

EXTENDED TECHNIQUES FOR THE HORN

A Practical Handbook for Students, Performers and Composers

by DOUGLAS HILL



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**Professor of Music-Horn
University of Wisconsin-Madison**

Dedicated to Karen Zaczek Hill, my loving wife and musical companion.

Horns on front and back covers courtesy of the G. LEBLANC CORPORATION

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EXTENDED TECHNIQUES FOR THE HORN

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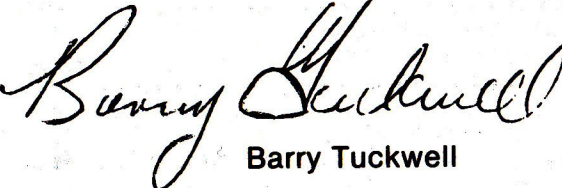
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FORWORD

This volume is the first complete documentation of the effects and extra-musical sounds that can be produced on the horn. The simple format used makes it easy to find the accepted notation and method of producing the sounds. It will be a stimulus to composers, professional players, teachers and students who have hitherto been without any serious guidance on the subject.

Mr. Hill has made an invaluable contribution to the development of contemporary music.


Barry Tuckwell

ACKNOWLEDGEMENTS

My belief in the importance of the extended techniques for the horn has developed gradually over the years due to many positive experiences. Some of my most important experiences took place within various ensembles at Indiana University under Arthur Corra, at Tanglewood under Gunther Schuller and with Arthur Weisberg and the Contemporary Chamber Ensemble of New York. While at Yale University, Yehudi Wyner also contributed to my expanding interest in the compositional potentials of the horn. To these few and many others, I thank you for nurturing this interesting topic.

Those who have directly aided in the compilation and construction of this book need also be gratefully acknowledged. Karen Zaczek Hill, Barney Childs, Les Thimmig, Joan Wildman, Nancy Becknell, Frøydis Wekre, Paul Anderson, Kristin Thelander and Alice Breider among others, have helped in the readings and corrections of the original text. To the librarians at the Library of Congress in Washington, D.C., and especially to Karen McNearny Famera from the American Music Center in New York City I extend thanks for their assistance and enthusiastic interest. Thanks also to Rita J. Koch for her extensive typing.

I would like to express special gratitude to both Gunther Schuller and Barry Tuckwell for their generous contributions to this book. Both of these men have done so much for the development of contemporary music and for the advancement of the horn and its techniques. Thank you both.

INTRODUCTION

It is hoped that what is included here will be both interesting and useful to the inquisitive composer and the concerned hornist. This is a presentation of additional vocabulary for the horn to be used when an idea cannot be better expressed in any other way. With the extension of vocabulary, thought patterns tend to evolve to more complex levels, we are capable of more clearly expressing ourselves, and above all, we are able to know with greater vision what it is we wish to express.

This handbook, however incomplete or obsolete it may eventually become, is important for two very important reasons. Nothing of its kind is readily available, and it addresses a problem which has been ignored far too long. Composers, in general, are often afraid to write for the horn, *that most treacherous of all instruments*, believing that their music will not be well performed or in some cases even attempted. The output in recent years by the majority of active composers has consistently avoided, or at best neglected the horn. The tuba, trombone and trumpet have, however, enjoyed a new surge of interest and invention from many of these same composers. We, the horn players, are largely to blame for this neglect. We have great works by Mozart, Beethoven, Schubert, Schumann and Brahms, so why concern ourselves with the needs for additional repertoire?

Bruno Bartolozzi, in his book *New Sounds for Woodwind* has written: "The evolution of instrumental music has always been brought about by reciprocal collaboration between composers and performers... The fact remains that true instrumental conquests have never been the fruit of abstract conception, but of toilsome direct experience." Upon reading the accounts of many of the famous works for horn, one will find that most of them were inspired by, dedicated to, or written for a specific performer. Today we have a few horn players who have consciously continued this important tradition, but we also have a large number who ignore or denounce invention and experimentation and openly discourage composers

from utilizing the numerous possibilities of our highly versatile instrument. There is hope that this attitude is changing with the rapid growth of young talent. If young and enthusiastic horn players are encouraged to be receptive to new techniques there will be an increase in our repertoire, rather than a continuation of this period of seeming disinterest.

Many of the included materials originated from my study of over 300 scores and numerous texts and articles on new notation and instrumental techniques. No attempt has been made to produce a compendium with extensive references and extended verbiage justifying each inclusion. What has been assembled is a collection of the more common, effective, and in some cases, most inventive sound potentials of the horn. Each chapter is devoted to a particular "family" or category of effects and is divided into three distinct sections. General considerations are discussed briefly in the opening STATEMENT section. Next, the SPECIFICS are presented, including the name of the effect/technique, the most common or most appropriate notation, a description of the resultant effect, some technical knowledge for its execution, and miscellaneous comments for further understanding and for completeness (as needed). The third section includes brief EXAMPLES of most of the effects in a concentrated musical context. Each musical example is based upon studied materials, often by numerous composers, and is original with the author for the sake of clarity, consistent effectiveness, and uniformity. Each of these examples has been recorded by the author for that most obvious reason: we are all primarily interested in the sound!

It is my sincere hope that this handbook and its recording will help to direct and inspire composers toward the extensive musical vocabulary of the horn, and aid and inspire the performer toward an open-minded application of these techniques and a deeper understanding of the importance of the horn, *that most versatile of all instruments*.

Chapter 1

RANGE

I. STATEMENT

The overall playing range of the horn for the young professionals of today is nearly four octaves. (There are those who are capable of both flexible and accurate performance for more than four octaves, but they are yet a minority.) Such a statement differs greatly from the traditional textbook idea that a hornist must specialize in either the high or low registers.

Such specialized categories began early in the classical period with the development of the “cor-basse” players, the new breed of E^b horn players who strove for an ideal mellow tone quality through the modification of the mouthpiece design and placement on the lips. The “cor-alto” player continued as an off-shoot of the clarino playing from the Baroque period. Thus, very simply stated, composers began to write for “cor-alto” on the first parts and “cor-basse” on the second parts within the orchestra or within chamber music. Players specialized in one or the other, using the necessarily

varied instruments. Authors of orchestration books, to this day, continue to advocate such a concept of separation. All of this might be convenient, but it is quite inconsistent with modern players and with the great advances in horn design.


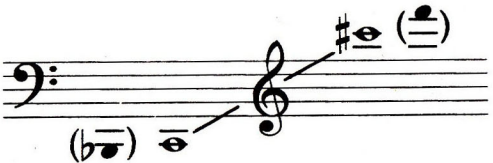
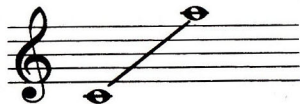
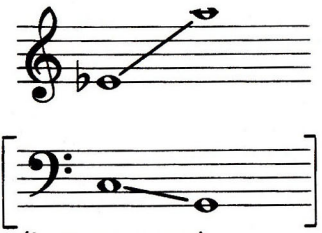
One will discover, throughout this book, an extensive variety of sounds and techniques possible from the horn. The reason for this versatility is due largely to: (a) the position of the horn’s playing range within the harmonic series (see Appendix for all possible series), (b) the design characteristics (i.e., a small mouthpiece with a deep cup, a long and narrow mouthpipe, the medium to large bore size, the usual two horns (F-B^b) within the one instrument, the large flare outward to the bell opening), (c) the right hand’s position(s) within the bell, and the consequent qualities of sound, from an extreme brassy edge to a covered, mellow, distant hum.





The horn’s large range of pitches and vast range of timbres is what this book is about.

Note: The *old notation* method of writing bass clef horn parts to sound a P4 higher is, with few exceptions, obsolete. Thus, *new notation* should be used. Make a notation in the score and parts (i.e. “new notation,” “sounds a P5 lower,” “loco,”

etc.) for absolute clarity. Horn players will usually be able to tell which method is being used based on the context. For that reason we shall use *new notation* throughout this book.

II. SPECIFICS

NAME	NOTATION	COMMENTS
<p>1. Common playing range</p> <p>* (R) ex. 1</p> <p>* This specific example is recorded (i.e. (R) ex. 1). See Section III EXAMPLES</p>	<p>*</p>  <p>* Note: All notations throughout this book are for Horn in F with "new notation" bass clef (sounds a P5 lower than written)</p>	<p>-be careful not to overdo the top few notes if you wish the "average" hornist to perform your work well (many performers work too hard for those notes and tend to tire easily)</p>
<p>2. Possible playing range</p> <p>(R) ex. 2</p>		<p>-the extremes are extreme; check with your chosen performer first, if at all possible, otherwise avoid</p>
<p>3. Most characteristic sound</p>		<p>-very few technical or musical limitations</p>
<p>4. Greatest power and projection</p>	 <p>(in some cases)</p>	<p>-don't overdo the top few notes</p> <p>-good for controlled softer dynamics</p>

NAME	NOTATION	COMMENTS
5. Lesser power and projection		<ul style="list-style-type: none"> -flexibility problems for some players -often a warm and blending sound especially at soft to medium dynamics
6. Not recommended (though possible) (R) ex. 2		<ul style="list-style-type: none"> -very few players are capable of flexibility within this range -know your performer -use a trombone or tuba if possible
7. Highest note possible		<ul style="list-style-type: none"> -often a pinched sound with some additional static -request "with a clear tone" to guarantee that the performer will not attempt a pitch above his controlled range
8. Lowest note possible		<ul style="list-style-type: none"> -a soggy, uncentered and perhaps wavering sound, very slow to speak -request "with a solid sound" to avoid an over-attempt for range if so desired

III EXAMPLES

All of the following examples are included on the recording and identified by the example numbers (i.e. examples 1 and 2).

Example 1
(No. 1)

Musical score for Example 1, No. 1. The score consists of two staves. The upper staff is in bass clef and the lower staff is in treble clef. The key signature has one sharp (F#). The piece begins with a bass clef, a treble clef, and a common time signature. The first staff starts with the instruction "legato" and "mp". It features a triplet of eighth notes, followed by a triplet of quarter notes, and then two more triplets of eighth notes. The second staff begins with "poco cresc." and "mf", followed by a triplet of eighth notes, a triplet of quarter notes, and a triplet of eighth notes. The piece concludes with "cresc." and "f".

Example 2
(Nos. 2 & 6)

Musical score for Example 2, Nos. 2 & 6. The score consists of two staves. The upper staff is in bass clef and the lower staff is in treble clef. The key signature has one sharp (F#). The piece begins with a bass clef, a treble clef, and a common time signature. The first staff starts with a triplet of eighth notes, followed by a triplet of quarter notes, and then a triplet of eighth notes. The second staff begins with "mp", followed by a triplet of eighth notes, and then a triplet of quarter notes. The piece concludes with "mf".

Chapter 2

MUTES

I. STATEMENT

Muting involves the insertion of a foreign object into the bell of the horn to alter its tone color. For the horn there are two types of mutes which are frequently used, with others possible. The simple directive "mute" means to use the common "straight mute" with which the player need not transpose. The other is the "brass mute" (i.e. transposing mute) which requires a half-step flattening by the player. However, composers need only concern themselves with "horn in F" regardless of muting requirements.

Both mutes tend to strengthen the upper partials in different ways. The "mute" provides a thinner, lighter, more brittle sound than open horn, and the "brass mute" projects a more compressed cutting and strident sound.

Projection is hampered when using a mute, for these reasons: the general lack of resonance caused by the obvious muffling effect requested, the narrowing of the beam of sound along the axis of the bell, and the horn's normal bell position (directed away from the listener). Muted brass instruments are the most effective when a bell-forward seating arrangement is employed.

Dynamics should be consistent with the overall score. The performer must make the adjustments and know the volume

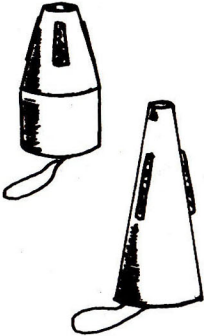
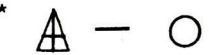


being projected, regardless of the volume one "feels" or the increase of internal pressures within one's head while performing on the various mutes.

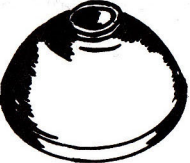
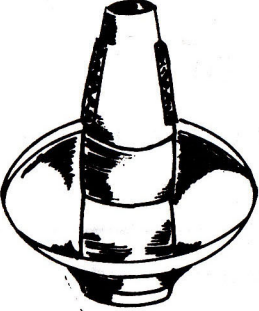

The lack of uniformity among the "straight mute" manufacturers and the preferences of players result in a great variety of sounds when the directive "mute" is used. Materials such as cardboard, various densities of "fiberboard," plastics, and aluminum are in use. Try to know your performer's equipment whenever possible.

There is a large number of objects which may be used as mutes in a horn bell: various bottles, plastic containers, sponges, fabrics, dowels, gourds, styrofoam cups with a hole and tube in the middle (producing a very loud brass mute/stopped horn quality), ad infinitum. The acoustical problems with such exotic requests are equally unlimited. Lack of uniformity in the "mute" shapes and bell-flare openings should be enough to cause the far-sighted composer to avoid most of the above mentioned possibilities.







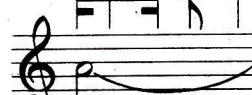
However, combining these most usable mute possibilities with hand-muted sounds (see Chapter 3) within multiple horn groupings would provide the composer with a myriad of timbral possibilities.


