thus be given the opportunity to study music. The purchase of these instruments by the school will also insure the availability of low-stringed instruments for interested students.

All instruments purchased should be of good quality, such as the Roth, Schuster, and Becker, and there must be among them some three-quarter and even one-half sizes for the smaller students.  

**Recruiting Players.** According to Gilbert R. Waller, actual recruiting for string class should begin soon after school starts. Waller believes string players can be successfully started in the fourth grade provided the music teacher is able to set up a schedule which allows him to meet his students at least twice a week without conflict with other subject matter.

In recruiting players for the string classes, however, Waller believes that the music teacher should carefully consider any physical handicaps the students might have which might hinder or prevent proficiency on a string instrument. He lists the following handicaps for the violin and

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viol:

(1) rigid wrist, elbow and shoulder joints that prevent (the left) arm from "twisting" into position, (2) rigid left thumb with very little or no movement in the joints, (3) muscle-bound hand incapable of adjusting to the contour of the neck, and (4) excessively short, long, wide, or pointed fingers.

And for the cello and bass, Waller lists:

(1) muscle-bound hand that won't spread, (2) excessively webbed hand that can't spread, and (3) unusually short fingers. 17

Various sources point out that occasionally one finds an excellent player who has overcome one of these handicaps. However, unless a student shows grim determination and ambition, Waller feels it is wise to direct him to some other instrument which he will find easier to master; otherwise he may become discouraged and, as a result, turn from music entirely. 18

Maintaining Interest. All authorities studied agree with Traugott Rohner that a teacher must be well-trained, enthusiastic, and interested in maintaining a successful string program if he is to play an important role in holding student interest. 19 He stresses that the teacher should be understanding and patient with his group, whatever their

17Ibid. 18Ibid. 19Traugott Rohner, "Assuring Success with the Instrumental Beginner," The Instrumentalist, XIV (September, 1959), p. 58.
ability, and should maintain a discipline which is "not too strict nor too easy." 20

To hold the group's interest, Rohner continues, appropriate melodic material should be chosen. 21 In general, the younger the student, the more melodic the material should be. Albert W. Wassell recommends the use of piano accompaniments; individual playing in the form of a "relay", an exercise in which one student performs a few measures and stops, another student continues, and so on until the exercise is completed; rhythm and tempo variations in exercises keyed to children with fast, slow, and median learning ability; and the use of recordings to further stimulate interest in the beginning instrumental classes. 22

Mark H. Hindsley believes "a musical group thrives on performance." According to Hindsley,

A reasonable number of performances scattered evenly throughout the school year is essential for stimulating progress of the instrumental music department. . . . There must always be some goal ahead to provide incentive for the best possible work; some performance in which the band or orchestra will take pride in showing what it can do. . . . The prospect of "aural inspection" by the public will always bring out the best in a musical group. It is when there is no immediate prospect of a performance that the band or orchestra is apt to drift along in a haphazard or careless manner. 23

20 Ibid.
21 Ibid.
23 Hindsley, op. cit., p. 93.
Other studies are in general agreement with the statements of Hindsley regarding the importance of the parents in maintaining interest in the music program.

Particularly interested in the work of the instrumental music department are the parents of the participating students. They are the ones who can see and appreciate the values of music and bands and orchestras. Most of them become very enthusiastic, and welcome an opportunity to help the work along in any way possible. The organization of parents clubs or mothers clubs is beneficial to most bands and orchestra, as it unites an interested adult body which will support the organizations to a marked degree. . . They not only will be able to help financially through various money-raising projects, and musically by seeing that their children do the right kind and amount of home practice, but also they will help influence public opinion and the school board in the direction of adequate band and orchestra support.24

To promote and maintain interest in the viola, cello, and string bass, Waller recommends that the school policy include provision for the purchase of these instruments, that viola, cello, and string bass instruction be offered along with violin instruction, and that the teacher know the teaching problems characteristic of the viola, cello, and bass.25 It is also important that the teacher assures that the instruments be in good repair and alignment and that the music to be studied has interesting lower parts. Many teachers try to circumvent the lack of interest shown

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24 Ibid., p. 94.

in the playing of lower strings by changing a violin student to a larger stringed instrument. According to Waller, changing a violin student to the viola, cello, or string bass in usually unsuccessful because the teacher, in the interest of expediency, tends to change either the weak violin students or those students who can be depended upon to be co-operative but who are unhappy with the change. The student often loses interest if required to start all over again on a different instrument, or he may have a sense of having failed on the instrument on which he began. Waller believes that by using small sized instruments, children can, and should, be started on viola, cello, and string bass at the outset.

Choosing Correct Size Instrument. In an article published in The Instrumentalist magazine, Ralph E. Rush includes a detailed chart which shows student measurements as they correspond to instrument size. For example, a full size violin requires a left hand span of five to six inches and a right arm length of twenty-seven to thirty inches. The full size cello requires a six inch left hand span, twenty-four inch right arm length, and a student

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26 Ibid., p. 31.  
27 Ibid.  
height of at least sixty inches. The three-quarter string bass (according to Rush, full size string basses are not used in elementary schools) demands a left hand span of six and one-half inches, right arm length of twenty-four inches and student height of not less than sixty inches. The smaller size instruments require progressively shorter hand span, arm length, and student body height.29

Rush also explains how the music teacher can measure arm length and hand span to determine which size instrument is most suitable for his students.

Secure measurement of height in usual manner, measure with a yardstick from the arm pit to the tip of the middle finger for the student's arm length, and the left hand span is measured from the tip of the index finger to the outstretched little finger tip, with the fingers spread as wide as possible. Whenever a borderline case appears, it is best to advise the use of the smaller size. An instrument that is too large will always cause bad habits and can only do harm to the player.30

Care of Instrument. For a successful string program the music teacher should make sure the instruments are in good condition. Gilbert R. Waller recommends that they be inspected systematically before they are checked out: (1) cracks and unglued edges should be repaired, (2) fingerboard should be checked for warp, (3) bridge should be

29 For more specific details concerning smaller instrument sizes, the reader is referred to the article by Ralph E. Rush. See preceding footnote.

30 Ibid., p. 32.
properly aligned, (4) pegs should be checked to see that
they are easy to turn but do not slip, (5) tailpiece gut
should be replaced if frayed, (6) false strings should be
replaced, (7) soundposts should be straightened if necessary,
(8) bows should be rehaired if needed, (9) improper string
clearance at the scroll end of the finger board should be
corrected, and (10) accessories such as shoulder pads and
chin rests should be repaired if necessary.31 If the teacher
is too unfamiliar with the instruments to check these items
himself, he should take the instruments to a capable
repairman where these things can be identified and corrected.
If the instrument is in good condition before it is loaned
to the child, he will tend to give it better care.

Waller recommends that instruction in the care of the
instrument and bow be begun at the first meeting of the
class.32 The following is his clearly defined outline for
proper care:

1. Keep the instrument and bow in the case when not
   in use.
2. Leave the strings pulled up to pitch. Do not
   loosen.
3. Never leave the instrument near a radiator or
   heating outlet or in a cold draft.

31 Gilbert R. Waller, "String Instruction Begins with
Simple Fundamental Steps," The Instrumentalist, VII
(November-December, 1952), pp. 24-25.

32 Ibid., p. 25.
4. Do not allow anyone other than the teacher to handle the instrument.

5. Take good care of the bow. Test for correct amount of tension and rehair it when necessary. The latter is needed much more often than is generally realized. Release bow tension when not in use.

6. With a soft cloth, wipe rosin dust from the top and sides of the instrument, strings, end of fingerboard, and bow stick daily.

According to Louis Potter, "Strings should be cleaned at regular intervals with alcohol" being sure the alcohol does not touch the varnish. When rosin remains on the strings, humidity in the air will cause it to cake and in turn produce a whistling noise instead of a tone when the bow is drawn. There is a misconception among students as to the amount of rosin to use on the bow. Most believe the more the better, but this is false reasoning. If a grade A brand of rosin is used, and the bow hair is in good condition, very little rosin is necessary to make the bow cling to the strings for at least an hour of playing.

In an article written for Etude magazine, Harold Berkley discusses the proper method for applying rosin to the bow.

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The bow is placed firmly on the cake at the frog and four or five short strokes are taken; then the bow is drawn slowly to the point, where a few more short strokes are made; the up bow is taken, again slowly, back to the frog. This process is then repeated once. By this time enough rosin should be on the hairs to last for an hour's playing. The secret is the slow drawing of the bow; this is what causes the hair to pick up the rosin.  

Berkley further explains that most new cakes of rosin have a highly polished surface so that it is difficult for the bow hair to "bite" on them. A few light, criss-cross scratches with the point of a knife will remedy this. Preparations differing in texture are made for the viola and cello. String bass rosin is considerably coarser and heavier.

Class Instruction Compared to Private. In an article published in the School Musician magazine, Paul Rolland compares the advantages of the class lesson over the private lesson.

The student is almost always alone with the teacher, (in the private lesson) which has its advantage when it comes to a "heart-to-heart talk," or to a "shot in the arm," but it also deprives the student from associations with colleagues. In some cases, the presence of other children in the room can relax a self-conscious student.

Sylvan Donald Ward also believes the class lesson

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35Ibid., p. 52.

has advantages not possible in the private lesson.

It is human nature for a student to compare his progress with that of his classmates. To varying degrees then there is the spirit of competition which is a great driving force in musical accomplishment. Students who otherwise are lazy feel a desire to study a little harder in order to keep up with or ahead of a classmate.37

Besides the social stimulus, Paul Rolland cites other advantages of string class instruction.

1. Time saving. Instead of six half hour private lessons the teacher can teach six pupils three times a week in a class instead of just once, and still save time. (The result is) more intensive instruction (and) less dependence on home practicing during the early stages.

2. Greater variety. Increased time provides opportunities for a better rounded curriculum, dealing with aspects of ensemble and ear training and rudiments of theory and appreciation.

3. Better handling of the instrument. Frequent class lessons amount to supervised practicing. Thus the teacher can prevent the formation of bad habits and poor positions, often the earmarks of poor homework.

4. Better sight reading.38

Some parents are reluctant to send their child to a private teacher at first because they are not sure the child's interest will justify the expense. The class lesson at school gives both the parents and the child an opportunity to discover how deep the interest lies, without


requiring the outlay of money for a musical instrument or even tuition.

In the class lesson, the competitive factor can produce excellent results if directed and encouraged by a wise teacher. Victor Weidensee successfully uses the following activities in his instrumental music classes.\(^{39}\)

1. **Bonus Day.** One day a week students volunteer to play for an extra grade, called a bonus grade. Exercises played are those previously studied. The remaining members of the class raise their hands as soon as a mistake is heard and another volunteer is permitted to perform.

