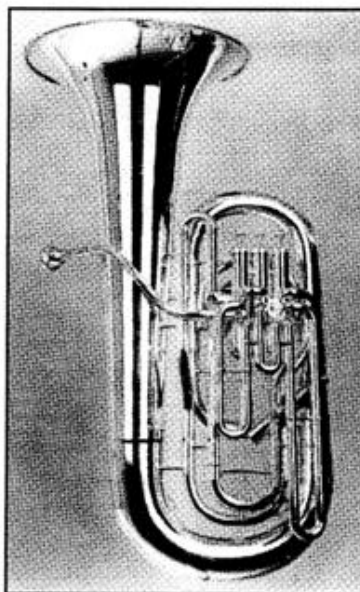


Upright Bell-Front Action-Piston Valves



Upright Bell-Top Action Valves



Bell Front-Front Action-Rotary Valves



Upright Bell-Front Action-Rotary Valves



## Tuba Basics

### Valves

The tuba is a member of the valved-brass family, and as such, can either be equipped with *piston valves* or *rotary valves*. Tubas may also be designed so that the valve system is either a *top-action* (*piston type only*) system or a *front-action* (*piston or rotary or a combination*) system.

#### PISTON VALVES

This type of valve is a cylinder that is placed in a casing and by the use of a spring, moves down and up. Piston valves are considered a better choice for beginning students, especially tuba students since the valves of the tuba are large and heavy. Their construction and placement on the instrument cause this type of valve to attract dirt, dust and grime and to need frequent and generous lubrication.

#### ROTARY VALVES

Rotary valves are shorter, fit into a casing similar to that of the piston valve, but swivel from left to right. This kind of valve is much easier to care for than the piston type and does not require as much lubrication or as frequently because of the tight fitting and closed casing.

Tubas can have as many as six valves, and you will need to decide how many will be right for you. Most tuba players agree that no tuba should be equipped with any less than four valves. The extra fourth valve lets you play lower notes, gain more flexibility through the use of alternate fingerings, and increases the potential for better intonation.

With a three valve tuba, the lowest note that can be played by using all three valves is: (all examples are for BBb Tuba)



The addition of a fourth valve makes it possible to extend the lower register in the following manner:



The fourth valve eliminates some awkward fingerings which produce a "stiffness" to certain tones. The following example illustrates the use of the fourth valve to eliminate awkward fingerings.



If you are going to be channeling your efforts into a career as a professional tuba player, you will want to consider obtaining a tuba equipped with five valves. Tubas possessing this many valves offer more alternate fingering possibilities, greater range extension and added potential for correcting intonation deficiencies.

Fifth valves are designed as either a flat whole step or as two whole steps. The most popular choice is the two whole step design.

Regardless of the valve system chosen and the number of valves your tuba will be equipped with, the primary three valves operate in a set fashion. The *first valve* will lower any open tone by one step, the *second valve* lowers any open tone by a half step and the *third valve* will lower any open tone by a step and a half.

### THE BELL

Nearly all tuba players favor the fixed upright bell. An instrument built in this style is easier to balance, store and transport and receives less wear and tear over time. The danger of the bell-front model is that the bell can fall off. There is also the matter of having to store and transport two cases instead of just one. It is believed the upright bell produces a more beautiful tone quality.

### PITCH/KEY NOTE

Tubas are pitched in BBb, CC, Eb and F. If you are interested in learning the tuba to provide a source of recreation, then the tuba in BBb is your best choice. Tubas in this key are at home in every situation from concert band to orchestra and chamber ensemble to jazz group. There are a large variety of shapes, sizes and valve systems to choose from which gives you an opportunity to find your ideal horn.

If you are going to aim for the professional world of tuba playing, then you should choose the tuba in CC. This is the choice of professional tuba players and there are many models to choose from. With this tuba, it is recommended that at least five valves be included.

The Eb tuba was very popular many years ago, and has enjoyed a wonderful comeback in recent years. Several excellent models of this instrument are available and if you believe this is your choice you will have no trouble choosing one.

The F tuba is still an instrument that is strictly for the professional player. It is a small instrument which is not useful for amateur situations.