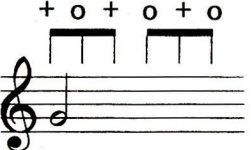
II. SPECIFICS

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>1. Straight mute</p>  <p>(R) ex. 3</p>	<p>mute - open (above the staff) (or)</p> <p>*  (much less frequent)</p> <p>*This symbol () will need a brief explanation on the music</p>	<p>-a less resonant, lighter, more brittle sound</p> <p>-a somewhat muffled and hard quality in soft, and edgy and brassy in the louder dynamics</p>	<p>-attach a string to midcenter of mute to hang from wrist for quick changes</p> <p>-practice with mute to learn new resistances, projection characteristics, and methods for quick changes</p> <p>-try different degrees of insertion for color and dynamics</p>	<p>-allow, at best, 2 seconds or more of silence between muted and open passages (one second is an absolute minimum both before and after)</p> <p>-most effective in upper 2 1/2 octaves (some mutes don't respond well in low registers)</p> <p>-use of "con sord," "sordine," etc. will be widely understood</p>
<p>2. Brass mute (transposing mute)</p>  <p>(R) ex. 3</p>	<p>brass mute -open (above the staff)</p>	<p>-compressed, cutting and strident from mf-fff</p> <p>-somewhat more muffled, and distant from pp-mp</p>	<p>-cork must be tightly flush with the bell</p> <p>-string can be attached at the small end</p> <p>-practice with mute to learn new resistances and projection characteristics</p> <p>-try various cupping positions of the hand around the bell of the mute for quality and projection variety</p> <p>-remember to transpose down one half step, the same as stopped horn</p>	<p>-effective substitute for (+) stopped horn in the lower two octaves</p> <p>-especially effective in louder dynamics</p> <p>-similar to (+) stopped horn in quality but a bit more open, louder and more versatile</p> <p>-allow 3 seconds or more of silence between muted and open passages (both before and after)</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>3. Plunger mute (commercial rubber drain plunger)</p>  <p>(R) ex. 3</p>	<p>plunger - open (above the staff)</p>	<p>-various degrees of dulling of an open horn sound</p> <p>-“wa wa” possible</p>	<p>-lodge the edge of the plunger on the bell portion nearest the leg and close the required and/or requested amount</p> <p>-check pitches</p>	<p>-not frequent</p> <p>-numerous pitch problems</p> <p>-must describe degree of cover desired</p> <p>-avoid the use of the symbols + and o for horn players (See Chapter 3)</p>
<p>4. Cup mute</p>  <p>(R) ex. 3</p>	<p>cup mute - open (above the staff)</p>	<p>-hollow, somewhat covered sound (similar to trombone with cup mute, but warmer)</p> <p>-may project a “jazz-like” quality</p>	<p>-insert tightly</p> <p>-shave corks as needed for pitch and fit</p>	<p>-not frequent</p> <p>-available through only one manufacturer as of this writing</p> <p>-blends well with other brass using cup mutes</p> <p>-few hornists own one</p> <p>-allow 5 seconds of silence - the mute is large and awkward to handle</p>
<p>5. Whisper mute (“Whispa-mute”)</p>  <p>(R) ex. 3</p>	<p>* whisper mute -open (above the staff)</p> <p>* may need a further explanation within the score and part</p>	<p>-very distant, completely muffled, even a stifled sound</p> <p>-almost no resonance, only pitch</p>	<p>-insert tightly and blow firmly against the tremendous resistance</p> <p>-practice with mute to learn of these resistances and the very deceptive lack of projection</p>	<p>-called a “PM Mute” (Practice Mute) by a major manufacturer, for use in apartments and “on-the-road” practicing in motels, etc.</p> <p>-only usable for the softest dynamics</p> <p>-few hornists own one</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>6. Glass mute (12 oz. bottle with small neck)</p> <p>(R) ex. 3</p>	<p>* glass mute -open (above the staff)</p> <p>* will need a further explanation on the score and parts</p>	<p>-a hard, less vibrant sound than a straight mute</p> <p>-not very muffled</p>	<p>-insert and hold stable, almost touching the bell</p> <p>-try various 12 oz. soda or beer bottles for best results</p>	<p>-not frequent but an effective variation on the normal mute sound</p> <p>-requested by Ligeti as a "large round vase with a narrow neck"</p>
<p>7. Cloth mute (medium sized rag stuffed into the bell)</p> <p>(R) ex. 3</p>	<p>* cloth mute -open (above the staff)</p> <p>* will need a complete explanation</p>	<p>-totally muffled</p> <p>-sounds similar to a whisper mute, but with no hardness to the sound and with pitches less centered</p>	<p>-insert a medium size cloth of combed cotton or terrycloth (towel) in far enough to raise the pitch up one half step, then transpose down</p> <p>-practice to learn the resistances and to adjust to the pitch distortions and unstable harmonics</p>	<p>-not frequent</p> <p>-pitch problems (many)</p> <p>-(see 3/4 stopped ⊕)</p> <p>-usable in the middle and upper registers</p>
<p>8. Degrees of muted sound</p> <p>(R) ex. 4</p>	<p>mute (loose) (or) poco sord (or) * ϕ (or) Δ/o * will need explanation</p>	<p>-combination of muted characteristics (see No. 1) and open horn</p>	<p>-hold the mute close to the bell but not touching</p> <p>-be careful of the exact degree of openness in the lower 2 octaves</p>	<p>-allows greater volume and projection</p> <p>-sometimes necessary for good muted results in the lower octaves</p>
	<p>mute ("tight") (above the staff)</p>	<p>-to attain the muffled side of a normal muted quality (see No. 1)</p>	<p>-choose a mute with shallow corks and made of a softer, less vibrant material</p>	<p>-guarantees a fully muted tone</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>9. Gradual changes</p> <p>(R) ex. 5</p>	<p>* </p> <p>* </p> <p>(open-mute-open)</p> <p>* will need a brief explanation</p>	<p>-timbral transition between tight mute through loose mute to a totally open horn sound (no hand in the bell)</p>	<p>-move the mute in and out of the bell without hitting the sides and adjust pitch with aperture</p>	<p>-will cause a smooth transition in the top two octaves</p> <p>-will cause a break at approximately 3/4 to 7/8 closed in the lower octaves (see No. 10)</p> <p>-may result in a raised pitch moving toward the open setting</p>
<p>10. Unmeasured rapid mute changes</p> <p>(R) ex. 5</p>	<p>* </p> <p></p> <p>(or)</p> <p>*  AFAP</p> <p>* will need a brief explanation</p> <p>(AFAP = As Fast As Possible)</p>	<p>-a subtle "wa wa" effect in upper two octaves</p> <p>-causes a break between harmonics in lower two octaves, (see No. 12) as well as a "wa wa"</p> <p>-may project more like a timbral "vibrato"</p>	<p>-same as No. 9 above but much quicker</p> <p>-be careful not to hit the bell</p> <p>-if necessary, slide the mute on one of its corks in contact with the bell surface</p>	<p>-very subdued effect, much less audible than with other brasses</p> <p>-pitch problems will be less obvious when performed AFAP but mute might hit the bell surface</p>
<p>11. Rhythmic mute changes</p>	<p>* </p> <p></p> <p>* will need an explanation</p>	<p>-a prescribed rhythmic application of the subtle "wa wa" effect (see No. 10)</p>	<p>-same as in No. 10 above but in the prescribed rhythm</p> <p>-be aware of possible pitch problems</p>	<p>-(see No. 10)</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>12. Unmeasured rapid mute changes with multiple tonguing</p> <p>(R) ex. 6</p>	<p>* </p> <p>*will need a thorough explanation</p>	<p>-non-coordinated combination effect which works best in 2nd octave because of the additional break (see No. 10)</p> <p>-causes an almost "cartoon-like" sound</p>	<p>-work the mute action as in No. 10 while simultaneously double (or triple) tonguing at an arbitrary rate of speed</p>	<p>-best thought of as a novelty effect if to be heard alone</p> <p>-quite effective in multiple voice groupings</p>
<p>13. Brass mute variations</p> <p>(R) ex. 7</p>	<p>* brass mute</p> <p>+ o + o + o</p>  <p>*will need a thorough explanation</p>	<p>-another "wa wa" effect but with the brass mute quality alternating with a nearly complete muffled sound</p>	<p>-insert mute firmly and alternately work one finger into (+) and out of (o) the bell end of the mute</p> <p>-experiment for the amount of closure most effective</p>	<p>-very subtle, most effective in softer dynamics</p> <p>-a very unique and clever effect</p>

III. EXAMPLES

All of the following examples are included on the recording and identified by the example numbers (i.e. examples 3 - 7).

Example 3

(to be muted in all 7 ways)

(No. 1 - 7)

mf *sfz* *mf*

Example 4

Mute (loose)

Mute (tight)

(No. 8)

f *ff* *mf* *p*

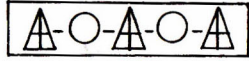
Example 5

Slow



(Nos. 9 -10)

Example 6

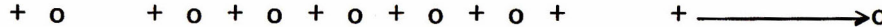


Repeat 3 times

(No. 12)

Example 7

(Brass mute)



(No. 13)

Chapter 3

HAND MUTING

I. STATEMENT

Perhaps the most frequently requested technique for the hornist involves the variable positions of the right hand within the bell and the consequent varieties of timbre. Since the hand-horn period (mid-eighteenth to mid-nineteenth centuries), performers and composers have frequently used the stopped (+) and 3/4 stopped (\oplus) positions of the right hand. The other degrees of stopping used by the hand-hornist seem almost too subtle to be used as coloristic effects on the modern horn.

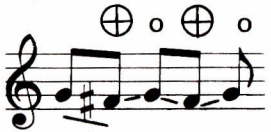
With such popularity it is strange that we find such a great deal of misunderstanding as to how these two effects actually work. I will not try to explain **why**, but only **what** happens. 3/4 stopped (\oplus) (often referred to as 1/2 stopped or echo horn) is simply a lowering of the pitch 1/2 step from the harmonic being buzzed and fingered by the hornist. This causes a gradual descending glissando if done slowly. Stopped horn (+), when in a fully closed position causes the pitch being buzzed to sound the harmonic 1/2 step above the next lower harmonic of the same fingering as the original pitch.¹ This is


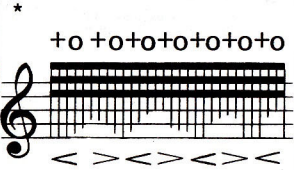
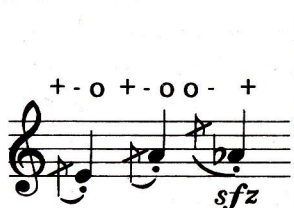
thought of by the player as a sharpening of the pitch by 1/2 step for fingering purposes. To accurately perform a written g^1 , e^1 , and c as notated below, the performer must use fingerings for g^{b1} , e^{b1} , and b to lower those resultant pitches down to the desired written pitch. Thus, both techniques cause a lowering of the pitch acoustically. There is no way in which an ascending glissando from open to stopped horn can take place. Nor is it possible for a gradual shift to be administered without alteration of pitch, if and when the hand drastically changes position within the bell.

An ascending glissando is possible from a closed to open position of the hand. It is recommended that composers use the symbol \oplus (3/4 stopped) when maneuvering half-step activities with open (o) horn. One should be completely familiar with all of the various overtone series and the related fingerings (see Appendix) if requesting stopped horn (+) glissandi. Always remember to notate the pitches (transposed to F horn) to be heard and leave the further transpositioning to the performer.

1.

The diagram illustrates three examples of hand muting on a horn. Each example shows an 'open fingering' (represented by a note with a stem and a dot) and a 'resultant pitch' (represented by a note with a stem and a dot). The first example shows an open fingering of G¹ resulting in a pitch of G¹. The second example shows an open fingering of E¹ resulting in a pitch of E¹. The third example shows an open fingering of C resulting in a pitch of B. In each case, the resultant pitch is lower than the open fingering pitch, and the difference is indicated by an equals sign and a plus sign.

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>1. Stopped horn</p> <p>(R) ex. 8</p>	<p>⊕ ○ (stopped) (open) (or) use the above words</p>	<p>- compressed and nasal quality</p> <p>-very penetrating sound in louder dynamics; somewhat duller and more covered in softer dynamics</p>	<p>-cup hand firmly over entire opening of the bell (do not force inward or the pitch will be sharp)</p> <p>-thumb position pulled slightly backward often helps to attain better seal</p> <p>-blow strongly against resistance</p> <p>-the performer must transpose down 1/2 step (as if E horn)</p>	<p>-top two octaves are certain to get results</p> <p>-lower octaves are often poorly played because of incompatible hand size to bell flare opening or incorrect hand position</p> <p>-use F horn for pitch purposes within the treble clef staff and below</p>
<p>2. 3/4 stopped (or) echo horn (or) 1/2 stopped</p> <p>(R) ex. 9</p>	<p>* ⊕ ○ (3/4 stopped)(open) (or) use the above words</p> <p>* symbol might need to be explained for absolute certainty</p>	<p>-a very covered, distant and muffled quality</p> <p>-most effective from mf-pp</p> <p>-begins to attain nasal sound when played very loudly (especially in the top octave)</p>	<p>-hand position moves to a point where the pitch is lowered 1/2 step (thus, more covered for the upper, less covered for the lower notes)</p> <p>-practice often to learn the various hand positions and thus, varied resistances</p> <p>-the performer must transpose up 1/2 step (as if F# Horn)</p>	<p>-excellent for 1/2 step glissandi (see No. 3, below)</p> <p>-excellent echo effect for dialogues, etc.</p> <p>-use instead of "cloth mute" (see Chapter 2) whenever possible</p> <p>-the term "3/4 stopped" is the most accurate term (rather than "echo" or "1/2 stopped")</p>
<p>3. Half-step hand glissando</p> <p>(R) ex. 10</p>		<p>-a smooth slide to the subsequent note with an obvious tone color change</p> <p>like "ah-oo-ah-oo"</p>	<p>-administer the ⊕ hand position (see No. 2) in rhythm prescribed</p> <p>-listen closely for accurate pitch change</p> <p>-might need to increase air pressure for the ⊕ note (s) to unify dynamics</p>	<p>-a most effective technique</p> <p>-often used</p> <p>-gives a sigh-like sound</p> <p>-also similar to a common electronic oscillation</p>

NAME	NOTATON	EFFECT	TECHNIQUE	COMMENTS
<p>4. Greater than half-step hand glissandi</p> <p>(R) ex. 11</p>	<p>* </p> <p>* this technique might need an explanation due to much misinformation about stopping</p>	<p>-similar to No. 3 but resulting in a more closed, stopped sound</p>	<p>-similar to No. 3 but bring hand into a fully closed stopped position and allow the pitch to dip into place</p> <p>-listen closely for accurate pitch</p> <p>-be fully aware of harmonic series involved and any optional fingerings which might also work</p>	<p>-like knowing the trombone slide positions -know the fingerings and harmonic series relationships (See Appendix)</p> <p>-beyond a 1/2 step dip (see No. 3) this technique can be used on any pitch or microtone before 1/2 step above the next lower harmonic of the same fingering</p>
<p>5. Unmeasured rapid hand changes with multiple tonguing or rapid tonguing</p> <p>(R) ex. 12</p>	<p>* </p> <p>* will need brief description</p>	<p>-non-coordinated combination effect</p> <p>-similar in lower registers with Chapter 2 No. 12, but more effective in top two octaves than the mute</p>	<p>-quickly work into and out of a stopped position without moving the horn and disturbing the aperture</p> <p>-simultaneously tongue as quickly as possible at an arbitrary and unrelated rate of speed</p>	<p>-much more versatile than rapid mute movements and more audible</p> <p>-will cause change of pitch while mute retains the original pitch</p> <p>-volume will fluctuate between the open and closed sounds</p>
<p>6. "Scoop-up" into a note "scoop-down" into a note</p> <p>(R) ex. 13</p>	<p>+ - o + - o o - + </p>	<p>- "scoop-up" is most effective - sounds like "doo-wah"</p> <p>- "scoop-down" is especially effective into a sfz buzzing sound</p>	<p>- "scoop-up"-finger the open note and attack from a lower covered pitch</p> <p>- "scoop-down"-use the resultant stopped note fingering and attack the "grace-note" with that fingering</p>	<p>-not frequent but effective</p> <p>- "scoop-up" tends to have jazz connotations</p>

III. EXAMPLES

All of the following examples are included on the recording and identified by the example numbers (i.e. examples 8 - 13).

Example 8

(No. 1)

Musical notation for Example 8, consisting of two staves of music in 4/4 time. The first staff starts with a piano (*p*) dynamic and features a melodic line with a first ending bracket over the final two measures. The second staff continues the melody, including a triplet of eighth notes and a fortissimo (*f*) dynamic marking. The piece concludes with a sforzando (*sfz*) dynamic marking.

Example 9

(No. 2)

Musical notation for Example 9, a single staff in 3/4 time. It begins with a piano (*p*) dynamic and includes a first ending bracket with two endings. The notation includes a circled plus sign (+) above a note and a circled 'o' above a note.