2. **Chairs in the Section.** The student plays an exercise previously studied and is judged on the number of mistakes he makes. (This also insures the participation of the other members of the class.) If this technique is used often it allows the students more opportunity to try for a good recitation.

3. **Last Man Out.** All students start playing together an exercise already studied. As soon as a student makes a mistake, he must stop playing. The last person to remain playing (the last man out) then proves his ability by playing the exercise without a mistake and is given a bonus grade or first chair, whichever has been decided upon previous to the contest.

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4. Solo or Ensemble Day. The student performs before the entire class any composition that he desires.

Paul Rolland realizes, however, that there are disadvantages to be found in class instruction too. It has been his experience that a "member of a string class who does not practice alone tends to show poor tone quality." To produce a good tone quality, a sensitive ear must be developed and this can only be done by listening carefully while playing alone. Rolland also writes, "All too often students play with a blurred, scratchy tone quality with indistinct articulation due to lack of synchronized movements between fingers and bow."41

The student may also have poor intonation due to lack of practicing alone and to a lack of listening and discipline in practicing.

The string class cannot always meet the needs of individual students with the result that it "holds back" some and "rushes" others. "Class teaching has a leveling tendency" that may not best serve the needs of the individual student.

Homogeneous or Heterogeneous Classes.42 E.A. Morris states,

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40 Rolland, loc. cit.  
41 Ibid.  
42 Homogeneous refers to a class consisting of all strings. Heterogeneous refers to a class consisting of strings plus wind instruments.
It has been argued that more individual attention can be given in a class of like instruments. Others maintain that higher interest is attained by pupils playing in a group of unlike instruments.43

Einar Hemstrom discusses his views on the advantages and disadvantages of the heterogeneous class.

The so-called mixed classes present problems that need serious consideration. This type of class is not very practical at the very beginning of instrumental study, but after the pupils are able to play simple exercises and pieces it can be utilized to great advantage. (Interest is sparked by the) differences in the mechanism, fingering, embouchure, transposition, (and) balance of group. Parts must be interesting, for the instrumentalist wants to play "pieces" not just "tones". The advantages of the mixed class begin to dwindle when you start playing three and four part music because attention has to be focused on so many things. The mixed class requires an extremely efficient teacher. He must not only know the various instruments extremely well but he must be an excellent musician in every sense of the word.44

Most authorities studied agreed that one of the greatest advantages of heterogeneous grouping is the ensemble experience gained by each member. Reasons cited were

(1) a keener sense of intonation and rhythm are developed,
(2) the student becomes aware of his part in relation to the others and acquires a sense of balance within the group,
(3) the discipline of co-operation needed in playing together is imposed, (4) a concept of leadership is taught

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through first chair position and, conversely, the importance of being a good follower, (5) opportunities are provided for the instructor to explain concepts of harmony, counterpoint, and form, plus opportunities for the introduction of essential conducting patterns, and (6) opportunity is provided for more varied study of composers and styles.

On the other hand Traugott Rohner declares that "the mixing of strings and winds in the same beginner's class is to be discouraged." He believes that because each instrument poses so many different problems, the heterogeneous class cannot be handled effectively in the beginning stages. According to Rohner, a very basic disadvantage of heterogeneous grouping is that the preferred keys for wind instruments are flat and those for the stringed instruments are sharp. When a beginning string student must continually play with the first finger of the left hand pulled back (B for example), the left hand has a tendency to fall into an incorrect position. Violin students will invariably bring the wrist in toward the body of the instrument.

Ability grouping through the use of test results, is recommended by E. A. Morris in an article written for School Musician magazine. The Seashore Talent Test, or

46 Ibid., pp. 64-65. 47 Morris, loc. cit.
some other test of this type which will determine how sensitive the child is to pitch, rhythm, time, tonal memory, and loudness differentiation, may be used. Through ability grouping, the less apt students will be able to progress at their own pace and the more talented students will find the class more challenging.

Class Size, Scheduling, and Practice Problems.
Sylvan Donald Ward discusses class size in The Instrumental Director's Handbook.

These classes would vary in size from four students to perhaps twelve. There should not be more than twelve in one class; individual attention would be smothered. Certain faults develop in beginners which may never be overcome as a result of this lack of attention given to the individual case.48

Einar Helmstrom also has a definite opinion.49 He states, "A class of six or eight students is not impractical but thirty is ridiculous."

Based on research evidence, the ideal meeting schedule should be one hour every day. Since this cannot be arranged in every school, however, the music teacher often has to settle for thirty or forty-five minute periods three times a week. According to Traugott Rohner, "Eight or ten fourth graders given a minimum of two forty-five minute lessons a week make a very good class."50

48 Ward, op. cit., p. 27. 49 Helmstrom, loc. cit.
50 Rohner, op. cit., p. 65.
Ward recommends a rotating schedule in schools where there is a serious conflict between music classes and other subject matter, for example, the class should meet at nine o'clock one week, at ten o'clock the following week etc. In this way, the student is absent from a particular class only once in six or seven weeks, depending on the number of periods in the school day. Ward believes that before and after school classes are to be avoided as much as possible, since the music program is much more successful when classes are scheduled within the school day.

If the music teacher does not meet his string classes every day, he must rely heavily upon outside practice by the students. This may or may not be successful depending upon the way it is handled by the teacher and the parents.

If a student will learn "how" to practice, he will need to spend less time and results will be better. In an article written for Etude magazine, Harold Berkley discusses correct practice procedures. Berkley states that the student must learn to pick out the difficult sections and to play them over and over, pausing after each repetition in order to appraise his mistakes and to decide what must be done to correct them. He must concentrate completely while he is playing and resolve to make each repetition

51 Ward, op. cit., p. 29.
better than the last. If he practices slowly at first, being sure that the rhythmic patterns are accurate, he will have time to associate "mental and physical co-ordination," he will "hear his mistakes more readily," and he will have more time "to prepare for what is immediately to follow." Berkley further believes it is the music teacher's obligation to teach his students the techniques and stress the importance of correct practice procedures.

Ernest Weidner lists some of the numerous reasons children give for not wanting to practice and gives some suggestions for making practice time more enjoyable. First, practice interferes with playtime. "The period of practice should be an isolated part of the day in which the child is not usually occupied," perhaps early in the morning when he is fresh and his mind most active. If it is scheduled at the same time each day, it will soon become habitual. If it interferes with play, it will become distasteful to the young student. Parents frequently forget the importance of play to a child. Second, the child dislikes the music. Parents are in the best position to know this since many students are reticent about telling the teacher. A wise parent will talk it over with the teacher who should then try to assign more interesting material. Third, the child dislikes the teacher. Again

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the parents are in the key position. Most dislikes of children are more or less superfluous and easily handled. Parents should find out why the child has this dislike and discuss it with the teacher. "The whole problem may center around a slightly sharp manner which the teacher is unaware of" and which may be easily corrected once it is pointed out.

Fourth, practice interferes with television. This problem reverts to the first. Parents should see that practice time does not interfere with a child's favorite television program. "If children are permitted to watch their favorite program, but at the same time compelled by a wise parent to carry out their other responsibilities, there will be little trouble along this score." Fifth, the music is too difficult. A child rarely tells his teacher when he is unable to play the music. Parents should discuss this problem with the teacher so he can make an adjustment in his evaluation of the child's ability. "If a child is given small objectives, well within the scope of his power," he will feel the sense of accomplishment so necessary to beginning students. Sixth, the child dislikes the instrument. As soon as a parent learns of this dislike, he should discuss it with the teacher and arrange a change of instruments if possible. If the child is serious he will enjoy practicing more and will soon catch up with the rest of the class. If he is not serious, he will tire of the new instrument and should probably be dropped from the music program until he is more mature. Weidner recommends that the music teacher encourage parents to ask...
questions and to discuss their children's practice problems with him, for by doing so the teacher will make great progress toward overcoming the obstacles of relying on home practice. 54

**Methods.** There are many items to be considered when the teacher selects a method for use in string classes. Following is a list that the writer has condensed from a thesis written by Edward Kimon Contor, and which may serve as a guide in helping the music teacher be more thorough in his selection of a method book. 55

A. Format

1. Durability
2. Binding
3. Paper
4. Attractiveness

B. Illustrations

1. Parts of the instrument
2. Correct Posture
3. Correct position for holding the instrument and the bow
4. Correlation between the fingerboard and staff

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C. Theory

1. Rhythm
2. Scales
3. Triads
4. Key and time signatures
5. Chromatic intervals

D. Technical problems

1. Bowings
2. Fingerings
3. Finger combinations

E. Table of musical terms and tempo markings

F. Objectives listed for each lesson

G. Melodic content

1. Short, familiar tunes
2. Unison material
3. Harmonic material

H. Speed of progression

I. Technical development according to needs

J. Lucidity of the language

K. Suitable for age of group

Of course there is probably no one method that will meet all of these requirements, but some are definitely more complete than others. According to Martin Feldman, "Finger pattern methods are getting excellent results, faster and with less drop outs than any of the widely used one finger
at a time systems." Feldman also recommends choosing a method which begins on the A or D string since these are common to all the string instruments. Also, since both are inside strings on the violin and string bass, the beginning student is playing in a good position with regard to the height of the bow arm.

Many excellent methods for violin, viola, or cello are unsatisfactory for the string bass. In an article published in the School Musician magazine, Ed Gordon discusses some of the faults of beginning methods for string bass.

Bass students may be required to play in higher positions before they have the necessary experience. Bowing and fingering problems are quickly introduced which may be easy for other string instruments but are far too difficult for bass. Certainly extended use of the first and second fingers to the exclusion of the third and fourth of the left hand creates and encourages a bad hand position. Crossing strings with same bow is not advantageous when student cannot even draw a correct bow on the string. Beginning scales and keys are apt to favor other strings even though keys of F and Bb should be stressed first for string bass. Many methods do not accurately illustrate holding of French and German bow.

One must seriously consider the method book in relation to the needs of his particular group. If two methods are comparable in all aspects except speed of progress, most authorities agree it is best to use the

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method which progresses too slowly rather than too fast. If it progresses too slowly one can skip the unnecessary material but if it progresses too fast the teacher will have to provide supplementary material or use several methods simultaneously.

Following is a list of the methods most commonly used and those believed by teachers to be most appropriate for string class instruction. It should be noted that these methods are to be used in the homogeneous grouping only.