### **BORE SIZE**

This is a choice you will have to make depending on your age and physical maturity. For most people, a tuba with a *medium* to *medium-large* bore is quite suitable. This bore size in terms of measurement would be from .750" to .812". Don't worry, your dealer will be able to provide the appropriate tuba.

### **THE MOUTHPIECE**

Choosing the right mouthpiece is very easy and should not be a concern. The great Dean of Tuba Players, William Bell, counseled that the mouthpiece which comes with the instrument is entirely satisfactory. The author shares that belief and has never found any reason to doubt it.

In general, any tuba mouthpiece, especially if it is to be used on the BBb tuba should conform to the following general measurements.

1. **CUP DIAMETER:** *1-9/32"*
2. **CUP DEPTH:** *Medium to Medium-Deep*
3. **RIM SHAPE:** *Fairly wide and rounded*

You may wish to have a smaller or larger mouthpiece and a different rim style. You should choose a mouthpiece that feels comfortable on your embouchure and one that allows for the quickest and easiest response when you place it in your tuba.

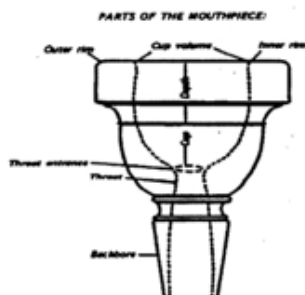
**CUP VOLUME:** The inside of the mouthpiece is called the "cup" because of its shape. Tuba players have to guard against using a very small cup, even though it may facilitate playing in the upper register and produce a "brighter" sound because in the low register the tone will be thin and sharp in pitch. A too large cup does allow for the production of a "darker" tone quality, but can inhibit upper register playing. A medium cup will be just right for you as a beginner and as you mature, a larger cup volume could be considered.

**THROAT:** The hole at the bottom of the cup is known as the "throat" of the mouthpiece and tuba players should choose a mouthpiece that has a round, gradual entrance that is neither too small or too large.

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**SHANK:** The "shank" of the mouthpiece is the part that fits into the "mouthpiece receiver". Using the stock mouthpiece that comes with your instrument will be your best choice. If you do choose another mouthpiece make sure that it has a standard shank because if it is different, you may have to use an adapter to avoid serious intonation and response problems.



## MUTING THE TUBA

Muting the tuba is not done to dampen or soften the sound. It is done to change the tone color. This is true for all brass instruments. There is a misconception that putting a mute in the bell of the tuba will diminish the sound and not disturb others. This is true to an extent, but a good mute will allow the sound to project fully and be heard regardless of the dynamic level.

The tuba does not have the wide variety of mutes to choose from that the other brass instruments enjoy. Primarily the tuba is limited to some form of "straight" mute. Simply put, this is a mute that is shaped like a giant ice cream cone with three long strips of cork placed equidistant from each other that allows the mute to be fitted into the bell without touching the bell.

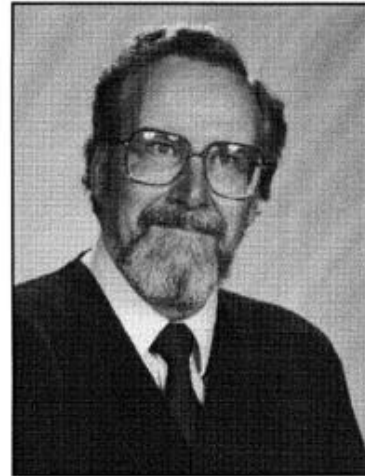
There are other mutes available for the tuba such as *Velve-tone* and *Whisper/Whispa*. These mutes significantly alter the tone quality and the *Whisper/Whispa* is also a good device for practicing as it actually does dampen the sound enough to allow tuba players to practice in motel rooms without disturbing other guests.

Tuba mutes are a standard piece of equipment and you will have to choose the appropriate model for your tuba. A number of manufacturers are now producing a good selection of mutes and you should have no trouble choosing a good one.

## PURCHASING YOUR TUBA

You now have all of the information necessary to make a wise choice in the model of tuba you purchase. However, you should keep in mind the following facts when making the final choice. After all, this may be a life time investment and you do not need to have any regrets about your choice of tuba.