Example 10

(No. 3)

Musical notation for Example 10, a single staff in 4/4 time. It starts with a forte (*f*) dynamic and features a melodic line with several circled plus signs (+) above notes. The dynamic markings transition from forte (*f*) to fortissimo (*ff*) and finally to pianissimo (*pp*).

Example 11

(No. 4)

Musical notation for Example 11 (No. 4) on a treble clef staff. The notation includes a series of notes with stems and beams, and dynamic markings *p* and *sfz*. Above the staff, there are rhythmic symbols: $o \rightarrow + \rightarrow o$, $, + \rightarrow o$, and a sequence of $o + o + o + o + o + o + o + o +$.

Example 12

(No. 5)

(see Chapter 2
Example 6)

Musical notation for Example 12 (No. 5) on a bass clef staff. The notation includes a series of notes with stems and beams, and dynamic markings *ff*. Above the staff, there are rhythmic symbols: $+ o + o + o + o + o + o +$, $+ o + o + o + o + o +$, and $+ o + o + o + o + o + o + o + o + o + o + o + o +$. The text "Repeat 3 times" is written above the second part of the notation.

Example 13

(No. 6)

Musical notation for Example 13 (No. 6) on a treble clef staff. The notation includes a series of notes with stems and beams, and dynamic markings *ff*. Above the staff, there are rhythmic symbols: $+ - o$, $+ - o$, $+ - o$, $+ - o$, and $o - +$ with a triplet bracket over the last two. The text "Repeat 3 times" is written above the last part of the notation.

Chapter 4.

TONGUING/ARTICULATIONS

I. STATEMENT








In this chapter we deal with the “consonant” potentials of the horn; the beginning (transient) and end (decay), or attack and release of the tone.


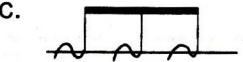
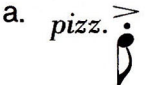


The general quality of the horn transients is a bit less defined than those of the trumpet and trombone, especially when desiring incisive, crisp attacks. However, the horn provides great potential on the smoother end of the spectrum. The horn is capable of matching all articulations required of the other brasses with the possible exception of the “rebound-tongue” and very soft flutter tonguing in the lower registers. Both of these techniques are more easily executed

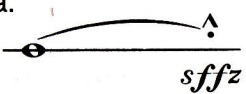
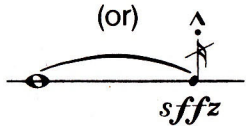

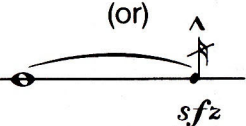



on the somewhat more resistant, cylindrical bore instruments (such as trumpet and trombone.)

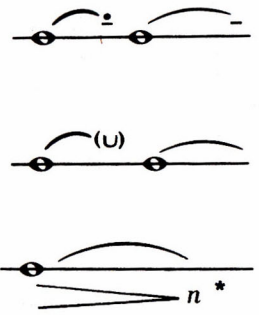
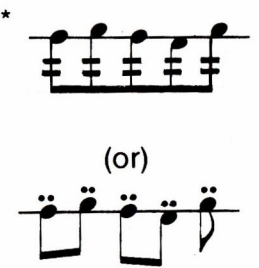
Included below are some of the more acceptable notations for the various degrees of attack and release. Multiple tonguing (i.e. double-tongue and triple-tongue) is not often requested by the composer as a specific “effect,” but is used, as needed, by the players when quicker tempos or certain suggested nuances are present. Since we are dealing primarily with the peripheries of sounds, an air intensity “articulation” is also included (see No. 3).




II. SPECIFICS


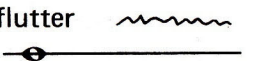
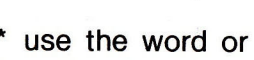

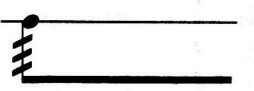
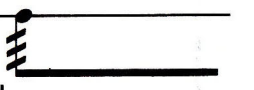
NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
1. Punctuated, aggressive transients (R) ex. 14	a. 	-most aggressive and shortest possible articulation	-compress a substantial amount of air behind the tongue-release and stop tone immediately with tongue ("tut")	-has an explosive quality -most effective in top 2 1/2 octaves
	b. 	-aggressive attack but with more length	-same transient as above but end with an air release ("ta")	-acceptable in lower registers, also
	c. 	-progressively less aggressive, but all short notes	-progressively less air compression behind tongue setting, each with an air suspension release	-the first of these four might suggest a tongue release to a player
2. Less punctuated transients, though detached	a. 	-normal accentuated articulation	-enough air compression to set the note apart - still use initial "t"	-for simple, non-blatant emphasis
	b. 	-definite, unaccented with a distinct separation	-clear attacks (soft "t") with air suspended silences	-may be interpreted as breath marks by some players
	c. 	-progressively longer note lengths, but both detached	-clear attacks with no accent, but with air follow-through to a sudden, though unaccented release	-suggests a squared-off quality to the tone shape
3. Smoother, or "softer" transients (R) ex. 15	a. *  * will need an explanation	-smooth, gentle, and more delicate articulation	-use the consonants "D," "L," or "N," with a gentle air release	-simple use of the word "legato" might be better -notation may be confused with "bend" (see Chapter 6 No. 12)

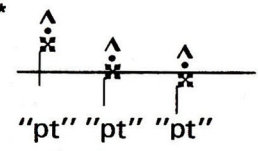
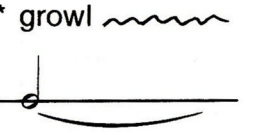
NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
3. (cont.) (R) ex. 15	b. *  * will need an explanation	-nearly "inaudible" beginning to the sound - the most quiet of transients	-attack without the use of the tongue -begin with the air as in the sound "ha"	-demands a sensitive aperture and is most easily done within the middle two octaves
(R) ex. 15	*  * will need an explanation	-a throbbing repetition of tones, distinct palpitations	-attack without the use of the tongue ("h") and rhythmically undulate the air flow	-will also result in a possible fluctuation of pitch along with the volume and intensity (like a slow vibrato)
4. Miscellaneous transients	a. 	-a short accented note resembling a plucked string sound	-attack with deliberateness and simulate the resonance of a string decay (quick but existent diminuendo)	-thought of as a type of attack, but unique quality comes in the release of sound -works well
	*  * will need an explanation	-unclean attack -intentionally indiscriminate noise (non-pitch) before the note	-aim close to the note, with perhaps a different fingering, attack roughly and slip quickly into the desired pitch -experiment for most effective noise	-experiment with your performer if possible
(R) ex. 16	stacc → legato  c.	-gradual change from crisp distinct attacks to smooth and gentle ones with less separation	-gradual shifting of the amount of air seal set by the tongue from "t" through "d" to "l" and/or "n"	-reverse and combinations are also very effective

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>5. Abrupt and accented releases</p> <p>(R) ex. 17</p>	<p>a.</p>  <p>(or)</p> 	<p>-aggressive exaggerated abruptly stopping the tone</p>	<p>- while sustaining the tone, quickly accentuate with a drastic burst of air and cut off with the tongue (like saying "what")</p>	<p>-this and some of the other accented releases give an impression of a reversed tape recording</p> <p>-very effective</p>
<p>(R) ex. 17</p>	<p>b.</p>  <p>(or)</p> 	<p>-similar to the above but less clipped off</p>	<p>-accent this release with a burst of air but end with air suspension not with the tongue (like saying "wha")</p>	<p>-equally effective but less aggressive</p>
<p>(R) ex. 17</p>	<p>c.</p>   <p>(or)</p> 	<p>-progressively less accented, yet definitely clipped releases</p>	<p>-as with the first of No. 5, end each of these with the tongue ("t") but with progressively less air accent</p>	<p>-a possible way to establish a definite point of release</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>6. Smooth releases and decays</p>	 <p>*n = "niente" (to nothing) may need an explanation</p>	<p>-progressively less exact releases, from a gentle suspended sound to a dying away into nothing</p>	<p>-each suggests a greater degree of diminuendo resulting in a suspended air stream and, perhaps, an "opening away" of the aperture (rather than a pinching shut of the aperture)</p>	<p>-excellent way to draw attention to the ends of sensitive phrases so that they will not be too abrupt</p> <p>-replace the notation "n" with "silence" if clarity is needed</p>
<p>7. Double tonguing</p> <p>(R) ex. 18</p>	 <p>* will need a brief explanation</p>	<p>-rapid double repetitions of the given pitches in an even rhythm</p> <p>-legato or *"indistinct" tonguing could also be requested for a smoother effect</p> <p>* (labeled "didl" by some)</p>	<p>-rapidly form the consonances "t" and "k" as equally as possible over a consistent and open air flow</p> <p>-for legato or "didl" (indistinct) tonguing use the consonances "d-g" to "d-l" depending on degree of legato</p>	<p>-should sound no different than a successful single tongue</p> <p>-multiple tonguing is used automatically by players at extremely fast tempos without being specifically notated</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>8. Triple tonguing</p>	<p>*</p>  <p>(or)</p>  <p>* will need a brief explanation (be sure the lines are not angled as if "flutter-tongued," (see below)</p>	<p>-rapid triple repetitions of the given pitches in an even rhythm</p> <p>-legato to "indistinct" tonguing also possible (see No. 7)</p>	<p>-rapidly form the consonances "t-k-t" or "t-t-k" (whichever is most even for you) with equal quality over a consistent and open air flow</p> <p>-legato options also possible (see No. 7) ("d-g-d" to "d-l-la")</p>	<p>-(see No. 7)</p> <p>-thus, No. 7 and No. 8 are more techniques than effects, unless a specific label (i.e. "didl," which will need an explanation) is used for an extreme legato effect</p>
<p>9. Rapid irregular tonguing</p> <p>(R) ex. 19</p>	<p>*</p>  <p>* will need a description</p>	<p>-erratic, rapidly articulated pitches</p>	<p>-mix rapid single, double and triple (not flutter) in an irregular manner as appropriate to the musical moment</p>	<p>-quickly administered, improvisatory request</p> <p>-most effective as an angry and aggressive effect</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>10. Flutter-tongue</p> <p>(R) ex. 20</p>	<p>*  a. (or)  flutter </p> <p>* use the word or <i>fltz.</i> the first time this notation is used for certain clarity</p>	<p>-very rapid articulated pulsations of the tone - quite aggressive when loud, even angry</p>	<p>-curl the flattened tongue upward in a relaxed, yet firm manner against the roof of the mouth allowing it to "flutter" with a consistent air stream - the actual flutter feeling may occur on one side or the other, not the center of the tongue</p>	<p>-a very popular technique largely because of its power and projection from mf - fff</p> <p>-some players have trouble in the extreme upper registers, and at very soft dynamics in the mid and low ranges</p>
<p>(R) ex. 20</p>	<p>(irregular)  b.</p>	<p>-a starting and stopping of the flutter in an irregular manner</p>	<p>-self explanatory</p>	<p>-erratic and effective</p>
	<p>* (gradually faster)  c. * will need an explanation</p>	<p>-a gradual increase in the rate of repetitions of the flutter</p>	<p>(see "comments")</p>	<p>-these two requests have been made but are, with most all players, nearly impossible to execute effectively or audibly on the horn</p> <p>-perhaps a crescendo or diminuendo will suffice in their place</p>
	<p>* (gradually slower)  d. * will need an explanation</p>	<p>-a gradual decrease in the rate of repetitions of the flutter</p>	<p>(see "comments")</p>	<p>-not recommended</p>

NAME	NOTATION	EFFECT	COMMENTS	TECHNIQUE
<p>11. "Split tongue attacks"</p> <p>(R) ex. 16</p>	<p>* </p> <p>* will definitely need an explanation</p>	<p>-very short, loud, sudden indiscriminate pitch</p> <p>-similar to a "stop tongue" on the saxophone but much less controlled</p>	<p>-purse lips together in a tight aperture (like the consonant "p") and force out what little air is between the tongue and the aperture approximating the double consonant "pt"</p>	<p>-useful and somewhat novel effect</p> <p>-general pitch levels are controllable but definite pitches are not</p> <p>-the sound is almost all transient</p>
<p>12. "Growl"</p>	<p>* growl </p> <p>*might need a brief explanation</p>	<p>-a very rough, dirty sound like an uncontrolled flutter-tongue</p>	<p>-blow aggressively against a constricted upper throat producing a growling sound</p>	<p>-not easily controlled and does put a strain on the player's throat, thus should not be over-used</p> <p>-only useful in mid-range dynamics with most players</p> <p>-use flutter-tongue instead, whenever applicable</p>

III. EXAMPLES

All of the following examples are included on the recording and identified by the example numbers (i.e. examples 14 - 20).

Example 14

(No. 1a.b.c.)

Musical notation for Example 14, No. 1a.b.c. The piece is in 4/4 time. The notation includes accents (^) over the first notes of several measures. Dynamic markings include *sfz* (sforzando) and *sfz sfz* (sforzando sfzando). There are also slurs and a fermata over the final notes.

Example 15

(No. 3a.b.c.)

Musical notation for Example 15, No. 3a.b.c. The piece is in 2/4 time. It features triplets of eighth notes and sixteenth notes, indicated by a '3' and a bracket. There are also slurs and dynamic markings including *pp* (pianissimo), *p* (piano), and *h* (hairpins). The notation ends with a fermata.

Example 16

(No. 4c, No. 11)

Musical notation for Example 16, No. 4c, No. 11. The notation includes accents (^) and dynamic markings for *stacc.* (staccato) and *legato*. There are slurs and a fermata over the final notes. The text "pt" "pt" simile is written below the first few notes.

Continuation of the musical notation for Example 16, No. 4c, No. 11. It shows a series of notes with accents (^) and dynamic markings for *stacc.* and *legato*. The text "simile" is written below the first few notes of this section.

Example 17

(No. 5a.b.c.)

slowly

f sfz sfz sfz sfz mf

Example 18

(No. 7)

(♩ = 120)

f ff p subito ff p n
 ("didl") ("didl")

Example 19

(No. 9)

sفز

Example 20

(No. 10a.b.)

mf sfz (irreg.) sfz mp f (irreg.)

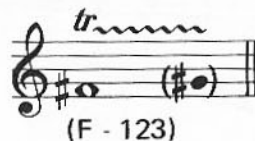
Chapter 5

TRILLS AND TREMOLOS

I. STATEMENT

This chapter deals with the techniques causing rapid fluctuation between varied pitches, and in one case, between enharmonic pitches. We shall refer to all pitch alternations of a whole step or less as trills and all others as tremolos.

There are two ways to produce trills and tremolos; one by use of the valves and the other with an advanced lip/air/tongue coordination often called a "lip trill." Flexible players are capable of both. A "lip trill" can take place only between two notes with the same fingering (i.e. within the same harmonic series), so one should study the complete fingering chart in the appendix to be certain of the potentials of the requested effect. "Lip trills" of a whole step begin at:

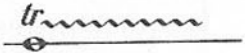

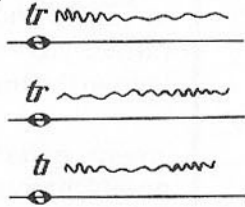


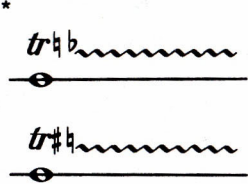

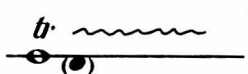
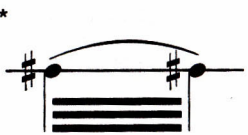
and extend into the upper range. Below that, one begins to hear the sixth and seventh harmonics if lipped. However, that effect, to just below the staff, is an effective tremolo if the performer can do it without valves.