1. Beginning Strings - Whistler and Nord
2. Belwin String Builder - Samuel Applebaum
3. Merle Isaac String Class Method - Merle Isaac
4. Waller String Class Method - Gilbert Waller
5. Easy Steps to the Orchestra - Keller and Taylor
6. A Tune a Day - C. Paul Herfurth
CHAPTER III

AN OUTLINE OF SUGGESTED FUNDAMENTAL PROCEDURES FOR STUDENTS IN A BEGINNING VIOLIN AND VIOLA CLASS

This chapter contains suggested procedures which may help to establish a sound basic technique of learning in beginning string classes. Some discussion of problems commonly found with beginning students and suggestions for the prevention or correction of these problems are also included.

How to Hold the Instrument. The following procedures for holding the violin and viola are recommended by Arthur C. Edwards in his book String Ensemble Method and by Gilbert R. Waller in an article written for The Instrumentalist magazine: ¹

1. Place the instrument on the left side of the collar bone with the button near the Adam's apple. Support for this end of the instrument is near center of instrument and body center of player.

2. Rest chin firmly on chin rest.

3. Place the neck of instrument between upper segment of thumb and bass joint of the first finger. Thumb

muscles should not be tightened. The hand will be entirely on the right side of the fingerboard.

4. Left wrist is held away from neck of instrument in a straight line with the forearm.

5. The scroll should be eye level.

6. The left elbow should be under an imaginary line running through the instrument from the button to the scroll, with the forearm away from the side of the body.

7. Fingers should fall perpendicularly so they contact the strings just under the center of the tip of the nail.

Arthur C. Edwards lists common errors of beginning string students with reference to the position of the instrument.

1. Neck of instrument drops into crotch between forefinger and thumb.
2. Left wrist rests against neck of instrument.
3. Left arm is held too far to the left.
4. Left arm is relaxed to rest against side of body.
5. Fingers of left hand contact strings on flat sides instead of finger tips.²

In an article published in the American Music Teacher magazine, Elizabeth A. H. Green discusses the problems which arise when the neck of the instrument is allowed to rest on the web between forefinger and thumb.³ She states that the thumb should not extend above the fingerboard since it will

²Edwards, loc. cit.
prevent the use of the lowest string. It should ordinarily
rest opposite the second finger when F or F♯ is played on
the D string on violin and B or B♭ on the G string on viola.

Green also states that the instrument should not be
allowed to ride up on the middle joint of the first finger
for by so doing the finger will be able to perform only one
of the two required motions. It can get the fingers on and
off the strings, but is handicapped in backward or forward
motion, i.e. it cannot adjust pitch. When the fingers do try
to play a flatted pitch, the wrist will rest against the neck
of the instrument. According to Green, "A collapsed wrist
is easily controlled in the beginning by moving the left
thumb slightly forward." 5

If the left arm is relaxed to rest against the side
of the student's body, it probably means that the scroll is
not at eye level. According to Gilbert R. Waller, both
faults may be corrected by increasing the distance between
the elbow and ribs. 6 The scroll end should not be raised by
merely pushing the palm of the hand upward nor by moving the
hand toward the body.

How to Hold the Bow. In regard to holding the bow,
Elizabeth A. H. Green believes the most important thing to
remember is that the fingers must be curved, for this will
more quickly lead to a relaxed hand position. 7

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4 Ibid.
5 Ibid.
6 Ibid.
7 Ibid.
Arthur C. Edwards and W. Gibson Walters both agree on the procedures leading to the correct holding of the bow.

1. Lay the bow on a flat surface with the frog to the right of the player.

2. Crook the thumb slightly and curve the fingers in.

3. Place the inner tip of the curved right thumb on the finger grip in front of the frog underneath the hair.

4. Drop the two middle fingers over the stick with their first joints on the stick.

5. Curve the little finger and place on its end on the stick slightly apart from the other fingers. Avoid the straight little finger reaching for the frog. The little finger, however, must never be held freely away from the stick, for it contributes greatly to the control of the bow.

6. Place the index finger over the stick between the first and second joints with the first joint lapping over the stick. Be sure the index finger is not stretched out, for it will stiffen the whole hand by causing the muscles to become taut with the result that bowing will be labored and clumsy. All the fingers should be curved as if grasping a ball and the thumb should be on its tip opposite the second finger with a slight outward curve at the first joint.

Arthur C. Edwards lists the following errors common among beginning students when they learn to hold the bow:

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1. Tip of thumb rests in groove of frog.
2. Thumb is stiff so that the flat of thumb instead of tip contacts underside of frog and stick. This may stiffen hand and wrist action.
3. Bow is held by tips of fingers on top of stick, causing a flat, horizontal position of fingers and wrist rather than an inclined, vertical position.

**Early Bowing Procedures.** Before the student applies the bow to the strings, some silent exercises leading to bow co-ordination will be beneficial. W. Gibson Walters suggests a few which tend to aid students in finger flexibility, arm movement, and bow balance.

**Flexibility Exercise.** "The fingers must always be flexible, yet have the feeling that they are part of the stick." (a) With the right hand, hold a pencil horizontally at chest level with a bow hold. The eraser end of the pencil should point to the left. Keep the palm down. (b) Gently pull the pencil to the left by grasping the eraser end with the left hand. The right arm should be kept in place but the fingers and hand allowed "to flex with the pull." The fingers should not change their original places of contact on the pencil. "This attached, but flexible, contact of the fingers on the bow gives the necessary pull for drawing the down-bow." The pulling of the pencil by the left hand produces the feeling of having an attached weight at the tip of the bow as in the downstroke. The line of knuckles at the bass of the fingers is low.

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9 Edwards, *loc. cit.*
10 Walters, *loc. cit.*
**Up-Bow Exercise.** (a) Hold the pencil in the right hand as above. (b) Pull the pointed end to the right with the left hand. Keep the palm down. Note that the fingers of the right hand will lean to the left and that the joints are more prominent. The thumb will flex as well as the fingers. Hold the pencil more tightly at first to increase the friction. "This will aid in an earlier development of the feel of pulling the bow."

**Finger Movement Exercise.** (a) Place the tip of the bent thumb against the ends of the curved index and second fingers. (b) Using the hand and forearm, brush the tips of the fingers to the left on a "table top as in an up-bow motion." Repeat for the down-bow stroke. "Controlled tension is necessary" but the student should strive for fluency and relaxation in his bow movements.

**Forearm Motion Exercise.** When changing bows and crossing strings, a slight oval motion occurs in the right hand and fingers. The following exercises will help to develop this action. (a) Hold a pencil as if ready to play. "Rest the right forearm on a table with the table edge at the wrist, the fingers and hand extending above the table." (b) Keeping the fingers curved on the pencil, outline a small circle both clock-wise and counter-clockwise. (c) Add enough finger motion to keep the pencil parallel to the table edge.

**Upper Arm Motion Exercise.** By combining the
forearm and upper arm, a compound stroke used in changing strings and in changing bow direction is achieved. Instead of a circle, use a small, horizontal figure eight motion.

(a) Hold a pencil "parallel to the floor at chest level with the right hand about sixteen inches in front of the right shoulder." (b) Swing the pencil in a horizontal figure eight. Start with the left loop of the eight in an up-left and around-down swing with a return and rising motion to cross the starting point for the right loop, then swing around-down and return up to the starting point for repetitive swings.

**Little Finger Exercise.** (a) Hold the pencil in visual distance horizontally at chest level. (b) Lift the first finger and put pressure on the fourth so the bow rises. (c) Put the first finger down and lift the fourth so the bow falls. This exercise will strengthen the fourth finger control and fix the thumb-second finger placement. This concept is useful when playing in different parts of the bow.

In an article written for *The Instrumentalist* magazine, Gilbert R. Waller discusses the functions of the hand, fingers, wrist, elbow, and shoulder when playing in all parts of the bow. According to Waller the elbow and wrist joints are used when playing on the inside strings using the middle of the bow. The fingers are also used on the bow to

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tip it up or down. When playing at the tip, "tone is produced by pressure upward on the underside of the stick by the arched thumb and lower arm weight applied by the first finger." The wrist is lower and rolled outward. "To bring the frog near the strings, action to thrust the elbow forward is in the shoulder joints. The wrist is bent laterally to keep bow parallel with the bridge" while the "fingers balance the stick and control the pressure on the string."
The knuckles, back of hand, and wrist are lowered. The arched thumb and second finger serve as a fulcrum for lifting a portion of the weight of the bow. The arched fourth finger serves to keep the bow balanced for playing on only one string.

String crossing and rounded bow arm action\textsuperscript{12} will give the student good control and coordination. Harold Berkley calls it the Wrist-and-Finger Motion.\textsuperscript{13} According to Berkley it is the movement made by the hand and fingers when changing bows at the frog. In making a full length up-bow, the arm carries the bow along to a point about four inches from the frog. When it arrives here, the elbow may be raised slightly to keep the forearm parallel with the floor, the wrist being slightly bent. During the up-bow, the wrist leads the hand forward.

\textsuperscript{12}Supra, p. 36, Forearm and Upper Arm Exercises

\textsuperscript{13}Harold Berkley, "Violinist's Forum," Etude, LXX (December, 1952), p. 52.
When the stroke has arrived at about four inches from the frog, the arm movement ceases, but the hand moves forward from the wrist joint and the fingers bend. As they are bending, the arm begins the down bow.

According to Elizabeth A. H. Green,

Slanting the stick toward the scroll as the frog is approached will substitute relaxed wrist motion for the tension of the shoulder muscles. This means that the bow will play slightly on the outer edge of the hair at the frog. Such tipping of the stick at the frog straightens the bow in its point of contact with the string. It also takes off the excessive pressure at this heavy end of the bow.\(^\text{14}\)

In an article written for *The Instrumentalist* magazine, James Keene discusses the tendency of beginning violin and viola students to press up into the bow with the right thumb.

One of the commonest faults of beginning violin (and viola) students is the tendency to press up into the bow excessively with the right thumb. This can be easily sensed by the instructor by feeling the weight distribution on the bow as transmitted through the bow screw to the teacher. When the excessive tensions are released, the bow wants then to stay close to the string as if glued there. With excessive tension of the thumb, the bow seems to jump off the string as so often is observed in our young students.

If the tension is small, a small amount of manipulation of the right arm will usually correct the situation. If tension is relatively severe, the unruly muscles may be weakened and made ineffective by pounding lightly on the arm just below the elbow where tensions can actually be felt. When tensions are released, the teacher can feel a smooth and free follow-thru with the arm and hand functioning smoothly and the bow clinging to the string producing a pleasing tone.