1. Is the finish blemished by discoloration, nicks, scratches, or unplated portions?
2. Are the braces and other supports properly placed? Is there sufficient protection for the slides and other tubing?
3. Are the valves and valve casings adequate? Do the valves move freely without obstruction? Are they tight and quiet when they move, or are they loose and noisy?
4. Do any of the water key openings leak? Do you hear any leaking noise around any of the in and out tubing? Check the in and out tubing for movement or other defects.
5. Does the instrument match your conception of design? Are you able to reach all of the movable slides, valves, water keys while holding the tuba in a comfortable position?
6. Ask your dealer if he is willing to provide you with complimentary items such as valve oil, mouthpiece brush and polishing cloth. Purchasing an instrument as costly as tuba is quite an accomplishment for most dealers and they willingly supply these items as a courtesy.
7. A stock mouthpiece should come with your tuba. Make sure this is true and if there is not one with the instrument, request one.
8. While not necessarily a part of the standard purchase, ask whether a case is included with the price of your instrument. You must have a case and will have to take delivery of it at the same time you take delivery of your tuba.



**BARTON CUMMINGS**

Barton Cummings has built and enjoys a career as an author, composer, conductor, educator, and performer. He has engaged in these activities for more than thirty years.

As an author, he has written three books, over three hundred reviews and scores of articles. His writings are quoted in hundreds of books, articles and dissertations by other authors.

The music of Barton Cummings has gained international exposure through performances by such notable artists as Mark Nelson, Mary Ann Craig, Fritz Kaenzig, William Brenton, Janet Polk, Michael Kimball, David Deason and such musical ensembles as the Colonial Tuba Quartet, Meridian Arts Ensemble Brass Quintet, Tokyo Bari-Tuba Ensemble, University of New Hampshire Concert Choir and the University of Michigan Tuba-euphonium Ensemble. Recordings of his music are found on the Channel Classics, Crystal and Mark labels.

As a conductor, Mr. Cummings has conducted such groups as the Greenville, Mississippi Symphony Orchestra, D'Albert Summer Orchestra, University of New Hampshire Symphony Orchestra, and he currently serves as Music Director of the Golden Hills Concert Band and the Walnut Creek, CA Concert Band.

One of the pioneers in the development of the tuba as a solo and recital instrument, he has been responsible for commissioning more than four dozen new compositions for the tuba. Mr. Cummings has toured and performed extensively as a soloist and has appeared in Carnegie Recital Hall, Lincoln Center Library, on college and university campuses throughout the United States and has presented special programs at numerous national and international music festivals and symposiums. His recordings have met with outstanding critical acclaim and may be found on the Capra, Coronet and Crystal labels.

As an educator, Mr. Cummings has served on the faculties of the University of New Hampshire, Indiana State University, San Diego State University, Point Loma College of San Diego, Delta State University as well as several California Community Colleges including Diablo Valley College, Napa College and Solano Community College.

Currently residing in the San Francisco Bay Area, Mr. Cummings is associated with the Antioch, CA Unified School District.

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## ACKNOWLEDGMENTS

The book you are about to read is the result of more than thirty five years of playing and teaching the tuba. I have been very fortunate to have studied and worked with many of the finest musicians of the last half of the Twentieth Century.

My students have taught me so much and to them I will always be most grateful. I could not possibly list all of them, but they will know who they are. To my personal teacher, Harvey Phillips, I thank him and want him to know that without his fierce dedication to tuba playing and music, I would never have accomplished so much. It is to him that I dedicate this book.

Special thanks to Anthony Ermio for his drawings of the embouchure and the tongue, Yvonne Handa for her drawings of the ancient instruments and Kate Mikula for her many helpful suggestions in computer techniques.

The world of music and tuba playing has been for me one of excitement and adventure. It remains fresh and new and offers a challenge each and every day. I only hope that you who are reading this book will enjoy this world as much as I.

**Good luck!!!**

## INTRODUCTION

The purpose of this book is to offer basic instruction to those who have a desire to begin the study of the tuba. It has been written so that anyone can understand and apply the principles involved in playing the tuba.