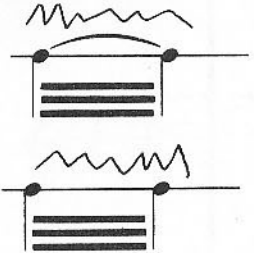
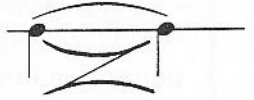
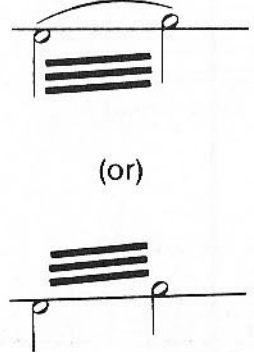
Valve trills and tremolos are cleanest when the performer chooses fingerings which shorten the tubing for an ascending motion and require the movement of only one valve.

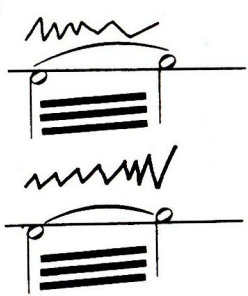



II. SPECIFICS

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>1. Trills</p> <p>(R) ex. 21</p>		<p>-rapid movement between the written pitch and the next higher note within the key signature or as altered by an accidental within the measure</p>	<p>-“lip trill” if possible between two harmonics of the same series</p> <p>-if not possible, discover best fingerings for a clear and rapid change</p>	<p>-there are only a few trills which might sound awkward</p> <p>-generally a fine option throughout the registers for all half-step trills</p>
<p>2. Microtone trills (See Chapter 10)</p>	<p>*</p>  <p>* will need full explanation with optional fingerings if possible</p>	<p>-trill to the smallest possible interval either above or below the given pitch as the arrowhead indicates</p>	<p>-see Chapter 10 for reference to quartertone possibilities</p> <p>-options include inexact “enharmonic” fingerings, 1/4 tone fingerings, pitch vibrato, or moderate right hand changes within the bell.</p>	<p>-very effective if a microtonal fingering is possible, otherwise it will sound like a wide vibrato, or perhaps a “wa-oo-wa-oo” effect if the hand in the bell is used</p>
<p>3. Flexible speed trills</p> <p>(R) ex. 22</p>	<p>*</p>  <p>* may need a brief explanation for clarity</p>	<p>-a gradual decrease or increase in the normal trill activity</p>	<p>-good idea to practice “lip trills” with this effect in mind for ultimate control</p> <p>-valved trills should be no problem</p>	<p>-wavy line should relate proportionally to the pulses within the measure or the notated time flow if exactness is necessary</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
4. Alternate trills	<p>* </p> <p>* explain</p>	<p>-alternating the motion between half steps and whole steps</p>	<p>-would always be a fingered pattern</p> <p>-take the time to try all options</p>	<p>-could result in a very awkward sound</p> <p>-coordination might be difficult in some cases</p>
5. Irregular trill (R) ex. 23	<p>* </p> <p>(irreg.)</p> <p>* might need an explanation for clarity</p>	<p>-constant alternating between accel. and rall. of the trill motion</p> <p>-a very anxious and nervous effect</p>	<p>-administer trill in an erratic manner as appropriate to the context</p>	<p>-could add words like "sloppy," "wild," "nervous," or "anxious," to clarify your intent</p>
6. Lower note trill	<p></p>	<p>-self explanatory</p>	<p>-self explanatory</p>	<p>-frequently used (i.e., in Hindemith)</p>
7. Trill or tremolo to open tube.	See Chapter 14 - MISCELLANEOUS No. 2			<p>-a useful but often inexact effect</p>
8. Valve tremolo (see Chapter 7, No. 6) (R) ex. 24	<p>* </p> <p>*may need an explanation</p>	<p>-a rapid, subtle fluttering on a single pitch</p> <p>-less rough than most tonguing</p> <p>-can be very fast depending on enharmonic fingering possibilities</p>	<p>-quickly alternate between two fingerings for the same pitch</p> <p>-if speed is desirable use a single valve change</p> <p>-if noise between notes is desirable, the more valves being used, the greater the disturbance</p>	<p>-a subtle and often desirable alternative to rapid articulation or "slow flutter-tonguing"</p> <p>-check enharmonic fingerings, and notate if you have a preference</p>

NAME	EFFECT	NOTATION	TECHNIQUE	COMMENTS
<p>9. Flexible speed valve tremolos</p> <p>(R) ex. 25</p>	<p>*</p>  <p>* will need full explanation</p>	<p>-gradual decrease or increase in the speed of the valve tremolo</p>	<p>-self explanatory (See No. 8)</p>	<p>-(see No. 8)</p>
<p>10. Irregular valve tremolos</p> <p>(R) ex. 25</p>	<p>*</p>  <p>* will need full explanation</p>	<p>-constant alternating between accel. and rall. of the tremolo motion</p>	<p>-alternate fingerings in an erratic manner</p>	<p>-as in No. 5 above can give an anxious and nervous feeling</p>
<p>11. Tremolo</p> <p>(R) ex. 26 & 27</p>	 <p>(or)</p>	<p>-a smooth and rapid movement between the two written pitches</p> <p>-though not always marked as such, these are to be slurred, not tongued</p> <p>-might simulate a jazz "shake" in some cases</p>	<p>-find the smoothest possible fingering and coordinate the fingers with the lip, tongue, and air into a rapid undulation between the pitches</p> <p>-if the pitches are within the same harmonic series administer as if an augmented "lip-trill" when feasible</p>	<p>-as notated, these will take up two beats in a 4/4 measure</p> <p>-smaller intervals of the same harmonic series will be quicker</p> <p>-may sound awkward and slow compared to other instruments</p> <p>-extreme high range can be treacherous</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>12. Flexible speed tremolos</p>	<p>* </p> <p>* will need an explanation</p>	<p>-gradual decrease or increase in the speed of the tremolo</p>	<p>-self explanatory (See No. 11)</p>	<p>-(see No. 11)</p>
<p>13. Irregular tremolos</p>	<p>* </p> <p>* will need an explanation</p>	<p>-constant alternating between accel. and rall. of the trembling motion</p> <p>-a very anxious and nervous effect</p>	<p>-administer the tremolo in an erratic manner as appropriate to the context</p>	<p>-could add words like "sloppy" or "wild" or "dirty" (etc.) for additional qualities which would clarify your intent</p>

III. EXAMPLES

All of the following examples are included on the recording and identified by the example numbers (i.e. examples 21 - 27).

Example 21

(No. 1)

Musical notation for Example 21 (No. 1) in 4/4 time. The piece begins with a piano (p) dynamic. It features several trills (tr) and a trill with a sharp sign (tr#). The notation includes triplets (3) and a fermata (n) over the final notes.

Example 22

(No. 3)

Musical notation for Example 22 (No. 3) in 4/4 time. The piece starts with a piano (p) dynamic and features a series of trills (tr) with a crescendo leading to a mezzo-forte (mf) dynamic, followed by a decrescendo to mezzo-piano (mp), and finally a crescendo to forte (f) with a fermata (n) at the end.

Example 23

(No. 5)

Musical notation for Example 23 (No. 5) in 4/4 time. The first part is in bass clef and marked "(nervously)". It features trills (tr) and a trill with a flat sign (trb). The second part is in treble clef and features trills with flats (trb) and trills with sharps (tr#).

Example 24

(No. 8)

Musical notation for Example 24 (No. 8) in 4/4 time, marked "Slowly". The piece starts in 4/4 time and changes to 6/4 time. It features triplets (3) and dynamics including mezzo-forte (mf), piano (p), fortissimo (ff), and mezzo-piano (mp).

Example 25

(Nos. 9-10)

Musical notation for Example 25, consisting of a single staff in treble clef. The piece begins with a tremolo on a low note, followed by a series of chords. Dynamic markings include *mf*, *sfz*, *mp*, and *sfz*. The notation includes various articulations such as slurs and accents.

Example 26

(No. 11 - like fingerings)

Musical notation for Example 26, consisting of a single staff in treble clef. The piece is marked "Slowly" and includes performance instructions: "(Bb:0)", "(Bb: 1)", "(Bb: 23)", and "(F: 12)". The notation features slurs, ties, and various articulations.

Example 27

(No. 11 - unlike fingerings)

Musical notation for Example 27, consisting of a single staff in treble clef. The notation includes slurs, ties, and various articulations, illustrating "unlike fingerings" for No. 11.

Chapter 6.

GLISSANDOS

I. STATEMENT




The glissando is another frequently used musical gesture which provides many opportunities for the composer. In general, a glissando is a rapid sliding across neighboring notes. This can be done on the horn by: (a) fluttering the valves while ascending or descending with the aperture, (b) remaining with a single fingering during the aperture change and sounding the notes of the resultant harmonic series, (c) using half-valve combinations causing a smooth whine (with some probable breaks in the slide), (d) adjusting the hand in the bell for smooth slides of a limited range, (e) bending a pitch


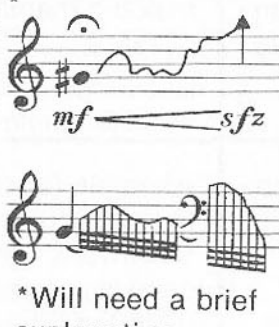
downward simply with the aperture and tongue, or (f) using combinations of the above. These are the basic techniques used to create a much larger number of effects.

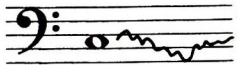



The horn's glissando capabilities are exceptional among the brasses due largely to the high placement within the overtone series (causing closer harmonics), the bending potentials especially in the lower register, and the right hand's placement within the bell. Glissando-related jazz effects found often in the music for trumpet, trombone and tuba are equally possible and effective on the horn.





Note: An additional glissando effect (amplified mouthpiece glissando) is discussed in Chapter 13.



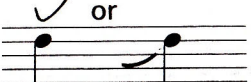


II. SPECIFICS

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>1. Glissando (R) ex. 28</p>		<p>-a rapid and even slide across the sounds available between the two given pitches, all within the metrical length of the first note</p>	<p>-after a secure attack on the initial note, slide, within the given metrical time span, to the top note by either rapidly fluttering the valves for a busy sound, or by fingering the first note, glissing on the F horn 123 and landing on the top pitch (in time) with its proper fingering (especially useful for a very quick gliss.)</p>	<p>-both notations are common and will need no explanation (the second notation may be thought of as smoother)</p> <p>-with these notations the player will normally try to make the most number of sounds between the notes and obscure any strong reference to a particular series of pitches</p>
<p>2. Harmonic glissando (R) ex. 29</p>		<p>-rapid and even slide through the overtones represented by the given pitches, all within the notated length of the first note</p>	<p>-after a secure attack on the initial note, engage the necessary valves to sound the harmonic series suggested, slur upward or downward sounding that series and engage the most secure fingering for the final note upon arrival</p>	<p>-this notation assures the composer of a specific sounding glissando</p> <p>-does tend to have such a strong tonal connotation as to sound trite if used too frequently or if incorporated into an atonal context; this is especially true in the middle two octaves where the harmonics are farther apart</p>
<p>3. Chromatic glissando (R) ex. 29</p>		<p>-a quick, fluttering, even slide between two closely positioned notes</p>	<p>-engage the valves as accurately as possible within the given metrical time span</p> <p>-be more concerned with the rapid glissando effect than with an accurate sounding of a sonorous chromatic scale</p>	<p>-this notation assures the valve flutter effect with a sense of an organized and symmetrical pitch placement</p> <p>-if requested too slowly the glissando effect will not occur and one will hear a rapid chromatic scale</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
4. Valve flutter glissando (R) ex. 30		<p>-a more erratic rapid and rough glissando</p> <p>-an aggressive sound at louder dynamics</p>	<p>-simply flutter valves in an unplanned or random fashion while slurring to the final pitch within the given metrical time span</p>	<p>-use the directive "valve gliss." for a clear distinction from the more general indication given in No. 1 above</p> <p>-recommended for the longer glissandos in the middle and lower octaves</p>
5. Contour glissando (R) ex. 30	 <p>*Will need a brief explanation</p>	<p>-a smooth, elongated, gliding glissando which follows the approximate contour designated in the notation</p>	<p>-use a half-valve setting or various half-valve settings which will allow for the smoothest contour and the least number of breaks between the harmonics</p> <p>-blow louder than suggested to compensate for the constricted sound of the half-valve</p>	<p>-do suggest the use of half-valve in the parts</p> <p>-expect a more constricted sound between the outer notes</p>
6. Half-valved glissando	(See Chapter 7, No. 4)	-(see Chapter 7 - HALF-VALVED EFFECTS)	-(see Chapter 7 - HALF-VALVED EFFECTS)	-sometimes referred to as the "true glissando" because of its potential evenness in certain registers
7. Hand glissando	(See Chapter 3, Nos. 3 and 4)	-(see Chapter 3 - HAND MUTING)	-(see Chapter 3 - HAND MUTING)	<p>-use of the right hand in the bell for a smooth descending sigh or ascending scoop of smaller intervals</p> <p>-a special quality which is unique to the horn</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>8. Oscillating glissando</p> <p>(R) ex. 31</p>	<p>*</p>  <p>* will need a brief explanation</p>	<p>-an arbitrary wobbling about a given pitch</p> <p>-given the impression of the distant undulations of an engine when notated in the lower octaves</p>	<p>-bend the given pitch with the aperture and the tongue position alone in the lower two octaves</p> <p>-for the upper octaves use the right hand position as well to produce the uneven bending effect</p>	<p>-tone color will remain generally constant in the lower two octaves</p> <p>-the lower you go, the greater amount of pitch bending is possible, especially below the given pitch</p> <p>-the necessary use of varied hand positions in the upper octaves will result in audible timbral changes</p>
<p>9. Interrupted glissando</p> <p>(R) ex. 32</p>		<p>-the sounding of a point or points of interruption within a glissando</p>	<p>-use the most effective technique discussed above (within the given context) with interruptions as notated</p>	<p>-an effective way of working melodic materials into a glissando passage</p>
<p>10. Slow glissando or sag</p>	<p>(a.)</p>  <p>slow <i>gliss.</i></p> <p>(b.)</p> 	<p>-a very gradual slide to the resultant note</p> <p>-example (a.) would be bent by distorting the aperture size (etc.) while (b.) would be done through a timbral distortion of the note</p>	<p>-the bending of a harmonic in such a manner is an extension of No. 8 above</p> <p>-for example (b.) see Chapter 3, Nos. 3 & 4</p>	<p>-example (a.) is especially effective in the lower octaves, usually downward, however an ascend-bend is possible but from an initially distorted pitch</p> <p>-limited half-valve possibilities (see Chapter 7)</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
11. Fast glissando		<p>-same as No. 1 above but with no resultant or final pitch, thus a quick glissando away from a single notated pitch</p>	<p>-quickly alter the aperture, tongue and air stream in the direction of the notated gliss, with a diminuendo to silence</p> <p>-use either the fingering of the notated pitch throughout the gliss. or flutter the valves</p>	<p>-actually serves as an unending glissando sounding like either a sudden burst of energy (ascending) or loss of energy (descending)</p> <p>-the term "rip" is used at times, for this type of gliss, but should be saved for the jazz-like gesture (see No. 17)</p>
12. Bend or dip (R) ex. 33	<p>* ~ or</p>  <p>* will need an explanation</p>	<p>-a brief loss of intensity within a note, returning to normal rather quickly</p> <p>-will cause a sag or dip in the actual pitch</p>	<p>-a brief relaxation of the aperture and air stream in mid-note with a return to normal</p> <p>-or a slight covering with the right hand in the bell returning to the normal open position</p>	<p>-gives a note that "blue note" character</p> <p>-a sort of lazy sound gesture</p>
13. Doink or doit (R) ex. 33	<p>*</p>  <p>* may need a brief explanation</p>	<p>-a quick ascending flip of sound with a diminuendo to nothing sounding like the word "doink"</p>	<p>-see No. 11 above and apply the diminuendo quickly</p> <p>-might be effective in certain ranges to use some half-valve combinations</p>	<p>-is a very unique effect, like a musical wink</p> <p>-the term "doit" is, perhaps, more common in jazz circles</p>
14. Fall-off or drop (R) ex. 33		<p>-a sudden loss of pitch with a quick diminuendo to nothing</p>	<p>-a sudden relaxation of the aperture and the air stream while using an arbitrary flutter of the fingers</p>	<p>-like a last gasp or a sigh depending on the volume</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
15. Spill (R) ex. 33		-a chromatically related falling of pitches causing a similar glissando to No. 3 above with no resultant or final pitch	-a sudden relaxation of the aperture and the air stream while fingering a chromatic scale at least to begin the glissando, a simple valve flutter might be best after it has begun	-similar to No. 14 above but somewhat more refined and controlled with a slight melodic suggestion
16. Flip (R) ex. 34	*  * will need a brief explanation	-a brief rise and sudden fall-off from the notated pitch	-sound the pitch, pinch the aperture slightly and then relax into an incomplete fall-off (see No. 14 above)	-a combination of No. 13 & No. 14 above with less of a fall -sounds something like a squeal
17. Rip or "Smear" (R) ex. 34	*  * will need a brief explanation	-a quick scoop upward into the notated pitch	-starting from an unprepared pitch level, briefly flutter the valves as you scoop into the notated pitch timed like a grace-note	-inconsistently used pair of terms; "smear" often used for a dirty, erratic and excessively wide jazz trill, and "rip" occasionally as in No. 11 above
18. Lift or flare (R) ex. 34		-a chromatically oriented scoop upward as in No. 17 above with slightly greater duration	-choose an effective pitch below the notated pitch and quickly crescendo through the chromatics up to that notated pitch allowing a bit more time than a grace-note	-similar to No. 17 above but somewhat more refined and controlled with a slight melodic suggestion
19. Plop (R) ex. 34	*  * will need a brief explanation	-a quick drop downward into the notated pitch	-starting from an unprepared pitch level, briefly flutter the valves as you drop into the notated pitch timed like a grace-note	-produces a less accented effect than a rip (see No. 17 above) -a unique effect like a subtle laugh