When a student is asked to press into the string,

\(^{14}\text{Green, op. cit., p. 19.}\)
the thumb often presses into the frog of the bow nullifying any additional pressure placed on the first finger of the right hand.\(^{15}\)

Gilbert Waller recommends that the student first play by rote.\(^{16}\) The following is an example of a typical rote exercise: starting with middle bow, MM 80, on the open D string, play  \[ \begin{array}{cccc} & & & \text{ characterize this sound} \\ \end{array} \]  . Repeat several times.

The notes should be accompanied by a solid chordal accompaniment on the piano followed by four quarter note pianissimo chords during the rests. According to Waller this type of exercise is good because the notes provide group rhythmic response and the rests offer the teacher an opportunity to remind students of details.\(^{17}\) It may also be used as the first reading assignment.

**Left Hand Technique.** W. Gibson Walters recommends that the first lessons be performed pizzicato.\(^{18}\) In his article published in *The Instrumentalist* magazine, Walters describes the position for holding the instrument while playing pizzicato and cites values of this type of lesson.

Early pizzicato lessons should be taught with the violin (or viola) held lightly under the right arm with strings out and scroll pointing toward the left shoulder. Place the left hand in playing position and grasp the upper right bout of the instrument with the fingers of the right hand, leaving the thumb free

\(^{15}\) James Keene, "Avoiding Bow Arm Tension," *The Instrumentalist*, XIV (September, 1959), p. 68.

\(^{16}\) Waller, op. cit., p. 58.

\(^{17}\) Ibid., p. 58.

\(^{18}\) Walters, loc. cit.
to pluck the strings. This banjo or guitar-like position permits the student to see more clearly the placement of his fingers.

As soon as finger placement on the patterns chosen is understood, the instrument should be placed in a normal playing position and the finger pattern melodies played pizzicato with the right thumb anchored on the high string corner of the fingerboard. The index finger is then used to pluck the string about an inch from the end of the fingerboard. Difficulty often arises in early bowing studies when a finger must go down and the bow up. Paul H. Stoner recommends exercises using note repetition to help overcome the finger-down, bow-up concept. According to Stoner, “When notes are repeated in groups of two or multiples, thus permitting note changes to take place in each case on an accented down bow, no difficulty is experienced.” He believes that once co-ordination between bow and fingers has been achieved through such basic note repetition, the confidence and experience thus built up serve to render the consecutive placing of fingers an easy task. Stoner further cites the advantages of this type of exercise.

When a rhythmic pattern of two or four quarter notes on each degree of the sequence of tones is prescribed, it may be anticipated that the students will play at once with great accuracy and assurance, because they are co-ordinating-like movements of bow and fingers. Also they have been given additional time to set up placing of the next finger. Fingers have a pulse to move with the accent of the rhythm,

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19 Ibid., p. 51.
21 Ibid.
but not with the change of bow.

Note repetition is inherently related to the development of naturally correct rhythmic playing, so necessary and desirable in group work.

Problems of reading are considerably simplified since repetition reduces the rapidity with which new symbols must be recognized. Groups of notes encourage pattern reading, a recognized aid to sight reading, pitch-wise and rhythm-wise.

Bowing is freed with the mind off so much manipulation in the left hand. Solid rhythmic blocks allow the bow to use long, free strokes.22

Stoner suggests "Baa, Baa Black Sheep," "Row, Row, Row Your Boat," and "Twinkle, Twinkle, Little Star" as examples of tunes using note repetition.23

If the fingers were introduced by rote, Gilbert Waller recommends that the first reading exercise by the last rote exercise.24 He states also that note reading (using the blackboard) should begin with the open D string since it is an inside string and common to all string instruments.

Waller believes that fingers once placed, should be well rounded and left unmoved until a change of note; and when lifted, the tips should be held exactly above the fingerboard, always ready to strike or press the strings at the desired places.25 The student should avoid stretching

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fingers in the air, contracting the hand when fingers are lifted, or sticking the little finger below the level of the fingerboard.

Waller recommends, too, the use of the fingers-down technique as soon as fingering has been established on one string. According to Waller this technique keeps fingers close to the strings; it develops the hand to stretch in both directions to encompass all normal combinations, thus facilitating in-tune playing; it practically eliminates double stop problems; it builds independence of finger action; it provides a basis for smoothness and solidity because appropriate fingers precede the bow to each new string; the fingers are developed toward accurate alignment with the strings; it insures that fingers will be on their tips; it develops desirable "openness" or elasticity between thumb and hand, giving the hand the feeling of having command of the full width of the fingerboard; it facilitates vibrato; and it allows for more freedom in the left shoulder and arm.

In another article, Waller discusses the use of the fourth finger and the adjustment of the thumb underneath.

Use of the fourth finger is delayed until thumb adjustment to first three fingers is developed. If this has been done well, hand will begin to show signs of muscular flexibility.
To give the hand balance and freedom in placing fourth finger A, thumb should usually be adjusted upward slightly while first, second, and third fingers are kept down. It helps to insure better intonation during beginning stages and leads to greater fluency because thumb will have been trained to keep hand in balance as fingers are being acclimated to fingerboard.

Thumb should be kept relaxed and adjusted to remain under finger load. Thumb should not exert force up through neck to fingers, but rather adjust horizontally under neck, opposite fingertips.  

The thumb must also be adjusted when the second finger plays F natural and G natural on the D and A strings. Waller suggests that this be taught simply as low second finger.  

For the beginning student this usually alters the hand position sufficiently to give a different feeling which may result in F too high and the G above too low.

According to Waller, the key lies in the thumb adjustment. The thumb should be adjusted backward toward the first finger for F natural and upward very slightly for G. Waller states,

The use of the left thumb to keep the hand relaxed and balanced as the fingers are applied to the fingerboard can hardly be overstressed. It is a tremendous factor in intonation and in reducing vibrato fatigue and is equally valuable for shifting, vibrato and overall fluency.

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To train the second, third, and fourth fingers to fall simultaneously when playing a descending scale, Waller recommends teaching the C major scale.\footnote{32} He presents the scale and correlated techniques in the following manner:

As dotted half notes, play C, D, and E and stop, but remain poised ready to continue playing. Keeping down on the G string fingers which have played C, adjust E (first finger on the D string) to make certain it is in tune. Also adjust the thumb until the hand is comfortable around the neck. Now (lifting the fingers from the G string) play F natural back close (on the D string) and continue to ascend the scale, crossing A string in the same manner as D was approached, taking some precaution to play C back close to B.

To start training the fingers to fall simultaneously and to facilitate intonation on the descending scale, play C and B and stop, but remain poised to continue. Now, with the first finger on A, swing the left elbow to the right and while pivoting on the first finger, place the second on D for F natural, third for G and fourth for A, adjusting thumb and arm for comfort and relaxation.

Resume playing and continue down the scale to E and stop. Violins and violas pivot on the first finger, place the second on G for B, third for C and fourth for D. Adjust thumb and arm but keep fingers in place and in tune. Resume playing to finish the scale.\footnote{33}

According to Waller, if this procedure for applying the fingers to a lower string on the descending scale is followed for two or three weeks, gradually reducing the pause after B and E, the class will grow into the habit of


\footnote{33} Ibid.
pivoting, adjusting, and applying the fingers from the first finger side of the hand. 34

Tuning. In an article written for Etude magazine, Hyman Goldstein writes that one prerequisite for effective tuning by the student is the possession of an instrument which is easy to adjust and one that will stay in tune. 35 He recommends replacing old gut strings with all-metal strings. Metal strings retain accurate pitch much longer because they are unaffected by temperature and humidity variation. Goldstein warns, however, that because of the added tension of metal strings and the necessity for proper fitting, the tail piece and tuners should be replaced to fit the needs of correct steel string use. Strings should also be checked for falsity since false strings cannot be tuned accurately. 36

Regarding the pegs, Goldstein states that they should turn easily but not slip. 37 Dry soap and chalk may be used to repair tight, noisy pegs. Chalk is all that is necessary

34 Ibid.


36 A false string is one which has been worn and corroded by contact with the bow and fingers to the extent that the thickness and weight of portions of the string are altered, thus considerably changing the location of the nodes. Since metal strings and gut strings react oppositely with regard to finger placement, it is possible to finger a perfect fifth on two adjacent strings and produce a diminished fifth if the strings are false.
to keep pegs from slipping. Goldstein recommends that the teacher explain how strings are wound, the necessity for pushing the peg into the peg box, the use of tuners, and other physical attributes of tuning. However, Waller suggests that a child not tune for himself until he has a complete understanding of the tuning process, for haphazard tuning will do more harm than good to the instrument.38

The second prerequisite to good tuning is ear training. Waller believes that this training can begin on the first day by having the students listen to A 440, then having them sing it.39 The teacher must also establish pitch relationships so that the student understands the meaning of high and low, sharp or flat. Waller recommends running the fingers up the keyboard to demonstrate high pitches and down to demonstrate low.40 Then as the teacher bows and changes the pitch of the string the students should indicate whether it is sharp or flat. The student may also bow while the teacher turns the peg or tuning screw. If a piano is not available, an electronic tuner, pitch pipe, or tuning fork may be used. The teacher will then need to demonstrate high and low pitches on the string instrument.

Once a feeling for A 440 is well established, a pitch feeling for the other strings should be developed. Both Waller and Goldstein agree on the procedure for establishing

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First establish A. Then sing a minor triad (A-F-D) 5-3-1 down to D for the D string. For violin sing a major triad (A-C♯-E) 1-3-5 up to E. To establish the pitch of the G string, sing 2-1 or (A-G); then transfer down an octave. If this is out of the child's singing range, he must sing up and think down. To establish C from A for viola, teach the major sixth interval through some well known tune or melody such as "My Bonnie" or "Nobody Knows." Avoid pounding out each pitch at the piano.

As soon as full bow strokes are under control, Waller states that tuning to fifths should be taught, each step being carefully explained and demonstrated. If this is started early and kept up relentlessly, performing players at the high school level should certainly be able to tune quickly and accurately.

Authorities generally agree that intonation will not remain true even though strings are in tune unless extensive work is done with ear training. The left hand must also have the necessary amount of flexibility. Hearing intervals such as half and whole steps should be drilled. To prevent ear fatigue, the teacher should avoid "spot" sounding, i.e. he should produce a constant tone for the students to listen to while tuning or practicing ear training.

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41 Ibid.; Goldstein, loc. cit.
Rhythm, Meter, Key Signatures. In an article written for The Instrumentalist magazine, Robert Slider states his techniques for teaching rhythm.

Student should learn the relationship of one note to another. In teaching the relationship, compare the notes to the usual apples, pies, money, or any other way to get the point across.

Next, drill on the counts that each note receives. (The teacher) should not assume that the student knows the half note gets two beats for it may be logical to him for the half note to equal one half beat.