No book can truly communicate the actual mechanics of playing the tuba, but it is possible to achieve a basic understanding of the principles involved with tuba playing when they are presented in an uncomplicated and easy to understand process.

In addition to this book, I recommend that a private teacher be engaged. This "*second*" set of ears is invaluable when it comes to the development of tone quality, dynamics, rhythmic accuracy, pitch, technique and other aspects of playing the tuba.

Learning to play any musical instrument requires more than simply playing through exercises for a set period of time each day. It takes a well planned practice schedule with specific and attainable goals. Included in this book is a set of guidelines for help with creating and establishing a well designed practice session.

## Is The Tuba For You?

Before proceeding further into this book, take an inventory of yourself. The tuba is not for everyone because of its size, weight and shape. To play the tuba, you must be able to lift and hold it properly with both feet flat on the floor, have easy access to the mouthpiece and be able to activate the valve system.

If, after you read through the following guidelines, you are still committed to playing the tuba, *great*. But, remember, playing the tuba is not easy and results do not come quickly. You will need the patience to sit for long hours over weeks, months, and years to perfect your skills as a tuba player. Time is your friend when you use it right. Take your time, and give yourself the chance to mature. The results will be well worth it. Playing the tuba, either for fun or as a profession is a most rewarding experience.

**1. FACIAL CHARACTERISTICS:** Your teeth must be even with no serious over/under bite. Your lips cannot be too thin or too thick and should be free of injury. You will have to have enough room from the bottom of your nose to your upper lip in order to place the mouthpiece in its proper position.

**2. HEALTH HABITS:** It is essential that all musicians enjoy excellent health. A well fed, rested and cared for body and mind make for a happy musician. Generous and regular brushing of the teeth and rinsing of the mouth is a must for all musicians.

**3. STRONG LOWER JAW:** Your lower jaw should be well formed and not receding or jutting out. Both of these conditions can cause problems with mouthpiece placement.

**4. INTELLIGENCE AND WORK HABITS:** You should be slightly extroverted and assertive to play the tuba. A lively imagination, curious mind and varied interests all contribute to tuba playing. You must have good personal discipline and be able to work well with others.

**5. PHYSICAL ATTRIBUTES:** You do not need to be Paul Bunyan to play the tuba. All you need is the right amount of strength to handle it with care and play it with comfort.

# PART ONE

## The Tuba

### A BRIEF HISTORY OF THE TUBA

The tuba is the lowest pitched and youngest member of the brass family. It traces its history from the *Serpent*, an instrument that dates from the late Sixteenth Century. The Serpent was made of wood, covered with some kind of hide and used a brass or metal mouthpiece similar to those used on brass instruments today. The name came from the shape of the instrument which was usually in the form of a curved serpent.

Near the end of the Eighteenth Century, the *Ophicleide* made its appearance. An entire family of instruments was built and ranged from the Alto in Eb to the Contrabass in F. They were made of brass, had a *conical bore (dark, mellow tone)*, keys like a bassoon and used a brass mouthpiece. Because their tone was so soft, several players had to be engaged to play the parts written for the instrument.

The early years of the Nineteenth Century were filled with many experimental brass basses. None were satisfactory or successful until Johann Gottfried Moritz of Berlin introduced his bass-horn which he called a *Tuba* in 1835. This was a *Bass-Tuba* pitched in F and was equipped with five valves.

After the introduction of the Moritz tuba, a Bohemian instrument maker named Vaclav Cervený introduced a series of instruments that included bass tubas in F and contra bass tubas in BBb and CC. These tubas had from three to six valves and are believed to be the first brass instruments to be fitted with rotary valves.

In 1898, the *Sousaphone* was created by Ted Ponder of the C.G. Conn Company and had an upright bell. His basic instrument was later modified to incorporate a bell front. Both upright bell Sousaphones and bell front Sousaphones were very popular for many, many years. The Sousaphone is still the primary bass instrument of the marching band.

The Twentieth Century has witnessed the introduction of hundreds of new models of tubas and you will have no difficulty in choosing the best model to meet your needs. A list of some of the more popular tuba models and possible sources for obtaining them is provided in Part Eight.