III. EXAMPLES

All of the following examples are included on the recording and identified by the example numbers (i.e., examples 28 - 34).

Example 28

(No. 1)

Musical notation for Example 28 (No. 1) in 2/4 time. The melody consists of eighth and quarter notes with various accidentals (sharps, naturals, flats) and rests. The piece concludes with a double bar line.

Example 29

(Nos. 2 - 3)

Musical notation for Example 29 (Nos. 2-3) in 2/4 time. The piece features three phrases of sixteenth-note glissandos. The first phrase starts at *mf* and ends at *ff*. The second phrase starts at *mf* and ends at *ff*. The third phrase starts at *ff* and ends at *f*. Each phrase is marked with *gliss.* and includes a fermata over the final note.

Musical notation for Example 29 (Nos. 2-3) in 2/4 time. The piece features three phrases of sixteenth-note glissandos. The first phrase starts at *f* and ends at *mf*. The second phrase starts at *mf* and ends at *mp*. The third phrase starts at *mp* and ends at *pp*. Each phrase is marked with *gliss.* and includes a fermata over the final note.

Example 30

(Nos. 4-5)

Musical notation for Example 30 (Nos. 4-5) in 2/4 time. The piece begins with a *pp* dynamic and a *cresc. molto* marking. The first phrase is a sixteenth-note glissando marked *valve gliss.* that reaches a *ff* dynamic. The second phrase is a quarter-note melody starting at *mf*. The piece concludes with a double bar line.

Example 31

(No. 8)

Musical notation for Example 31 (No. 8) in bass clef. The piece begins with a *mf* dynamic and a wavy line. It then transitions to a treble clef with a wavy line and a *f* dynamic. The final section features a *f* dynamic and a wavy line that ends with a *n* (noisier) dynamic.

Example 32

(No. 9)

Musical notation for Example 32 (No. 9) in treble clef. The piece consists of a series of eighth notes with various accidentals (sharps, flats, naturals) and rests, ending with a double bar line.

Example 33

(Nos. 12-15)

Musical notation for Example 33 (Nos. 12-15) in treble clef, 4/4 time. The piece features eighth notes, quarter notes, and rests, with a triplet of eighth notes in the final measure. It ends with a double bar line.

Example 34

(Nos. 16-19)

Musical notation for Example 34 (Nos. 16-19) in treble clef, 4/4 time. The piece features eighth notes, quarter notes, and rests, with triplets of eighth notes in the final two measures. It ends with a double bar line.

Chapter 7.

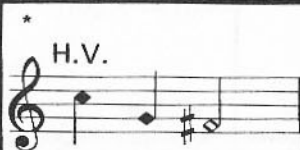
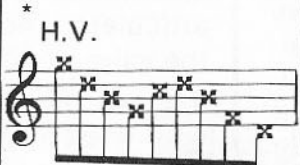
HALF-VALVED EFFECTS


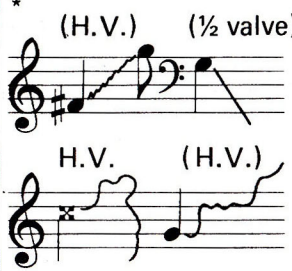
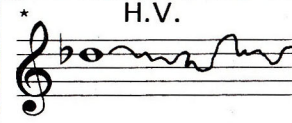

I. STATEMENT

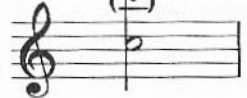
The technique of partially engaging one, some or all of the valves causes two important results: (1) the color of the sound becomes choked-off or constricted with a lesser degree of resonance, and (2) the stability of the harmonic "notch" becomes non-existent, thus allowing for a potentially smooth slide across

various pitches. This latter effect is limited, and breaks in the suggested slide occur depending on the amount of key depression, the valves engaged, the design of the specific horn's valve structure and the skill of the performer

II. SPECIFICS

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
1. Half-valve (definite pitch) (R) ex. 35	* H.V.  * will need brief explanation	-a choked-off and somewhat uncentered, unstable sounding of the notated pitches -lesser projection than an open horn with the same dynamic indication	-depress the keys as far as needed to cause the suggested effect and center the aperture and air on the given pitches -experiment with all possible combinations including some fully depressed keys	-use diamond-shaped note-heads while applying all other aspects of traditional notation -a "feeble" quality at times -do not expect rapid flexibility with exact pitches (see No. 2) -the more valves engaged the more choked the quality of sound
2. Half-valved (indefinite pitch) (R) ex. 36	* H.V.  * will need brief explanation	-a choked-off and somewhat uncentered quality on the suggested contour and at only the approximate pitch levels	-depress the keys as suggested above and perform the general contour and the exact rhythm notated	-effective for rapid motives and short notes -there will be actual pitches but the diffused center will render them indefinite at a quick tempo

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
3. "Ghost tones" (R) ex. 37	 <p>* will need brief explanation</p>	<p>-nearly inaudible indefinite pitch which is usually implied harmonically</p>	<p>-use a half-valve on the "ghost tone" and aim in the general vicinity of the pitch, perhaps even sounding the implied pitch</p> <p>-allow the air support to slacken on those "tones"</p>	<p>-common effect in jazz of "swallowing" certain less significant notes</p> <p>-the use of half-valve is not always necessary for this effect, but might help in some cases</p>
4. Half-valved glissandos (See Chapter 6 for various types of glissandi) (R) ex. 38	 <p>* either indication should be understood (i.e. 1/2 valve or H.V.)</p>	<p>-a choked sound with a smooth sliding across the inner pitches</p> <p>-some breaks in the slide may occur, especially in the upper two octaves</p>	<p>-attack the initial note, engage the valves allowing the smoothest half-valved slide, blow more air into the glissando for projection, and finger the final pitch (if any) as normal</p>	<p>-Nos. 1, 5, 8, 9, 10, 14, 17, 18 and 19 in Chapter 6 could all be done on 1/2 valve if desired and requested</p> <p>-most effective in lower ranges, for slow glissandi within a limited range, and for "contour glissandi"</p>
5. Half-valve oscillation (See Chapter 6, No 8) (R) ex. 39	 <p>* explanation will be needed</p>	<p>-an arbitrary wobbling about a given pitch with the constricted quality of half-valve</p>	<p>-attack the initial pitch and bend around that pitch by use of the aperture and tongue while engaging an effective half-valved combination</p>	<p>-tends to sound like a whine or cry</p> <p>-can be used for comic effects</p>
6. Half-valved tremolo (See Chapter 5, No. 8) (R) ex. 39	 <p>* explanation will be needed</p>	<p>-sounds like a combination of a pulsation and a fluttering on the single pitch</p> <p>-sound quality will vary between the alternating notes</p>	<p>-find an enharmonic half-valve combination and quickly alternate between the two valve settings, keeping the pitch constant while allowing for the alteration of timbre</p>	<p>-can sound like air pulsations or articulated notes depending on the valve combinations used</p> <p>-choose the valve combination if you wish a specific degree of break in the sound</p> <p>-less effective in the lower two octaves</p>

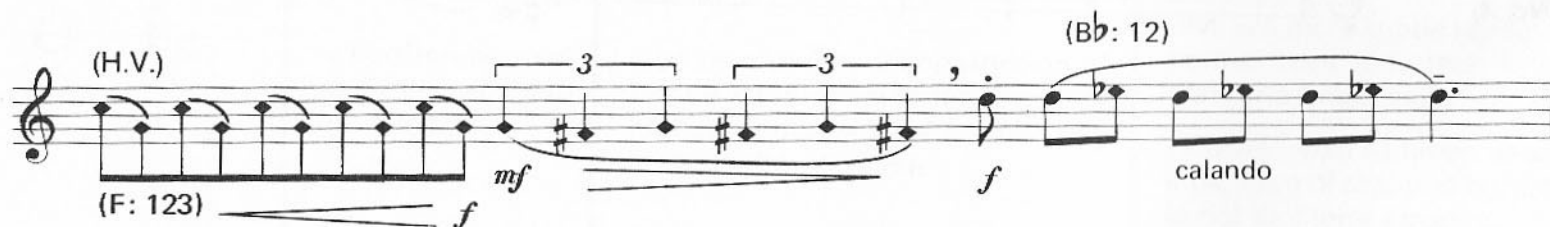
NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
7. Air sound (using H.V.)		See Chapter 12 "AIR SOUNDS"		-the use of half-valve causes additional turbulence within the horn and thus a louder air sound
8. Half-valve harmonic (R) ex. 39	<p>*</p> <p>H.V.</p>  <p>*will need an explanation</p>	-a double tone with the upper octave ringing as if from a distance	-play the written c'' on the F horn and partially depress the first valve until the upper octave sounds	-a most limited but unique effect -possible only on certain makes of horns -effective only on the written c'' -don't use this unless an alternative is presented for those players whose instruments are incapable of the effect

III. EXAMPLES

All of the following examples are included on the recording and identified by the example numbers (i.e. examples 35 - 39).

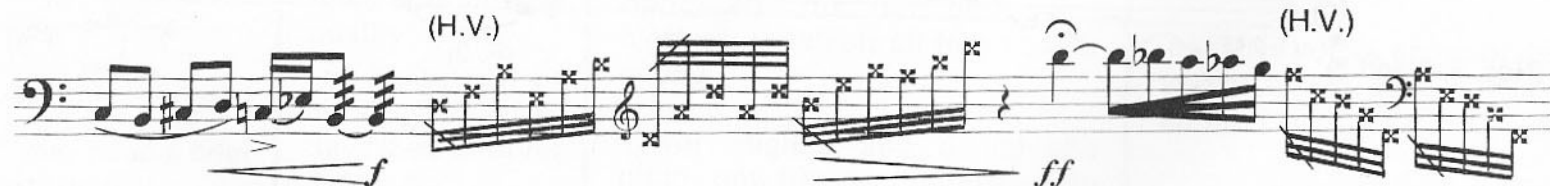
Example 35

(No. 1)



Example 36

(No. 2)



Example 37

(No. 3)

jazzy

Example 38

(No. 4)

Moderate

H.V. H.V. H.V. H.V.

Example 39

(Nos. 5, 6 and 8)

Very slowly

H.V. H.V. H.V. (F)

(thumb) (F: 3) (F:1)

Chapter 8

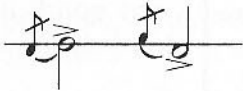
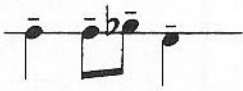
VARIED TIMBRAL POTENTIALS

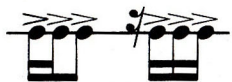


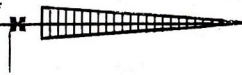
I. STATEMENT

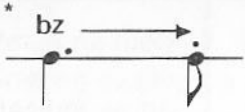
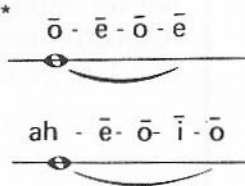
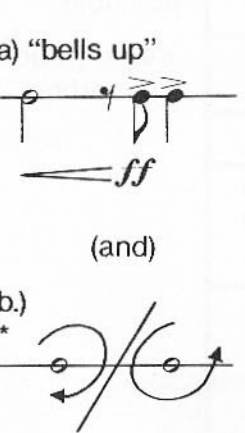
This set of effects demands a variety of techniques and will serve as a catch-all of requests made for subtle through blatant distortions of the normal horn tone. Most of these coloristic potentials require a complete control of standard techniques. (It is only from a firm control and understanding of the aperture and air stream that one can produce a “breathy sound” or a “sucked pitch”, for instance.)

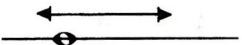
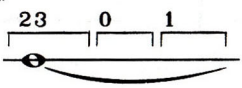
This is the chapter which will perhaps seem the most incomplete to the advanced experimenter. It appears that the potential variety of sounds is quite extensive. However, I have chosen those more common, those found in the numerous available scores, as well as some effective inventions. This chapter is meant to stimulate the search for more intelligent uses of the horn’s unique timbral abilities.