The teacher should show the value of the dot in relationship to its preceding note. The student should visualize the dot as the next smaller note tied to the one that preceded it.

Then students should guess all combinations of notes that make up four-four time.

The explanation of six-eight time played in two beats is very hard for some students to grasp. Taken separately and explained as a rhythm completely different from what we have previously studied, the student can start fresh. The teacher should first explain that all six-eight time is based on the triplet, and the two triplets make up a complete measure in that time.  

Slider uses the following chart to present note relationships and recommends that it be displayed daily.

\[\text{Diagram of note relationships}\]

\[\text{Slider, Robert, "Teaching Basic Rhythm," The Instrumentalist, XIII (March, 1959), pp. 95-96.}\]

\[\text{Ibid., p. 95.}\]
Most teachers fully explain meter signatures as to what each number signifies. The teacher may make up exercises using all common meter signatures, then include a few very unusual ones to make certain students can relate what they have learned.

Key signatures are usually taught very gradually in the method books as new fingerings are learned. Some teachers find they need nothing else to teach the students to fully understand key signatures, while other teachers have to rely on crutches such as mnemonics (for example, Good Deeds Are Ever Bearing Fruit) or teaching the last sharp as ti and the last flat as fa.

Vibrato. Charles B. Righter recommends that vibrato be started when the student's habits have become firmly established with reference to the positioning of the left arm, hand, and fingers. The arm should be held well under the instrument (to the right), the hand should form around the neck of the instrument with contact points (thumb, base-joint of the first finger, and the tips of the fingers) well established, the fingers should respond to discipline with a good tactile and percussive action, and the bow arm should be developed sufficiently to produce a good tone without much thought or attention.

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Righter discusses the reason for the sound establishment of these habits.

The reason for the sound establishment of these habits is that it will be necessary to make certain changes in the position and action of the left hand. The correct basic habits must be so well established that they will not be abandoned, only temporarily modified. Instead of keeping unused fingers down, the vibrato has greater freedom and flexibility with them raised. First finger should be withdrawn slightly from the neck to permit greater freedom in the movement of the hand. The thumb may be drawn under violin (or viola) neck for support. 46

In an article written for Etude magazine, Harold Berkley discusses the importance of a relaxed hold on the instrument and a relaxed shoulder position. 47 Berkley states that a hunched shoulder will throw the shoulder-hand-arm combination out of balance, which in turn is a great handicap to a natural and flexible vibrato. 48

Berkley further explains that the large muscles in the lower arm are the propelling forces behind vibrato action, for they swing the hand forward and back from the wrist. 49 The wrist and finger joints must be trained to bend easily, yet retain their strength. The hand should be balanced above the thumb, which supports the weight of the neck and scroll of the instrument and serves to counter-balance the finger pressures.

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46 Ibid.


48 Ibid.

49 Ibid.
The left hand should be checked to see that it is not tense when the student plays. This can be done by observing whether the unused fingers are relaxed or stiff. If the hand is tense, Berkley recommends having the student play his exercises very slowly, maintaining a strong grip with the stopping fingers and moving the others up and down in the air.\textsuperscript{50}

Regarding the teaching of the vibrato itself, Harold Berkley states,

Start with the second or third finger on the A string (D for viola) in the third position, rolling the finger on its tip widely from the wrist joint and really slowly. The goal... is an absolutely even and relaxed swinging of the hand over the fingertip. It is essential that the motion come from the wrist and that the finger rolls in the direction the string runs and not across it...\textsuperscript{51}

When a wrist vibrato has been developed to the point where it vitalizes and beautifies the tone, then is the time to inject some arm motion into it. This tends to give additional warmth to the tone. But it must be made slowly at first to avoid the possibility of stiffening. Here is the main reason why it is always better to develop a wrist vibrato first; a good wrist vibrato usually means a relaxed arm, but a good arm vibrato can be produced with a tension in the wrist that may cause technical trouble later on.\textsuperscript{51}

In another article Berkley said,

The increase in speed should be made entirely by the wrist vibrato; if it comes from the arm it is likely to stiffen the left hand technique...

When the student can vibrato quite rapidly from the wrist, it is time to work on the arm vibrato in

\textsuperscript{50}Ibid. \textsuperscript{51}Ibid.
order to widen the swing of the hand. The ideal vibrato is a sensitively blended mixture of the arm and wrist... I mean that at times the wrist vibrato will predominate and at other times, that of the arm.\textsuperscript{52}

Waller outlined the following silent exercise for the development of the concept of vibrato before vibrato is applied to the instrument:\textsuperscript{53}

Position A - Extend the left arm as though holding the violin or viola. Relax the wrist and let the hand fall toward the face.

Position B - Now swing the hand away from the face, without changing the bend at the elbow.

Using positions A and B, practice the following steps:

1. Swing the hand from position A to position B and back in varied rhythmic patterns, making sure accents are observed.

2. Start at \textit{MM =80}. As strength and control are gained increase to \textit{MM =132}.

3. Keep the arm and hand relaxed, action in the wrist, movements wide and vigorous, and accents accurate.

4. Practice several times daily until the wrist gets tired.

5. As speed is gained, the student will gradually drift off into a natural and easy vibrato.


Another approach to teaching vibrato advocates beginning as soon as possible. Make the vibrato a movement of the finger tip, not the wrist, and use the forearm as the motivating force. Keep the wrist loose and the movements small. Begin by using the second finger, preferably on the two upper strings.54

When working to produce a wider vibrato, the student should avoid letting it get too wide. However, most teachers believe this is taken care of, for as the student increases the speed of the motion, the vibrato usually tends to become a little narrower.

Positions and Shifting. In an article written for Etude magazine, Kelvin Masson discusses shifting to some length.55 He states that in the third position, the hand is brought into contact with the instrument's front rib, the lowest edge of which must be close to the wrist, the neck remaining between the thumb and forefinger, as is the case in the first position. In moving to the fifth position, according to Masson, the wrist moves away from the neck toward the right, while the front rib gets in close contact with the ball of the thumb.56 The knuckles of the hand will

54Dr. Arthur J. Bryon, of Fresno State College, in a lecture to the Music Education Seminar, July, 1961.


56Ibid., p. 23.
be practically parallel with the strings, the fingers will fall in a straight line, and good intonation will almost certainly be assured. The elbow will have a decided thrust to the right.

In changing from one position to another, Masson further explains, a sliding finger acts as a guide to the interval of change. The hand may move to any of the positions, but the commonest shift is from first to third and third to fifth, involving a slide of a third, usually for the first finger. In all shifts, violent movements of the arm are avoided as much as possible.

According to Masson, the guiding finger does not always have to be the stopping finger in the new position. The first finger may slide from B to D on the A string but the fourth finger stops G before the D is heard. The sliding sound, called portamento, will be produced by beginners but as they progress, this sound can be eliminated by skillful manipulation of the bow and fingers. Some music, of course, requires the portamento.

Paul L. Paradin, in an article entitled, "The Natural Harmonic of the Second," discusses the use of the second harmonic in shifting.

... it can act as a reference point in shifting to the upper positions, and help in refining the bow arm. The second harmonic is the easiest to find and

57 Ibid., p. 24. 58 Ibid.
play. It divides the string into two equal parts and produces a sound an octave higher. 59

According to Louis A. Potter, the shift should not be introduced until the left hand has become well established in the first position and the initial stages of stiffness and awkwardness are passed. 60 He warns, though, that if it is delayed too long, the fingers tend to become anchored to the first position and cannot readily adapt to a new situation.


CHAPTER IV

AN OUTLINE OF SUGGESTED FUNDAMENTAL PROCEDURES FOR STUDENTS IN A BEGINNING CELLO AND BASS CLASS

How to Hold the Instrument. Most authorities agree upon the procedures leading to the correct position of the cello. Sitting erectly on the edge of the chair, the student should place both feet flat on the floor but with the knees low enough to allow for bow clearance. The cello is placed securely between the knees, the lower left bout contacting the calf of the left leg and lower right pressed lightly against right knee, the right foot being drawn back slightly. The student leans forward slightly so that the instrument touches his chest. The scroll extends over the student's shoulder with the neck of the instrument crossing the student's shoulder and neck but touching neither.

With the tail pin placed on the floor a little to the right of center, the instrument is slanted diagonally back and to the left just enough to allow the player to perform without having to lean head and body to the right. The tail pin is adjusted so that the top peg touches under the left ear, although it is normal in playing to incline the head under the pegs.

A sharp pointed tail pin, a T bar, or a rubber mat helps provide the security needed to avoid over-gripping with the legs. In an article written for American String Teachers, "The Cello: An Aid to String Teachers," at a given time (January, 1961), p. 24.
Teacher magazine, Robert House states,

Since the left side of the instrument is tilted upward to favor bowing on the top strings, it is often necessary to adjust for playing on the C string. One temporarily pivots the instrument slightly to the left and forward for this purpose.¹

House suggests that the common fault of advancing the right shoulder and raising or pulling back the left is caused by one or all of the following:

(1) insufficient slanting of the instrument, (2) continually looking at the fingers, or (3) failure to straighten the right arm sufficiently when playing near the tip of the bow.²

House further states that in order to have the left hand and arm in the most advantageous position and to avoid fatigue, the left shoulder must not be pulled back or sloped.³

David M. Levenson has outlined some games to help clarify the cello position for his students.⁴ Three of these games are included here.

"Set to Sprint" - Sitting on the edge of the chair (no instrument) with feet flat on the floor and trunk of body leaning forward in such a manner that the student is ready to stand and "spring" at a given signal. Slouchers will never get started.

"Rock and Roll" - Swaying from side to side on the chair with the cello firmly supported by the two knees, (in the lower curve of the back part of the rib of the instrument) chest, and sharpened end pin.

²Ibid.
³Ibid.
⁴David M. Levenson, "Foundational Games for Beginning Cellists," The Instrumentalist, XIII (September, 1958), pp. 80-81.
"Ear Scratch" - If the cello is adjusted to the proper height, the student should be able to scratch his ear lobe on the C string peg by turning his head to the right. This will prevent the neck of the cello from incorrectly resting on left shoulder.\(^5\)

Louis A. Potter recommends the following procedures by which a correct placement of the left hand in the regular position may be attained on the cello.\(^6\) When the hand is dropped to the side, perfectly relaxed, the fingers will be relaxed and "naturally curved." The left arm should then be raised to the side and in line with the shoulder, fingers extended and slightly opened. The left thumb should be swung forward and over the palm of the hand until it is about even with the middle finger. With the thumb still toward the palm of the hand and fingers opened, allow the hand to fall over, wrist bending, completely relaxed. The arm must be bent from the elbow toward the body, and the palm of the hand turned toward the chest at the same time. Move the hand toward the instrument until it touches the side of the neck, near the fingerboard line, at a point that will cause the first finger to fall "about three inches" from the nut. The fingers should be "at right angles to the fingerboard."

The left hand thumb is placed (without being bent) on the under side of the neck immediately beneath the second

\(^5\)Ibid.

finger. The fingers are rounded, the fleshy tips opposite the curve in the nail being applied to the string. The left elbow is slightly raised so that a natural curve of wrist and arm away from the body is formed. "A line through the knuckles of the hand" will be "about even with the top of the fingerboard when the fingers are on the middle strings. The base of the fingers must be well away from the side of the fingerboard and the fingers able to press down the string with full strength, but without 'squeezing' the neck of the cello." 7

In an article written for American String Teacher magazine, Robert House discusses the position of the left arm.

Nothing is required of the wrist and arm except to fall straight away from the scene of action without arching, twisting, or depression. The proper elbow is neither high nor low, nor forward nor back; it is merely at the end of a straight arm. Accordingly, there must be some adjustment in arm elevation for each string. 8

David M. Levenson suggests an exercise called "String Massage" which he finds helpful for correcting the sagging left elbow problem, common among beginning players. 9 He has his students make a fist of the left hand. By sliding the thumb along the entire length of the A and D strings, the students have to raise the elbow and thus they readily see the advantages of a higher elbow position.

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7 Ibid., p. 6.
8 House, loc. cit.
Most authorities are in agreement with Gilbert Waller and Arthur O. Edwards as to the correct string bass playing position. In a standing position, the student places the bass about two inches from his body with the scroll inclined slightly to the right so the back corner of the instrument at the point where the upper bout and back join, is directed toward the player's left groin. The back edge of the instrument rests lightly on the left groin while the upper bout rests against the left side of the student's abdomen and the neck of the instrument extends over the left shoulder not far from the ear. The student's left leg is forward.

The student should adjust the pelvis to and fro until the instrument is perfectly balanced against the body. This technique of balancing is extremely important for future left hand freedom.

Playing in the lower positions requires that the string bass be held rather straight but well into the groin where the left leg joins the body. The scroll and neck come in closer to the body as the scale is ascended, and the left armpit rests in the saddle for thumb position. The left knee may be used to tip the instrument out slightly when playing on

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the lower strings. Body weight should be equally distributed on both feet.

Correct placement of the left hand in the regular position is achieved much the same as for cello. The hand is dropped to the side, perfectly relaxed. The fingers are relaxed and curved. With the left hand fingers extended and opened slightly, the thumb is swung inward over the palm until it is even with the second finger. The wrist is relaxed and the hand falls toward the strings and fingerboard.

With the student leaning well over the instrument, the hand is moved inward toward the neck until it contacts the neck near the fingerboard line at a point that will bring the first finger about five inches from the nut.

How to Hold the Bow. There seems to be general agreement with the statements of Potter and Waller in regard to the correct way to hold the cello bow.¹² The tip of the bent right thumb touches both the end of the frog and the stick itself at the point "where the frog ends on the lower edge of the stick."¹³ The first finger is curved over the stick at the first joint (or between the first and second joints), while the other fingers are curved around the stick and the frog. The little finger is wrapped around the stick.

¹³Potter, op. cit., p. 15.
rather than being placed on the tip of the frog as in violin and viola playing. The bow is manipulated over the second finger and thumb fulcrum by the first and fourth fingers. It is supported from below by the arched thumb and from the sides by the first and fourth fingers. The pressure from the fourth finger must be sufficient to balance the stick. Because the cello bow is shorter, thicker, and heavier than the violin bow and because the cello is played in a more vertical position, the fingers are "placed to afford a more firm grip on the bow."\(^\text{14}\) This is the reason for the little finger being wrapped around the stick rather than placed with the tip on the stick. The wrist must be flat.

There are two types of bows used in string bass playing; the French bow and the German bow. According to Paul Rolland and Louis Potter the French bow is held generally the same as the cello bow with the arched right thumb placed on the under side of the stick, the first finger gripping the stick at the middle joint, and the other fingers wrapped around.\(^\text{15}\) The German bow is held in the palm of the hand so that the end of the stick rests in the crotch between the thumb and forefinger. The tip of the thumb is placed on the upper side of the stick at a point

\(^{14}\) Ibid., p. 14.

almost on top. The first and second fingers are placed on the opposite side of the stick with the third finger resting in the hollow of the frog. The tip of the curved little finger rests on the bottom of the frog. The fingers and thumb should not be stiff and straight and the right elbow must not be held away from the body.

The grip on the bass bow must be stronger than that for the cello bow because the stick is heavier and more pressure is required to start a tone on the larger bass strings. The arm must reach downward full length with the elbow straight. The action is initiated from the wrist.

Robert House discusses the motion of the bow as compared to the violin bow.

The violin bow motion is essentially to and from the body, while the cello (and bass) bow travels across it... The sweep of the fingers toward the bow tip is much less pronounced, and the cellist's (or bassist's) fingers all go over the stick. The fingers are slightly spread. The thumb is held obliquely to the stick, rather than perpendicularly, although the knuckle is bent and flexible as on the violin. The stick tilts toward the player, rather than away, because of the slope of the strings.  

*Early Bowing Procedures.* Gilbert Waller recommends that silent exercises be used to develop bow co-ordination for cello and bass students before the bow is applied to the strings. 

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16 House, loc. cit.
17 Gilbert R. Waller, "Exercises for Facility in All Areas of the Bow," *The Instrumentalist*, VII (May-June, 1953), 19
the bow grip and finger flexibility in handling the bow: 18

Firm Bow Grip Exercise. If the student can keep
the bow from being pulled out of his hand (by his own left
hand or another's gentle pull) when holding it only by the
thumb and index finger, he has the fundamental feel of the
bow grip. If the student is using the cello bow or the
French Bass bow, it is most important that the right thumb
be braced against the edge of the frog where it joins the
stick (not down in the crotch of the bow), and that the
thumb be bent slightly outward, almost as much as when
holding a pencil.

Little Finger Exercise. To avoid further any
idea of a tight, inflexible bow grip, the student lifts
each finger off, starting with the little finger, at a
regular four beat count - on the down-bow - until at the
point where the bow is held with the thumb and index fingers
only. The procedure is reversed on the up-bow.

Waller further states that the thumb should be arched
away from the hand, forming an open or oval area between the
arched thumb and knuckles of the fingers. 19 This permits
thumb and finger flexibility while retaining the natural
strength of the hand.

When the cello or string bass bow is applied to the
strings, it is placed halfway between the bridge and the

18 Ibid., pp. 42-43. 19 Ibid., p. 42.
fingerboard. "The first bowing exercise should be short with quick strokes," states Louis Potter.\(^{20}\) Potter suggests that the student use middle bow first, playing an exercise in quarter notes at a tempo of MM 110. He feels that playing long whole bow strokes right at the beginning usually causes the student "to stiffen the bow arm and the fingers." The bow is drawn straight and parallel with the bridge. The same exercise should be practiced at the tip and then at the frog, employing no more than eight inches of the bow. There should be some rotation of the bow over the fulcrum (thumb-second finger) and the grip through the bow from thumb to fingers should constantly change as the need varies.

Potter further explains that the stroke of the cello and French Bass bow is made mostly by the whole arm when the lower half of the bow is employed.\(^{21}\) From the middle to the point, it "is mainly a forearm stroke from the elbow." To keep the bow in alignment during the stroke, "the wrist is gradually lowered in the down stroke" and gradually raised on the up bow. It "arches somewhat toward the fingerboard as the frog is approached." The wrist, arm, and fingers should be flexible and relaxed with the thumb somewhat arched. According to Edwards, lack of elbow movement causes the "upper arm to move and results in bow movement which is semi-circular rather than at right angles to the strings."\(^{22}\)

\(^{20}\)Potter, op. cit., p. 17.  \(^{21}\)Ibid.  
\(^{22}\)Ibid., op. cit., p. 13.
However, when the student is using the German Bass bow, elbow movement causes the bow to move in a semicircle rather than at right angles to the strings. Edwards states, "Right arm movement can be compared to a pendulum which swings freely from its top joint." When the German Bass bow is being used, the arm should be straight at all times, but never stiff. Fatigue and a strained unnatural bowing arm can result from awkward shoulder movements.

According to Robert House, the technique of string crossing on the cello and string bass does not differ materially from that used on the violin or viola, except that the order of strings is reversed. Thus, the same type of passage will often require a reverse direction of the bow when rapid string crossing is involved.

In the same article, House states that if the student points the bow toward the rear, it is probably due to an advanced right shoulder or elbow. If the point tends to drop too far toward the floor, the student is not straightening the elbow and depressing the wrist enough, the index finger may not properly control the bow, or the fourth finger is not relaxed. It must be remembered that the cello and string bass lean to the left; therefore the bridge is not quite parallel to the floor.

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23 Edwards, loc. cit.  
24 House, op. cit., p. 25.  
House sums up,

In general, one should look for a more "square" approach of the hand to both bow and fingerboard. The key to this is often found in the position of thumb on either hand. When the cello (or bass) is held properly and the bow travels roughly parallel to the bridge, the proper movement of the right arm is largely achieved.  

In an article written for The Instrumentalist magazine, Gilbert Waller states that to play in the middle part of the bow on the string bass, the student need use only the shoulder and wrist joints.  

The weight of the bow alone is not enough to produce a good tone, so weight must be added by pressing downward on top of the stick and upward with the tip of the arched thumb. This is not forced weight but weight of the lower arm. The second finger retains a very light grip and the third and fourth fingers serve no useful purpose at the moment. The thumb and first finger act as a fulcrum; the first finger operating as the lever through which the weight of the arm is delivered to the bow.

As the frog moves away from the string, the wrist straightens rather quickly, partly because of the distance covered and because the bow is being pulled somewhat toward the floor due to the inclined position of the instrument. It becomes necessary to relax and drop the right shoulder to reach the proper place for bow placement, midway between

\[26\] Ibid., p. 25.

the end of the fingerboard and the bridge. To start the tone smoothly, the bow stick should be inclined away from the bridge with the edge of the hair contacting the string. The larger the string, the more the hair is turned. The larger strings require more pressure to start the tone, followed by a decided reduction. The bow is drawn at right angles to the strings, parallel with the bridge.

Chester Minkler further discusses the importance of arm weight in producing a good tone on the string bass.