II. SPECIFICS

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
1. Brassy or (cuivre)	brassy 	-an edgy, forced, almost over-blown quality -will often happen naturally at loudest dynamics	-blow forcefully past the point where the shimmer or edge enters the tone -can be aided by a constriction of the air stream inside the mouth (a higher tongue position) especially in the softer dynamics	-“brassy” is more a color than a technique -this is a more subtle variance of the normal horn tone than is stopped horn or a brass mute -“cuivre” was at times used as an indication of stopped horn, but this is not its literal meaning -use both terms “cuivre” and “stopped” if so desired
2. Dark, veiled sound	“covered tone” *  mp * may need a brief explanation	-a somewhat undefined and muffled quality -not quite that of 3/4 stopped, but similar (See Chapter 3, No. 2) -a “woolly” quality in some cases	-position the right hand in direct opposition to the body and clothing to inhibit all free flow of sound -cover slightly and adjust the pitch upward accordingly, with the slide placements, if possible	-very usable effect on the horn -can give both a sense of distance and/or a dull lifelessness to the tone

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
3. Brash, open sound	* "open tone"  <i>ff</i> * may need an explanation for clarity	-a brassy and potentially spread tone -a more direct sound with little of the horn's characteristic mellowness	-remove the right hand entirely from any interception of the projected tone -adjust the pitch downward accordingly, with the slide placements, if possible	-good for a rough and wild character -louder dynamics are most effective -blends well with other edgy brass sounds
4. "White noise" or "Static" (R) ex. 40	* "static"  * with a thorough explanation	-an actual pitch with added and consistent static -a pinched quality	-flatten or clamp down on the aperture opening and force air through, holding a consistent distortion of the tone	-difficult to sustain a solid, unfaltering pitch level -good flexibility not likely -not possible at loud extremes or mid and low ranges
5. "Breathy tone" (R) ex. 40	* "airy"  * with a thorough explanation	-an uncentered though actual tone with definable pitch and additional breathiness	-open the aperture to more of a circle, by puckering, and let the air flow freely through this less resistant setting while attaining the given pitch	-not solid, flexible, or possible in loud dynamics -low range is usable -excessive use of available air allows for only short phrases -gradual gradations of "airness" can be controlled by some players in mid-range
6. "Sucked pitch" (R) ex. 41	*  *with a thorough explanation	-a kissing and/or squealing sound of obscure and often indefinite pitch(es), possible only in mid to high ranges	-with the mouthpiece and horn in place, suck air inward through the aperture causing a vibration at the lips which will, in turn, be amplified by the horn	-not a simple technique to control -should not be overused for the sake of the performer's throat and lips -very awkward for sustained notes, but effective for short "kissing sounds"

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
7. "Buzz tone" (R) ex. 41	 <p>* with a thorough explanation</p>	<p>-a clamped-off quality with a definite pitch</p> <p>-dampened and somewhat distant with an additional buzz ("zzzz") sound</p>	<p>-clamp the teeth tightly together and pinch the lips slightly more than normal while producing the requested pitch</p> <p>-open teeth, clamp slightly, if necessary</p>	<p>-avoid extreme high and low registers</p> <p>-quality will vary due to the extreme variety in the shape and position of teeth</p> <p>-effective when combined with No. 8 below</p>
8. Vowel sound production (R) ex. 42	 <p>*include a brief explanation (all vowel combinations are possible; extremes are best)</p>	<p>-a subtle variation of the timbre similar to the phonetic quality of the notated vowel</p> <p>-little if any actual pitch variation</p> <p>-change between the extreme vowel types will cause additional diphthongs</p>	<p>-position the tongue as if to form the vowel sounds requested while playing as usual</p> <p>-aperture may change in sympathy with these vowel sounds, but hold such changes to a minimum</p>	<p>-most effective in the lower registers</p> <p>-will not project unless allowed to be prominent in the scoring</p> <p>-more effective in stopped horn and with mute if in the higher octaves</p>
9. Bell direction	 <p>(and)</p> <p>* will need explanations</p>	<p>-"bells up" is a traditional directive to cause a louder brassier and more immediate tone</p> <p>-arrows for various sound:</p> <p>into the body for an extremely muffled, covered sound.</p> <p>direct the bell towards the audience causing a louder, more open sound</p>	<p>-"bells up": raise the bell of the horn to at least a parallel position to the floor, being careful to cover with hand sufficiently for pitch and adjust for mouthpiece angle change</p> <p>- : turn bell inward and open hand sufficiently for pitch</p> <p>- : direct bell towards the audience</p>	<p>-significant variety of the normal horn tone can be projected by such changes</p> <p>-use of various materials for back drops, and distances of the bells from such rebounding or absorbent surfaces, can also affect greatly the projected sound</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
10. "Doppler effect"	<p>*</p>  <p>* will need an explanation</p>	<p>-a fluctuation of timbre, dynamics and, to a lesser extent, pitch</p> <p>-a subtle effect</p>	<p>-pivot the bell quickly from one side to the other, or up and down, etc.</p> <p>-most easily administered while standing</p>	<p>-both an aural and theatrical effect</p> <p>-arrow indication should be directly related (and explained) (see No. 9 above)</p>
11. Enharmonic fingerings	<p>*</p>  <p>* brief explanation</p>	<p>-a subtle shift of timbre on a sustained note</p> <p>-each valve change will cause a brief disturbance of the sustained tone</p>	<p>-simply shift to the prescribed fingerings (if well chosen) and allow the timbral variety to be obvious by avoiding instinctive adjustments</p>	<p>-be sure to choose fingerings which fall on strong harmonics within the respective series (i.e. avoid 7th, 11th, and 13th partials, etc.)</p>
(R) ex. 43				
12. "Descriptive sounds"	<p>simply use verbal directives or use some effective notational symbols with verbal directives (see ex. 44)</p>	<p>-a dog barking</p> <p>-a bird calling</p> <p>-an elephant trumpeting</p> <p>-a bell tolling</p> <p>-a siren</p> <p>-a whale singing</p> <p>-an engine revving</p> <p>-like the whinny of a horse</p>	<p>-rough, growling, accented spurts</p> <p>-extremely high squeak with curled in aperture</p> <p>-loud glissandi into and out of the upper register</p> <p>-accents with slow decay</p> <p>-half-valved glissando</p> <p>-half-valved, gently glissando into and out of upper range allowing for overtone breaks in sound</p> <p>-low range flutter tongue with oscillating glissando</p> <p>-a sliding lip/tongue trill undulating about in the extreme high register, each ending in a fall off</p>	<p>-many possibilities not listed</p> <p>-effectiveness quite varied</p> <p>-experiment with your performer if possible</p> <p>-some much less sophisticated than others</p>
(R) ex. 44				

III. EXAMPLES

All of the following examples are included on the recording and identified by the example numbers (i.e. examples 40 - 44).

Example 40

(No. 4 & 5)

Musical notation for Example 40, (No. 4 & 5). The notation is on a single treble clef staff. It begins with a dynamic marking of *mf*. The first measure contains a quarter rest. The second measure has a quarter note with a sharp sign. The third measure has a quarter note with a flat sign. The fourth measure has a quarter note with a sharp sign. The fifth measure has a quarter note with a flat sign. The sixth measure has a quarter note with a sharp sign. The seventh measure has a quarter note with a flat sign. The eighth measure has a quarter note with a sharp sign. The ninth measure has a quarter note with a flat sign. The tenth measure has a quarter note with a sharp sign. The eleventh measure has a quarter note with a flat sign. The twelfth measure has a quarter note with a sharp sign. The thirteenth measure has a quarter note with a flat sign. The fourteenth measure has a quarter note with a sharp sign. The fifteenth measure has a quarter note with a flat sign. The sixteenth measure has a quarter note with a sharp sign. The seventeenth measure has a quarter note with a flat sign. The eighteenth measure has a quarter note with a sharp sign. The nineteenth measure has a quarter note with a flat sign. The twentieth measure has a quarter note with a sharp sign. The notation includes dynamic markings *mf*, *mp*, and *n*. There are also performance instructions: "static" and "airy" with brackets above the notes. A hairpin indicates a crescendo from *mp* to *mp*. A final hairpin indicates a decrescendo to *n*.

Example 41

(No. 6 & 7)

Musical notation for Example 41, (No. 6 & 7). The notation is on a single treble clef staff. It begins with a dynamic marking of *mp*. The first measure has a quarter note with a flat sign. The second measure has a quarter note with a flat sign. The third measure has a quarter note with a flat sign. The fourth measure has a quarter note with a flat sign. The fifth measure has a quarter note with a flat sign. The sixth measure has a quarter note with a flat sign. The seventh measure has a quarter note with a flat sign. The eighth measure has a quarter note with a flat sign. The ninth measure has a quarter note with a flat sign. The tenth measure has a quarter note with a flat sign. The eleventh measure has a quarter note with a flat sign. The twelfth measure has a quarter note with a flat sign. The thirteenth measure has a quarter note with a flat sign. The fourteenth measure has a quarter note with a flat sign. The fifteenth measure has a quarter note with a flat sign. The sixteenth measure has a quarter note with a flat sign. The seventeenth measure has a quarter note with a flat sign. The eighteenth measure has a quarter note with a flat sign. The nineteenth measure has a quarter note with a flat sign. The twentieth measure has a quarter note with a flat sign. The notation includes dynamic markings *mp* and *mf*. There are also performance instructions: "bz" and "o" above the notes. A hairpin indicates a crescendo from *mp* to *mf*. A final hairpin indicates a decrescendo to *n*.

Musical notation for kissing sounds. The notation is on a single treble clef staff. It consists of six measures, each containing a quarter note with a flat sign. The notes are connected by a slur. The notation includes dynamic markings *mp* and *mf*. There are also performance instructions: "bz" and "o" above the notes. A hairpin indicates a crescendo from *mp* to *mf*. A final hairpin indicates a decrescendo to *n*.

(kissing sounds)

Example 42.

(No. 8)

Musical notation for Example 42, (No. 8). The notation is on a single bass clef staff. It begins with a dynamic marking of *mp*. The first measure has a quarter note with a flat sign. The second measure has a quarter note with a flat sign. The third measure has a quarter note with a flat sign. The fourth measure has a quarter note with a flat sign. The fifth measure has a quarter note with a flat sign. The sixth measure has a quarter note with a flat sign. The seventh measure has a quarter note with a flat sign. The eighth measure has a quarter note with a flat sign. The ninth measure has a quarter note with a flat sign. The tenth measure has a quarter note with a flat sign. The eleventh measure has a quarter note with a flat sign. The twelfth measure has a quarter note with a flat sign. The thirteenth measure has a quarter note with a flat sign. The fourteenth measure has a quarter note with a flat sign. The fifteenth measure has a quarter note with a flat sign. The sixteenth measure has a quarter note with a flat sign. The seventeenth measure has a quarter note with a flat sign. The eighteenth measure has a quarter note with a flat sign. The nineteenth measure has a quarter note with a flat sign. The twentieth measure has a quarter note with a flat sign. The notation includes dynamic markings *mp*, *sfz*, and *f*. There are also performance instructions: "o - e - o - e - o" and "e - o - e - o" above the notes. A hairpin indicates a crescendo from *mp* to *sfz*. A final hairpin indicates a decrescendo to *n*.

Example 43

(No. 11)

Musical notation for Example 43 (No. 11) in treble clef. The first part shows a melodic line with a crescendo hairpin and a fermata. Below it, a guitar chord diagram is shown: $F:0-23 - Bb:0 - F:0$, with the tempo marking *calando*. The second part shows a *ff* dynamic marking with a fermata, followed by a guitar chord diagram: $Bb:12-0 - F:12$, with the tempo marking *calando*.

Example 44

(No. 12)

Musical notation for Example 44 (No. 12) in treble clef. It is divided into three sections: 1) A note with a *sfz* dynamic and a wavy line below it, labeled "(a dog barking)". 2) A note with a *sfz* dynamic and a wavy line, labeled "(a bird calling)". 3) A note with a wavy line and a sharp peak, labeled "(an elephant trumpeting)". Above the first section is the chord diagram $(Bb:0)$.

Musical notation for Example 44 (No. 12) in treble clef. It is divided into three sections: 1) A note with a *sf* dynamic and a wavy line, labeled "(a bell tolling)". 2) A note with a *mf* dynamic and a wavy line, labeled "(like a siren)". 3) A note with a wavy line and a sharp peak, labeled "(a whale 'singing')". Above the second section is the marking "H.V."

Musical notation for Example 44 (No. 12) in bass clef. It is divided into two sections: 1) A note with a *sfz* dynamic and a wavy line, labeled "(an engine revving)". Above it is the marking "(bend)". 2) A note with a *f* dynamic and a wavy line, labeled "(like the 'whinny' of a horse)". Above it are three trill markings (*tr*).

Chapter 9

VIBRATO

I. STATEMENT




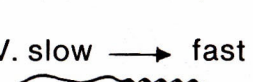

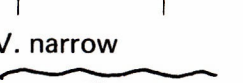

The horn player has, in the majority of western countries, been encouraged to retain a pure non-vibrato quality as the “traditional” sound. This attitude is changing rapidly as more cultures and “schools” of playing share their approaches through recordings and live performances. Vibrato is now a viable means of expression for most open-minded hornists and should not be avoided by composers.

There are three basic categories of vibrato to consider. The most common adds a pitch fluctuation to the sounding tone. Though pitch variety can be attained by the movement of the right hand in and out of the bell, it is not recommended. The results are inconsistent: it causes a “wa-wa” effect by vary-

ing the timbre more than the pitch, and it often causes the horn to shake against the player’s lips, resulting in fatigue. One should produce the vibrato from within and allow the horn to amplify what it receives. (See SPECIFICS, Numbers 7 and 8 for exceptions.) Another form of vibrato varies the intensity or amplitude of the notated pitch.

Recent studies have shown that the supposed “diaphragmatic vibrato” is controlled largely at the throat opening. So one should refer to the throat as the primary mechanism controlling the “intensity vibrato.” The third and most subtle means of vibrato is produced by a changing of timbre within a given pitch, similar to Chapter 8, No. 8).

II. SPECIFICS

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
1. Vibrato (normal)	<p>* V.</p>  <p>* might need a brief note -use N.V. for "no vibrato"</p>	(-depending on the tempo and intensity of the section,) an appropriate and gentle fluctuation of pitch applied to the given note	-allow the jaw, lip, tongue and throat to coordinate in a blend of pitch, intensity and timbral enhancement of the given note	-unless an excessive amount of vibrato is desired, allow the "normal vibrato" to be moderate in all ways
2. Vibrato speed a. slow b. fast c. change (R) ex. 45	<p>V. slow</p>  <p>V. fast</p>  <p>V. slow → fast</p> 	-degree of pitch change remains the same while the velocity is altered as described	-change rate of speed, as requested, of the above described technique (see No. 1)	-notate accurately the number of undulations of pitch desired for a greater degree of control over the rate of change
3. Vibrato width a. wide b. narrow c. change (R) ex. 46	<p>V. wide</p>  <p>V. narrow</p>  <p>V. narrow → wide</p> 	-the speed of the undulation remains the same while the amount of pitch variation is altered as described	<p>-vary the pitch through a greater and lesser use of the jaw and lip as requested</p> <p>-use the right hand only if needed in the upper register</p>	<p>-upper range allows only a narrow vibrato</p> <p>-mid-low and low ranges are most effective</p> <p>-use of right hand in bell for upper octave will distort timbre and only allow for a vibrato below the pitch</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
4. Vibrato intensity a. regular b. irregular c. rhythmic (R) ex. 47	<p>* will need an explanation</p>	<p>-a palpitation of the tone affecting the amplitude rather than the pitch frequencies</p>	<p>-sustain the given pitch while altering the air flow, thus the dynamics, in a regular or irregular manner as requested</p> <p>-be careful to control a consistent pitch level</p>	<p>-(see Chapter 4, No. 3c.)</p> <p>-not a "true vibrato" in the traditional sense</p> <p>-any combination possible with verbal instruction (i.e. "increase intensity" "decrease speed of intensity")</p> <p>-can be a very powerful effect with multiple horns in all ranges</p>
5. Trembling vibrato (R) ex. 48	<p>*V.</p> <p>*will need an explanation</p>	<p>-an erratic and nervous fluctuation of the normal vibrato</p>	<p>-use the techniques described in No. 1 above in a nervous and irregular manner, perhaps emphasizing the intensity element</p>	<p>-provides a very effective nervous quality</p> <p>-possible in all ranges, but most effective in middle and lower registers</p>
6. Quarter-tone vibrato (R) ex. 48	<p>*V. 1/4[†]</p> <p>*will need an explanation</p>	<p>-a wide vibrato ascending and descending 1/4 tone on either side of the given pitch</p>	<p>-lip up and down around the notated pitch by 1/4 tone</p> <p>-use the right hand and retune the horn, if needed, to place the horn's pitch center in an appropriate setting to allow for this technique</p>	<p>-the ability to control this exact amount of pitch change differs with the various ranges (lower is better) and with the various horn designs</p> <p>-use the indication in No. 3a above if exact 1/4 tone is not necessary</p>
7. "Machine-like" vibrato (R) ex. 48	<p>V. </p> <p>("machine-like")</p> <p>* full explanation necessary</p>	<p>-exact, rapid, and excessive undulations of the pitch like an electric organ or accordion</p>	<p>-shake the horn rapidly with both hands causing slight changes of pressure against the lips while retaining the notated pitch</p>	<p>-a very exaggerated vibrato, nearing the sound of a trill</p> <p>-will tire the player if used excessively</p> <p>-wider changes in lower register</p>
8. "Wa-wa" vibrato (R) ex. 48	<p>* V. </p> <p>("wa - wa")</p> <p>* full explanation necessary</p>	<p>-a controlled dipping beneath the notated pitch, with a changing timbre from a clear to a distant quality (wa-oo-wa-oo)</p>	<p>-bend the right hand inward (not quite to a ⊕ position) and back to the normal setting causing an exaggerated vibrato beneath the pitch</p>	<p>-see Chapter 3 No. 3 for a similar, though more exact technique</p> <p>-tends to have a jazzy connotation</p>

III. EXAMPLES

All of the following examples are included on the recording and identified by the example numbers (i.e. examples 45 - 48)

Example 45
(No. 2 a. b. c.)

Slowly V. slowly V. fast V. slow → fast → slow N.V.

mf *f* (no dim.) *mp*

Detailed description: This musical example is written on a single staff in 4/4 time. It begins with a half note G4, followed by a quarter note A4, and a quarter note B4. The first measure is marked *mf* and 'Slowly'. The second measure contains a dotted quarter note C#5, an eighth note D#5, and an eighth note E5, marked 'V. slowly'. The third measure contains a dotted quarter note F#5, an eighth note G5, and an eighth note A5, marked 'V. fast'. The fourth measure contains a dotted half note G4, marked 'V. slow'. The fifth measure contains a dotted quarter note A4, an eighth note B4, and an eighth note C5, marked 'fast'. The sixth measure contains a dotted quarter note B4, an eighth note A4, and an eighth note G4, marked 'slow'. The seventh measure contains a dotted half note G4, marked 'N.V.'. The piece concludes with a final bar line. Dynamics are indicated by wedges: *mf* at the start, *f* under the second measure, and *mp* under the fourth measure.

Example 46
(No. 3 a. b. c.)

V. wide → narrow V. wide V. narrow V. narrow → wide

mf *f*

Detailed description: This musical example is written on a single staff in 3/4 time. It begins with a dotted half note G2, followed by a dotted quarter note A2, and a dotted quarter note B2. The first measure is marked 'V. wide'. The second measure contains a dotted quarter note C3, an eighth note D3, and an eighth note E3, marked 'narrow'. The third measure contains a dotted quarter note F3, an eighth note G3, and an eighth note A3, marked 'V. wide'. The fourth measure contains a dotted quarter note B3, an eighth note C4, and an eighth note D4, marked 'V. narrow'. The fifth measure contains a dotted quarter note E4, an eighth note F4, and an eighth note G4, marked '3'. The sixth measure contains a dotted quarter note A4, an eighth note B4, and an eighth note C5, marked 'V. narrow'. The seventh measure contains a dotted quarter note D5, an eighth note E5, and an eighth note F5, marked 'wide'. The piece concludes with a final bar line. Dynamics are indicated by wedges: *mf* under the second measure and *f* under the fifth measure.

Example 47
(No. 4 a. b. c.)

sfz *sfz* *sfz* *sfz*

Detailed description: This musical example is written on a single staff in 4/4 time. It begins with a dotted quarter note G4, followed by a dotted quarter note A4, and a dotted quarter note B4. The first measure is marked '*sfz*'. The second measure contains a dotted quarter note C5, an eighth note D5, and an eighth note E5, marked '*sfz*'. The third measure contains a dotted quarter note F5, an eighth note G5, and an eighth note A5, marked '*sfz*'. The fourth measure contains a dotted quarter note B5, an eighth note C6, and an eighth note D6, marked '*sfz*'. The fifth measure contains a dotted quarter note E6, an eighth note F6, and an eighth note G6, marked '*sfz*'. The sixth measure contains a dotted quarter note A6, an eighth note B6, and an eighth note C7, marked '*sfz*'. The seventh measure contains a dotted quarter note D7, an eighth note E7, and an eighth note F7, marked '*sfz*'. The eighth measure contains a dotted quarter note G7, an eighth note A7, and an eighth note B7, marked '*sfz*'. The piece concludes with a final bar line. Dynamics are indicated by wedges: *sfz* under the first, second, fourth, and sixth measures.

Example 48
(Nos. 5, 7 and 8)

V. V. V. V.

mp *f* *mp*

Detailed description: This musical example is written on a single staff in 4/4 time. It begins with a dotted quarter note G4, followed by a dotted quarter note A4, and a dotted quarter note B4. The first measure is marked '*mp*'. The second measure contains a dotted quarter note C5, an eighth note D5, and an eighth note E5, marked 'V.'. The third measure contains a dotted quarter note F5, an eighth note G5, and an eighth note A5, marked 'V.'. The fourth measure contains a dotted quarter note B5, an eighth note C6, and an eighth note D6, marked 'V.'. The fifth measure contains a dotted quarter note E6, an eighth note F6, and an eighth note G6, marked 'V.'. The sixth measure contains a dotted quarter note A6, an eighth note B6, and an eighth note C7, marked '*mp*'. The seventh measure contains a dotted quarter note D7, an eighth note E7, and an eighth note F7, marked '*mp*'. The eighth measure contains a dotted quarter note G7, an eighth note A7, and an eighth note B7, marked '*mp*'. The piece concludes with a final bar line. Dynamics are indicated by wedges: *mp* under the first, third, and fifth measures, and *f* under the second measure.

Chapter 10

QUARTER-TONES

I. STATEMENT

Here we have a significant potential for the horn, and a number of significant problems. The hornist has the possibility of (1) adjusting the pitch with the right hand in the bell (causing a change of color and diminishing projection), (2) bending the middle and lower range pitches at the aperture (i.e. a controlled "bend" causing an unstable pitch center and distortion of a desired resonance), (3) using the 7th, 11th and 13th partials within the upper $1\frac{3}{4}$ octaves (the complete scale requiring a full (F-B^b) double horn, which is not too unreasonable), and (4) tuning the full double (F-B^b) horn such that the longer F horn is $\frac{1}{4}$ tone flat to the "in tune" B^b side of the instrument, allowing for a full $\frac{1}{4}$ tone "chromatic" scale for approximately $3\frac{1}{2}$ octaves.

Each of the above techniques become progressively more usable in theory, but all require an extension of awarenesses, both aural and physical, which have not been studied by the majority of today's performers. A few composers are requesting quarter-tones, most often in isolated and primarily "chromatic" patterns. Indications such as "slightly flat," "trill as small as possible," and "bend pitch" are examples of the microtonal requests other than quarter-tones made of the hornist. With the character of the horn tone, any "microtonal system" smaller than quarter-tones would be problematic almost beyond resolution.

However, isolated requests for non-specific microtonal intervals do occur, with varied results.

What follows are fingering charts which use the 7th, 11th, and 13th partials and the simple quarter-tone tuning of the full double horn. Performers will need to develop a most accurate perception of this interval since the partials are not actually exact quarter-tones. Minute bending at the aperture and minimal right hand adjustments will cover for such discrepancies without greatly distorting the tone quality and resonance. The quarter-tone tuning is theoretically the most accurate method; however, performers are often uncomfortable performing on the F side of the horn in the upper octave, and tone colors will probably not mesh in certain ranges for many players. The other concern is the fact that a few players perform on single B^b horns or B^b-high F double horns. What this allows is a full "chromatic" quarter-tone scale for the single B^b player from the top of the range to a written second space "a¹ quarter-tone flat" with the exclusion of the written fourth space "e¹¹ quarter-tone flat." That note is picked up by the player with a high F (or descant) addition to the B^b horn. The composer must remember to transpose the fingerings given for the "F-side" (on the following chart) up one octave if a high F horn is to be used.

II. SPECIFICS

NOTATION

There are numerous notational designs for quarter-tones and most of them are distortions of existing accidental signs

(i.e. \flat , \flat , \flat , \flat , = 1/4 flat; \sharp , \sharp , \sharp , = 1/4 sharp, etc.) These tend not to be noticed when one is reading manuscript copy and often just appear to be inadequate printing or reproduction. The one indication which seems the clearest visibly, and the most comprehensible is the angled arrow above the note

(i.e. \flat , \flat , \sharp , \flat , etc.) And since we are working here with a

theoretically equal tempered system it would be less complicated to use the quarter-tone flat symbol exclusively (i.e. a descending arrow above any normally notated pitch.)

COMMENTS

It is recommended that the composer list the fingerings near the note-heads for all requested quarter-tone pitches. Most performers have had no need to learn these and find them difficult to remember.

"QUARTER-TONE" FINGERING CHART FOR THE FULL DOUBLE HORN (F/B^b)

* T12 T0 T23 T2 T0 T1 T2 T0 T1 T2 T12 T1 T23 T3 T0 T23 T2 T13 T0 T123 T2 1 T1 T0 T12 T2
 T3 T23 (T0) T13 (T2) T123 1 0 2 13 3 23
 0 2 3 23 13 123

T23 T1 T0 T3 T2 T23 T1 0 T12 2 T23 1 0 3 2 23 1 13 0 (123) 2
 0 123 2 1 T13 12 T123 23

*A "T" before a number refers to the "thumb value" and denotes a B^b fingering. All others on F horn.

The above chart is derived from the following sequences of "out-of-tune" partials attainable on the full double horn (i.e. low F and B^b). If a B^b/high F horn is to be used, simply transpose the F horn fingerings up one octave.

B^b Horn 13th Partial

T0 T2 T1 T3 T23 T13 T123
 (T12)

F Horn 13th Partial

0 2 1 3 23 13 123
 (12)

B^b Horn 11th Partial

T0 T2 T1 T3 T23 T13 T123

F Horn 11th Partial

0 2 1 3 23 13 123

B^b Horn 7th Partial

T0 T2 T1 T3 T23 T13 T123

F Horn 7th Partial

0 2 1 3 23 13 123

**AN OPTIONAL QUARTER-TONE FINGERING CHART FOR THE FULL DOUBLE HORN (F/B^b)
MADE POSSIBLE BY TUNING THE LOWER F HORN SIDE 1/4 TONE LOWER THAN THE B^b HORN SIDE**

*T12 0 T23 2 T0 0 T2 2 T1 1 T12 12 (3) T23 23 T0 0 T2 2

T0 1 T2 0 T1 2 T12 0 (1) T23 2 T0 0 T2 2 T1 1 T12 12

T23 23 T1 0 T12 2 T0 1 T2 0 T1 2 T12 1 T23 12 T0 0

(T13) (T123)

T2 2 T1 1 T12 12 T23 23 T13 0 T123 2 T0 1 T2 12 T1 23

T12 13 T23 123 T13 0 T123 2 * 1 12 23 13 123 T0

***A "T" before a number refers to the thumb valve and denotes a B^b fingering.
Pitches without fingerings are not possible on the "in tune" B^b side of the horn.**

III. EXAMPLES

All of the following examples are included on the recording and identified by the example number (i.e. examples 49a and 49b).

Example 49a.

continue scale through:

(see initial fingering chart above)

T0 T2 13 (123)

Example 49b.

mf (1) (T1) (T1) (T12) (T23) (0)

3 3

mf (0) (0) (0) *trmn* (1) (T0) (T1) *f* (2)

Chapter 11

VOCALIZATIONS

I. STATEMENT

This category includes all sounds made with the help of the player's vocal cords. The most important of these techniques is the simultaneous sounding of a sung and normally vibrated pitch. When this technique involves two pitches within a single overtone series, the theoretical results include an additional differential tone and summational tone, thus a four-note chord.¹ Such "horn-chords" were requested as far back as Carl Maria von Weber with varied accuracy and results.

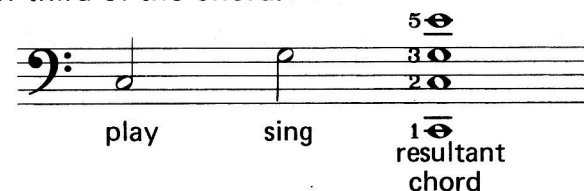
Before one gets too excited about this "theoretically unique potential" a number of details should be presented. To arrive at an audible chord of substantial quality the player must first match the tone color of the horn with the voice and then must arrive at a perfect unfaltering intonation and dynamic equality. Such control is rare, but possible in a few cases.

¹ The theory behind these "horn-chords" is most easily defined by figuring the sum and the difference of the two frequencies to complete the notes of the chords. Thus, if the second note of a harmonic series is played and the third note of that same series is sung, the difference tone (i.e. $3-2=1$) will be the fundamental an octave below the played note, and the sum-

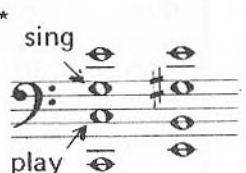

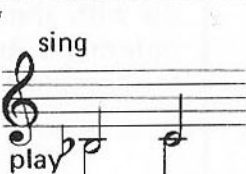
Perhaps the most effective use of this technique has involved the consequent production of "beats" resulting from near-unison dyads. The bending apart and blending of the vocal and played pitches is quite effective and does not involve the degree of exactness necessary for the sounding of chords.

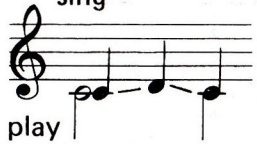


An important consideration in all of this is the obvious problem of voice types and ranges of the many potential performers of this technique. The vocal ranges should be presented by a composer in two versions, a mid-range male and a mid-range female tessitura. Unlike the other brass instruments, there are at least as many, if not more, women horn players than men. The other "vocalizations" to be mentioned are done separately from the horn or use the horn as a megaphone providing a modified timbre to the vocally produced sound.

mation tone will be the fifth tone of the series (i.e. $3 + 2 = 5$) or the major third of the chord.