The right arm should hang straight and relaxed. The weight of the arm, shoulder, and back keeps the bow hair pressed into the string. The arm should swing like a pendulum for full bow strokes. Proper bow speed must be maintained or poised weight plus rosin adhesion will cause the bow to stop or stutter. The bow should be gradually brought closer to the bridge when ascending a scale into the thumb positions. Arm weight is increased when ascending.23

**Left Hand Technique.** According to W. Gibson Walters, the use of pizzicato in the early stages can be very beneficial to the cello and string bass student.29 Walters believes it will give the student an opportunity to learn the technique of finger placement without the added concentration needed for bow manipulation.

To play pizzicato, the student holds the instrument in normal playing position with the fleshy part of the hand

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just below the thumb on the low string side of the fingerboard. The fleshy end joint of the index finger or second finger is used to pull lightly across the strings. The strings are pulled to the side, not up, so that they do not slap the fingerboard.

Without the necessity for concentration on proper bow manipulation, Walters believes assurance in placing the left hand fingers will be gained more readily. According to Walters, as soon as left hand placement on the strings is well established, and the student is able to play simple melodies, he should begin using the bow on the strings.

Paul H. Stoner recommends exercises using note repetition to help overcome the bow-up finger-down concept. Simple tunes with groups of notes in twos or multiples of two may be used. Unusual material of this type will give the student greater accuracy and assurance in his playing because his bow will be coordinated with his fingers and he will have additional time to think about finger placement. Practicing in such a manner will help the student to read by groups and will facilitate sight reading and rhythmic development.

The following is a silent exercise devised by Waller for developing flexibility and balance in the left hand:

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30 Ibid.
Place the fingers on the last string and extend the slightly arched thumb, gliding on its corner, alongside the side of the neck opposite the finger-tips, until it is alternately even with the fourth and then the first fingers. This should be accompanied by freedom throughout the upper part of the body and something of a swinging action in the hand and fingers. In response to the alternating thumb position, the fingertip should roll up and down the string resembling a slow vibrato.  

According to Waller there are many values to this type of exercise. Among them are (1) it builds strength, (2) it builds a balance of control between the thumb and fingers, (3) it serves to fix finger pressures on the strings at a desired minimum, (4) it prevents the hand from getting into any fixed position, (5) it is an aid to intonation—the fingers are trained to maintain a position or to adjust under a load, (6) it facilitates shifting in developing mobility in the arm and thumb, and (7) it is the beginning of vibrato technique.

In another article written for The Instrumentalist magazine, Gilbert Waller discusses the three most common problems in balancing the left hand when playing cello and bass. The first is excessive pressure with the thumb tip, causing the joints to double in toward the hand. To correct this, Waller suggests allowing the thumb tip to

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33 Ibid.
glide lightly along the neck while the joints remain arched slightly outward. The second problem occurs when the thumb is placed too near the first finger, or too far down, near the fourth. The second finger is basically the center of the left hand; therefore the thumb should be kept opposite this finger except when vibrato is used. Third, lifting fingers before it is necessary when crossing strings. In ascending scale passages the second, third and fourth fingers should be kept down, pivoting with them and the thumb, while the first finger is brought over to the string above. By keeping the fingers down, they remain close to the strings, the hand develops sufficiently to stretch in both directions to insure better intonation, double stop problems are practically eliminated, fingers learn to move independently, smoothness and solidity in playing are more easily achieved, fingers will be on their tips, and a desirable elasticity between thumb and hand is developed, giving the hand the feeling of having command of the full width of the fingerboard.

Most authorities and method books agree with the statement by Gilbert Waller that the fingers-down technique should be stressed, especially when the student starts string crossing. During the pivoting process the left arm and hand move, with the shoulder, upper arm and elbow dropping

\[35\text{Ibid.}, \text{p.} \ 31.\]
a little, and the hand pivoting on the finger tips as the tip of the thumb adjusts slightly around the neck opposite the finger pressures. This maneuverability is the basis of freedom from tension.

When the student begins to read notes, Waller suggests that he start with the open D string since it is an inside string and common to all the string instruments. This is important in a group of mixed string instruments. The fingers may be introduced one at a time or in finger patterns. Many teachers feel that the introduction of patterns is faster and produces better results. If the fingers are introduced by rote, it may be wise to use the last rote exercise for the first reading lesson. Singing the note name will be beneficial.

When students begin to learn the C major scale with its string crossing, it will be necessary to train the fingers to fall simultaneously on the descending scale. Waller has suggested the following procedures for teaching the scale and correlated techniques: Using half or whole notes, play C, D, E, and stop, but remain ready to continue. Keeping down on the G string fingers which have played C,

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adjust E (first finger on D to make sure it is correct). Also adjust the thumb around the neck, slightly forward for cello, but slightly downward for bass. Basses will leave the second finger on the G string while playing D and E (first on D). Now play F natural and G and continue up, crossing the next string in the same manner.

On the descending scale, the cellos will use open A so there will be no problem of pivoting the first finger. However, all four fingers must fall simultaneously for G on the D string.

The cello student will have to learn the special technique of finger extension quite early. This position corresponds approximately to the normal string bass position, and allows the hand to cover a major third. The extension may be made backward or forward, but according to Louis Potter, "The backward movement is usually taught first since it is simpler to execute and gives the student the feel of the stretched position."\(^{38}\) Potter states that for the backward extension, the second, third, fourth fingers, and the thumb remain fixed while the "first finger stretches back a half-tone from the regular position."\(^{39}\) In making the forward extension, the thumb moves "along the neck of the instrument a little in a single coordinated movement with the shift of the second, third, and fourth fingers.

\(^{38}\) Potter, op. cit., p. 20.  
^{39}\) Ibid.
along the string, while the first finger tip stays back in position." Thus, the thumb "continues in the same relative position on the neck of the cello, underneath the second finger. The two extensions are alike in appearance but differently executed."

The single, simultaneous shift of the thumb with the second, third, and fourth fingers in making the forward extension is necessary because it avoids the "forced, cramped stretch," it keeps the fingers in "proper alignment over the string, insuring correct intonation, and it minimizes the movement required in executing the extension."

The arch between the thumb and first finger must not collapse for the collapse will cause "the base of the finger to come into contact with the fingerboard, which in turn causes the fingers to lie at the wrong angle to the strings. This makes the proper extension impossible, throws the fourth finger out of alignment, and considerably lessens the striking power of the fingers."

Tuning. Cellos and string basses used by students must be easy to tune and the strings must retain the pitch once it has been established. Strings should be checked for falsity because false strings cannot be tuned accurately.  

Hyman Goldstein and Gilbert Waller both believe the

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40 See Footnote No. 36, Chapter III, Section V, Page 46 for explanation of false strings.
teacher should explain how the pegs work and in which
direction they must be turned to obtain the desired pitch.41
The teacher should demonstrate and be sure the student
thoroughly understands the tuning process and mechanism
involved before allowing the student to tune for himself.

A student must also learn relationships between
pitches. According to Gilbert Waller, in an article
published in The Instrumentalist magazine, ear training can
be begun the first day of class by playing and singing A 440.42
Once this is established, high and low, sharp or flat
relationships can be taught. Waller recommends running the
fingers up the keyboard to demonstrate high pitches and down
to demonstrate low.43 Then as the teacher bows and changes
the pitch of the string, the students should indicate
whether it is sharp or flat. The student may also bow
while the teacher turns the peg or tuning screw. If a piano
is not available, an electronic tuner, pitch pipe, or tuning
fork may be used. The teacher will then need to demonstrate
high and low pitches on the string instrument.

Gilbert Waller suggests the following procedures for
tuning the cello.44 First establish the pitch for the A

41 Hyman Goldstein, "Keep Those Violins Tuned!" Etude,
LXIX (July, 1951), p. 25; Gilbert R. Waller, "Pitch
Consciousness Precedent to Tuning," The Instrumentalist,
42 Ibid., p. 38.
43 Ibid.
44 Ibid.
string. Then, using the minor triad (A-F-D), tune the D string. For the G string, the student may think 2-1 (A-G) and transfer it down. The low C may be tuned by thinking a major sixth down. The major sixth interval may be introduced through a familiar melody such as "My Bonnie" or "Nobody Knows."

To tune the string bass, start with the D string. Sound the D above middle C on the piano, F# above that, and A below middle C. The result will be an inverted major triad. While it is sounding, play D in octaves below. Follow the same procedure with the other strings.

Gilbert Waller believes that tuning to fifths on the cello can be successfully taught as soon as full bow strokes are under control. \[45\]

The second and third harmonics are also used extensively in cello and string bass tuning.

**Rhythm, Meter, Key Signatures.** The reader is referred to Chapter III, Section VI, Page 49, for discussion of teaching procedures of rhythm, meter signatures, and key signatures.

**Vibrato.** Robert House believes that the cello and string bass vibrato are perhaps easier to achieve than the

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violin and viola vibrato and may be started earlier. Correct habits, however, with reference to the position of the left hand, arm and fingers, should be firmly established, and the stiffness and awkwardness apparent in the beginning stages of playing the instrument should be overcome before the vibrato is introduced.

To acquire the concept of the cello and bass vibrato, Waller suggests that the student imagine he is holding a small ball in his fingertips. The tips of the fingers of the left hand should be placed together. The hand is placed in the depression of the left shoulder, the wrist relaxed and forward. With the fingertips in the shoulder pit, elbow up, the lower arm is swung upward and slightly backward. The wrist will form an arc of about ninety degrees. The vibrato will be performed by these two movements: wrist relaxed and forward, then the lower arm upward and backward. The shoulder muscles provide the power which may be noted by squeezing the shoulder muscles with the right hand.

The following study has been used effectively by Louis Potter for developing a cello vibrato: Place the hand on the neck of the instrument in regular position with

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46 House, op. cit., p. 25.
48 Potter, op. cit., p. 27.
the fingers raised about an inch above the strings. "The vibrato movement is initiated from the elbow, not the wrist, and should be practiced slowly at first, gradually speeding up the movement. Be sure the thumb is held in its usual position at the neck of the cello." Stop frequently to relax so that stiffness may be avoided.

"After some practice with the fingers off the strings," try the vibrato with one finger at a time on the strings. It is preferable to start with the second or third finger, always being sure the arm muscles do not become tense when pressing down the finger.

Avoid too much circular movement. "The finger does not actually take part in the rotary movement, but as a result, the flesh of the finger tip moves along the string in more of a vertical movement. This gives the deviation in pitch" that is the basis for vibrato.

Regarding the speed of the vibrato, Potter further states that this is generally left to the discrimination of the player but probably should not exceed seven movements per second nor be less than five. A too slow vibrato will sound offensive while a vibrato that is too fast sounds strained. It is important that the whole left forearm produce the vibrato and that the wrist act only as a part

49 Ibid.
of the entire unit which consists of the forearm, wrist, hand, and fingers.

The rhythmic plan for practicing the vibrato as outlined in the preceding chapter may also be used for the cello and bass.

**Positions and Shifting.** The cello and string bass students will need to learn shifting much earlier than the violin and viola student because of the shorter intervals covered by the fingers in the first position. As soon as the violin and viola students are ready to learn to use the fourth finger on A, the cello and bass students will need to learn to shift.

In an article written for *The Instrumentalist* magazine, Gilbert R. Waller explains the shift.

The shift should be explained as a whole hand movement, the thumb moving with the hand and remaining about even with the second finger. The shift is begun with the finger or fingers last used and as the new position is approached, the fingering altered to meet the needs of the new position. Thus, (for the cello) in the shift from F# (third finger in first position) to G (second finger in second position), the whole hand starts sliding with all three fingers on the D string. As G is approached, the third finger is removed and the second (with the first down behind it) is brought up to play G. The student should practice this on one string only until he can do it well, then apply it to the other strings.

Since the string bass is tuned to fourths, the

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student will have to use positions other than the fundamental half position right away. New positions can easily be introduced on the G string, using the upper part of the D Major scale.

The whole hand moves down the string toward the bridge until the second finger (G#) position is one whole step below the fourth finger (B in first position). As the new position is reached on the string bass, fingers may be removed or added according to the new note. The student should adjust his playing position by leaning somewhat over the instrument for the downward shift and straight again for the shift back. The left hand should remain about the same distance from the left shoulder as when playing normally, the shoulder following the shift.

The thumb position should be taught to cello students who advance rapidly. This is used above the sixth position. Louis Potter states that when playing in thumb position, the thumb is placed on its side and "at a right angle to the strings with the wrist flat and on an even plane with the forearm. The elbow, arm, and hand must be in a favorable position for the fingers to be in playing position over the string."51 The thumb covers two strings simultaneously much of the time. According to Robert House, "The palm must be high enough to keep the knuckles of the fingers

51 Potter, op. cit., p. 8.
from collapsing. The fingers turn diagonally to the fingerboard, covering a compass similar to the violin. However, it is seldom necessary to use the fourth finger in the thumb position." The thumb should not drag back of the fingers. It is normally kept one whole step behind the index finger and acts as a support to the arch of the hand much as it does in the lower positions, when it is under the neck.

Summary. How well a string section plays depends to some extent on the development of assurance in applying these various techniques. The string class teacher can do much to establish good playing habits, and thus lessen the amount of corrective work which eventually falls to the private teacher.

Once these technical abilities are well established, the teacher can turn to what is most important in performing fine music—musical interpretation.

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52 House, op. cit., p. 25.
CHAPTER V

CONCLUSION

Summary. There is a definite shortage of competent string players today. The sources of this study indicate that this shortage is due to a lack of emphasis on orchestra and orchestral instruments and to an overemphasis on band and band instruments. An insufficient number of adequately trained teachers also contributes greatly to the shortage, for the public schools cannot offer the high quality string instruction necessary to produce well-trained string players.

Promotion of the String Program. Some authorities recognize the necessity for promoting the string program in the public schools. Among the suggestions to be used for promotion of the string program are association with concert artists through publicity, public performances, and interviews and discussions before civic groups concerning the string program. It is recommended that school officials be acquainted with the low cost of equipping an orchestra and with the contribution a fine school orchestra can make to the community. Co-operation from string instrument manufacturers and dealers is also cited as a possible means of promotion.

Motivation and Recruitment of Students. Association with a concert artist has again been recommended for use as
a motivating force. Another strong factor in motivation is the establishment of a high regard for the string organization in the school and community. Authorities generally agree that provision for students to hear performing groups and the opportunity to use good quality instruments also play an important part in the motivation of students toward orchestral instruments. Sources stress the advisability of recruiting only those students into the string program who show adaptability to the string instruments.

**Maintaining Interest.** Methods for maintaining student interest in the study of string instruments, as suggested by sources cited, include the selection of material appropriate to the age of each particular group, the provision for a variety of public performances by the group, and the enlistment of parental interest and assistance. Regarded as probably the most important factor in holding student interest in the study of string instruments is a well-trained teacher who is interested in the string program and enthusiastic about its promotion.

**Size and Care of the Instrument.** Authorities discuss the possibilities of developing bad playing habits if the student is allowed to use an instrument which is incorrectly fitted. One informed source clearly outlines the procedures for measuring the student's body so that correct fit will be assured.
Proper care of the instrument is also stressed. If the string program is to grow, all available money needs to be used for the purchase of new instruments, not expensive maintenance of the old ones.

**Class Instruction Compared to the Private Lesson.** Social stimulus, competition, maintenance of interest, possibilities of saving time, and the development of better playing habits are all advantages given in favor of the class lesson. It is generally accepted, however, that better tone quality is achieved in the private lesson. In spite of the tonal factor, however, authorities generally agree that, in a public school situation, the class lesson meets the needs of more students than does the private lesson.

**Homogeneous or Heterogeneous Class.** The advantages of both types of grouping are discussed. The experience gained through ensemble playing is the most valuable facet of heterogeneous grouping while in the homogeneous grouping, the teacher can deal more effectively with problems peculiar to string instruments. The homogeneous class seems to be more favorable, especially in the beginning stages of study.

**Class Size, Scheduling, and Practice Problems.** It is generally agreed that an average class of beginning string students should consist of not more than ten students, if the class is to be effective. Two forty-five minute lessons per week are considered the least number of times a teacher
should meet his students. In schools where a teacher has difficulty in meeting his students often enough, a system of rotation is suggested in order to avoid serious conflict with other subject material.

Selection of Methods. Recommended basic qualities which a music teacher should look for when he is selecting a string class method book are the attractiveness and durability of the format, an adequate number of illustrations, the necessary amount of theory, the presentation of technical problems together with clear explanations, the number of tables of musical terms and tempo markings, a list of objectives for each lesson, the quality and quantity of melodic content, the speed of progression, the lucidity of the language, and the method's suitability to the age and needs of the group.

Holding the Instrument and Bow. There is general agreement among sources regarding the correct procedures for holding the instrument and bow. It is important that the instrument and bow be held so that support will be provided where necessary and so that tension will be avoided. They should also be held so that technique will be facilitated, not hindered.

Bowing Procedures. Exercises which aid in finger flexibility, arm movement, and bow balance are recommended by experienced teachers. There seems to be agreement
concerning the most effective procedures for teaching string techniques such as string crossing, or playing in all parts of the bow. Also stressed is the importance of freedom from tension in the bow hand, wrist, arm, and shoulder.

**Left Hand Technique.** Pizzicato lessons are suggested until left hand finger placement has been established on the strings. By using pizzicato, the student avoids having to concentrate on bow manipulation while learning finger patterns. Also discussed is the advisability of playing tunes which use note repetition so that assurance in placing the fingers is gained, plus special techniques and values of teaching the fingers-down concept, the use of the fourth finger, and training fingers to fall simultaneously on the descending scale.

**Tuning.** For the student to tune effectively, sources indicate the need for good quality instruments with all metal strings that are easy to adjust and retain the pitch once it has been established. It is recommended that ear training begin early and continue relentlessly until the student can tune quickly and accurately by himself.

**Rhythm, Meter, Key Signatures.** Experienced teachers recommend teaching techniques for rhythm, meter, and key signatures. To teach rhythm it is suggested that the teacher illustrate note relationships by displaying a chart which
shows the relation of one note to another. Exercises or mnemonics may be used to drill meter and key signatures.

**Vibrato.** Sources generally agree that the student's habits with reference to the placement of the left hand around the neck of the instrument should be firmly established before vibrato technique is started. The muscles which are the propelling forces behind vibrato action are discussed and the importance of avoiding tension is stressed. There is a difference of opinion among sources as to the easiest string and finger to be used when learning the vibrato. The majority seem to believe that the easiest for the beginning student is to place the second or third fingers on the second to the highest string, and play in the third position for the violins and violas and in the regular position for cellos and string basses.

**Positions and Shifting.** Authorities stress the importance of beginning to shift to the new positions before the left hand becomes anchored to the first position. If the left hand becomes anchored to the first position, it does not readily adapt to new situations. Informed sources discuss the shifting process and the placement of the left hand when playing in the new position.
Recommendations. As stated in Section II of Chapter I, the purpose of this study has been to discover ways in which the string program may be sufficiently improved to make the shortage of adequate string players less critical as well as to suggest teaching methods and procedures to be followed by teachers in establishing and maintaining a successful string program. The following recommendations are made in the hope that perhaps through the use of the conclusions of this study, string programs can be devised that will make the shortage of string players less critical.

Better Promotion of the String Program. The findings suggest that orchestras in the high schools are decreasing because of the lack of emphasis on orchestra and orchestral instruments and because of the overemphasis on bands. Lack of interest in string organizations results in the lack of competent string players. It is suggested, therefore, that string programs be established and promoted in those schools where string instruction does not presently exist. In schools where the program has been previously established, strong promotional forces need to be used to strengthen the program. School administrators and teachers should attempt to foster interest in the string program by every means available in the community.

More Good Quality Instruments. In districts where a string program has been established, better quality
Instruments can readily be added to the existing supply. Where string instruction has not previously existed, it seems reasonable to suggest that the teacher purchase good quality instruments even though he may not be able to purchase as many as desired.

**More Effective Grouping of Students.** Evidence indicates that homogeneous grouping is more effective than heterogeneous grouping although each type has advantages which should not be over-looked. It seems advisable, therefore, for a teacher to learn of the advantages and disadvantages of each, and to group his students to best suit the needs of each individual.

**Better Selection of Methods.** It has been found that some teachers do not always use the best methods available. To be more careful in his selection, it seems advisable for the teacher to study each group’s particular needs with thoroughness and to keep in contact with publishers so that he will always be aware of new method books as they are published.

**Better Trained Teachers.** Sources generally agree that there is an inadequacy of teachers trained to teach strings. This inadequacy is perhaps due to the lack in the teacher's basic education, since many problems inherent in string playing cannot be covered with complete thoroughness in a college string class of one or two semesters. It is
recommended, therefore, that the teacher constantly expose himself to magazine articles, lectures, and discussions dealing with string problems so he can add to the basic education received in college.

To make use of all the procedures suggested by this study, the teacher would have to be teaching in an ideal situation, because the difficulties involved make such an accomplishment improbable. However, the findings of this study do indicate a need for improvement in many areas of the string program. Martin Feldman sums up the situation in a few words.

The elementary string programs must be developed to the highest peak of efficiency and progress so that our school orchestras of today and tomorrow will not have the deficiencies and musical failures of the school orchestras of today and yesterday.¹

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