II. SPECIFICS

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
1. Horn-chords (R) ex. 50	<p>* sing</p>  <p>* resultant notes are not always notated</p>	<p>-a unique chordal sound of lesser quality than either a normal performed timbre or a vocalized timbre</p> <p>-in most cases, resultant tones cause more of a disturbance than a resonance</p>	<p>-sing the given note with a vowel quality as close as possible to the played sound</p> <p>-keep throat open in feeling and use a solid air stream</p> <p>-use the proper fingering (harmonic series) for the notated chord when possible</p> <p>-use a tape recorder for an accurate feedback while developing this technique (difficult to hear the balance and resultant tones)</p>	<p>-difficult to control all necessary factors (pitch, balance, timbre)</p> <p>-any movement to other notes should be slow and generally homophonic in nature</p> <p>-avoid any complex two-part writing</p> <p>-bottom note could be sung, though not as common</p> <p>-be sure to include an option(s) for various vocal ranges</p>
2. Melody and pedal point (R) ex. 51	<p>sing</p>  <p>* resultant tones not notated if melody is of the most importance</p>	<p>-as above, a lesser quality of sound but a unique and surprising effect if exceptionally well executed</p>	<p>-as above in all respects with the exception of harmonic series (i.e. fingering) consideration</p> <p>-use the most secure fingering for the played note</p>	<p>-avoid complex activity in either voice</p> <p>-sustained note difficult to control</p> <p>-usually more difficult to sing a pedal point while playing the melody</p>
3. Unison singing and playing (R) ex. 52	<p>* sing</p>  <p>* brief explanation</p>	<p>-distorts the natural timbre of the horn tone, becoming somewhat nasal and hollow</p>	<p>-match the timbre of the horn as closely as possible and sing with equal volume</p> <p>-avoid "beats" from intonation discrepancies</p>	<p>-avoid complex activity</p> <p>-consider the ranges and compose an alternative or two</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>4. Variable beats</p> <p>(R) ex. 52</p>	<p>* sing</p>  <p>play</p> <p>* will need an explanation</p>	<p>-amplitude modulations (beats) which increase in speed in direct relationship to the variance in frequencies</p>	<p>-sing a unison and begin a gradual glissando with the voice</p> <p>-listen primarily to the stable played pitch and don't allow it to slide upward with the voice - hold tight to the feeling of the vibration</p>	<p>-an effective and versatile technique</p> <p>-voice can work equally well above or below in this close of a range</p> <p>-compose range alternatives</p>
<p>5. Stationary beats</p> <p>(R) ex. 52</p>	<p>* 5 B.P.S.</p>  <p>sing</p> <p>play</p> <p>* will need a full explanation</p>	<p>-a controlled number of beats per second (BPS) sounding like a guttural vibrato</p>	<p>-adjust either the voice or the lip in whichever direction is most easily controlled and retain the two sensations as securely as possible</p>	<p>-a very improbable request if exactness is required</p> <p>-the result will probably be an erratic slow "vibrato" if 5BPS or less is requested, or an erratic fast "vibrato" if 10BPS or more is requested</p>
<p>6. Variable timbre</p>	<p>* </p> <p>sing</p> <p>play a - e - o - e</p> <p>* a brief explanation will be needed</p>	<p>-similar in general timbre as in No. 3 above with a subtle vowel quality modulation as indicated</p> <p>-diphthongs between extreme vowel qualities are the most audible</p>	<p>-sing and play holding the unison pitch while adjusting the position of the tongue to form the given vowel sounds</p> <p>-do not allow the aperture to become involved in the vowel sound formations</p>	<p>-most effective in the lower registers</p> <p>-timbral variety will not be heard unless prominently scored</p> <p>-is somewhat more audible in stopped horn or with a mute</p>
<p>7. Horn used as a megaphone</p>	<p>-verbal instruction given near the event (i.e. "hum into the horn," or sing, yell, mutter, hiss, groan, cough, sound some specific syllables or words, etc.)</p>	<p>-uses the horn, its shape and metallic vibrancy, to add to the voice or vocal effects made by the performer</p> <p>-adding a valve flutter during a sustained sound causes a gargling effect</p>	<p>-do as directed</p>	<p>-such requests have had little to do with the horn and its unique potentials, but are included here for completeness</p>

III. EXAMPLES

All of the following examples are included on the recording and identified by the example numbers (i.e. examples 50 - 52)

Example 50

(No. 1)

Musical notation for Example 50 (No. 1) in bass clef, 4/4 time. The notation features a vocal line (sing) and a piano accompaniment (play). The vocal line consists of a series of notes with slurs and accents, including a sharp sign. The piano accompaniment features chords and melodic lines with slurs and accents.

Example 51

(No. 2)

Musical notation for Example 51 (No. 2) in treble clef. The notation features a vocal line (sing) and a piano accompaniment (play). The vocal line consists of a series of notes with slurs and accents, including a sharp sign. The piano accompaniment features chords and melodic lines with slurs and accents.

Example 52

(Nos. 3, 4 & 5)

Musical notation for Example 52 (Nos. 3, 4 & 5) in treble clef. The notation features a vocal line (sing) and a piano accompaniment (play). The vocal line consists of a series of notes with slurs and accents, including a sharp sign. The piano accompaniment features chords and melodic lines with slurs and accents. A box labeled "10 BPS" is present in the notation.

Chapter 12

AIR SOUNDS

I. STATEMENT


Such effects as these are, in general, rather consistent throughout the brass instrument family and are, thus, not unique to the horn. I include them because of their popularity among composers.


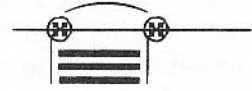
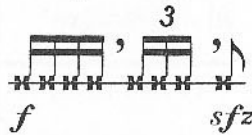
What this category involves is finding various resistance points; within the horn's construction, and through consonant formations at the mouth, or varied combinations of both so as to cause an audible "wind-sound" as the performer's air rushes past. This involves a short period of experimentation

for the performer to discover the best means (if the suggested technique is inadequate) and very little technique beyond the conservation of the air if lengthy air sounds are required.

There are examples in the literature which request a glissando for the air sound. This, of course, suggests a change of pitch which is not possible through "white-noise" (or wind) which theoretically contains all pitches. Slight timbral changes and amplitude adjustments could be used in such a case.

II. SPECIFICS

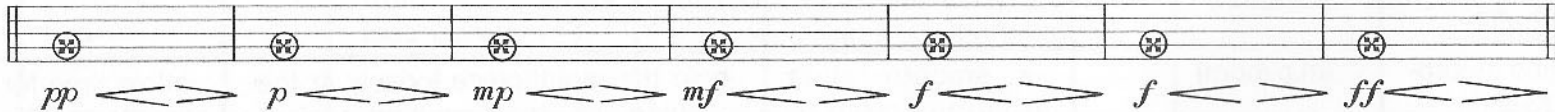
NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
1. Air sound	<p>* (air only)</p>  <p>* methods might be suggested (see Technique)</p>	-simply the sound of wind with no tone or discernable pitch	<p>a. wrap lips around mouthpiece and blow</p> <p>b. spread lips apart but retain a "near aperture" and blow</p> <p>c. form the letter "f" with teeth and bottom lip then blow</p> <p>d. wrap lips around mouthpiece and form the letters "s" or "sh" and blow</p> <p>e. "half-valve" one or more valves and blow against that resistance</p> <p>f. combine one or more of the above with a half-valve</p> <p>g. reverse the mouthpiece and hold it at an angle next to the mouthpipe opening and blow against the resultant resistance</p>	<p>-the techniques listed are in an order of volume from softest to loudest</p> <p>-suggesting one or more of these might insure the audibility or subtlety desired</p> <p>-if more "white noise" is desired one could suggest or allow air leakage through the corners of the mouth (a sound which will not be amplified by the horn itself)</p>
(R) ex. 53				

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
2. Air Flutter (R) ex. 54	(air only)  fltz. (air only)  (flutter valves)	-a very aggressive air sound with rapid articulated pulsations -if irregular pulsations are desired use the valve-flutter	-apply many of the techniques listed above (No. 1) with the additional fluttering of the tongue (see Chapter 4 No. 10) or the valves (or both)	-consider the volume characteristics of the above mentioned techniques (No. 1) with the obvious exclusion of the "s" or "sh" formation
3. Articulated air sounds (R) ex. 54	(air only)  <i>f</i> <i>sfz</i>	-rhythms applied to the more audible air sound techniques	-tongue aggressively into a half-valved or reversed mouthpiece air sound for greatest volume -experiment with combinations	-most effective at louder levels -(air sounds will never be "loud" compared to the potential decibels of a normal horn sound)

III. EXAMPLES

All of the following examples are included on the recording and identified by the example numbers (i.e. examples 53 and 54)


Example 53 a.) (air only) b.) (air only) c.) ("fff") d.) ("s" or "sh") e.) H.V. f.) H.V. and "S" or "sh" g.) (reverse m.p.)



pp *p* *mp* *mf* *f* *f* *ff*

(No. 1, all 7 Techniques)

Example 54 (Nos. 2 & 3)



(air only) (air only) (reverse m.p.)
f *sfz*

Chapter 13

MOUTHPIECE EFFECTS

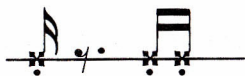
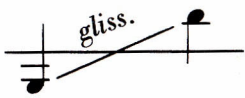
I. STATEMENT

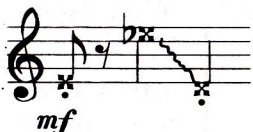
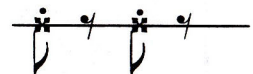
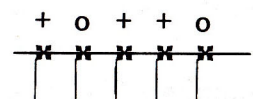
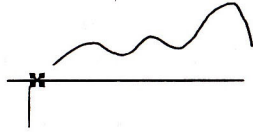
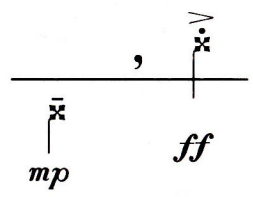
Another somewhat marginal potential of the horn's timbral output involves the mouthpiece sounds; with the horn, partially removed, and totally detached. Due to the great variance in dimensions with the other brass mouthpieces, these effects for the most part, are unique to each instrument of the brass family.

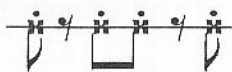
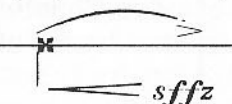
Producing a buzz through a detached mouthpiece is a normal request. However, a very fine book on new techniques states that no precise pitches can be heard when the player

blows on the mouthpiece unattached to the instrument. This is certainly not the case. The sound is airy and, with some players, less than a pure quality, but the actual pitch can be heard and should be expected by the composer (avoiding the bottom octave and a half of the normal notated hornist's range). Good projection and extensive volume will not be possible.

II. SPECIFICS

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
1. Hand "pops" (R) ex. 55	* (hand pop)  * brief explanation advisable	-a popping sound which is amplified by the horn, to only a moderate dynamic	-use the flat of the palm of the right hand and strike the normally inserted mouthpiece in a flush manner directing the bell away from the body for the greatest projection -be careful not to tap it so hard that the mouthpiece is forced into the mouthpiece	-a unique percussive effect and already a rather standard request -although trumpets can also project a subtle pitch variety by depressing different valves, such a modification is not audible on the horn
2. Amplified mouthpiece glissando (R) ex. 55	* (m.p./horn)  * will need a thorough explanation	-a smooth slide from one pitch to the other without any harmonic breaks -tone quality is a combination of the normal horn tone and the mouthpiece alone	-hold the mouthpiece loosely at the opening of the mouthpipe—just enough to allow for a smooth unfaltering glissando and maximum response from the horns amplification	-allow time for the player to set the position of the mouthpiece -suggests the sound of a low pitched siren -a very useful glissando technique with a less than beautiful tone

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
3. Mouthpiece alone (R) ex. 55	* (m.p. alone)  * define "m.p."	-a constricted, nasal sound with little projection but extensive flexibility	-simply buzz as clear a tone, with as open an aperture as possible to avoid static	-all articulations (etc.) are possible -pitch accuracy will be a problem without a point of reference (or "perfect pitch") -avoid lower range
4. Mouthpiece kissing (R) ex. 56	* (kiss-m.p.)  * explain briefly	-a sharp, unpitched, accented kissing sound -not very loud	-remove mouthpiece and suck aggressively through the mouthpiece with puckered lips	-see Chapter 8, No. 6 for a similar but louder effect
5. Muted mouthpiece (R) ex. 56	* (m.p. alone)  * explain thoroughly	(+) (o) -a "du-wa" effect from the normal mouthpiece sound	-cup your hands around the mouthpiece and buzz while rhythmically opening (o) and closing (+) the fingers of your outside hand	-similar technique to whistling through your thumbs with cupped hands
6. Mouthpiece novelties a. siren (R) ex. 57 b. whistle (R) ex. 57	* (m.p. into bell)  * (m.p. whistle) 	-like a siren, but only slightly different from m.p. alone (see Comments) -a high, breathy, single pitched whistle (itches not predictable)	-buzz a detached mouthpiece deep into the bell of the horn (a close microphone setting will help pick up the added ring from the bell) -cover the large end of the m.p. with the thumb and blow across the top of the stem end like a flutist	-a more accurate siren sound is possible with this technique for the trumpet (or any smaller bell flare) -two pitches (octaves) are possible depending on the force of the air, the highest being piercingly loud -due to the lack of resistance only short tones are possible


NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
6. Mouthpiece novelties (cont.) c. m.p. "pop" (R) ex. 57	* (m.p. pop) 	-popping sound of a single moderate volume (similar to a vocal "clucking" with the tongue)	-cover the stem opening firmly with the inside of your 5th finger ("little") and insert your thumb into the large end, pulling outward causing suction and the resultant vacuum to "pop" upon the thumb's release	-more difficult to describe than to do -moderately fast rhythms are possible -other brass mouthpieces are often too shallow or too big for this effect
d. m.p. "whoosh" (R) ex. 57	* (m.p. "whoosh")  <i>sffz</i> * all notations for No. 6 will need explanations	-a loud, short, rush of air sounding like "whoosh"	-(see Chapter 12, No. 1g) and blow an aggressive gush of air using that mouthpiece positioning	-especially loud with multiple horns -due to the depth of the cup and the narrow diameter of the mouthpipe, this is more effective for horn than other brasses -allow time to prepare the position of the mouthpiece

III. EXAMPLES

All of the following examples are included on the recording and identified by the example numbers (i.e. examples 55 - 57).

Example 55
(Nos. 1, 2 & 3)

(m.p. alone) (m.p./horn) (hand pop)



Example 56
(Nos. 4 & 5)


(m.p. alone) (kiss m.p.)



Example 57
(Nos. 6a. b. c. d.)

(m.p. into bell) (m.p. whistle) (m.p. "whoosh") (m.p. pop)

mp *sffz* *sffz*



Chapter 14

MISCELLANEOUS

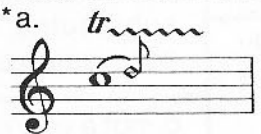

I. STATEMENT

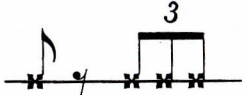


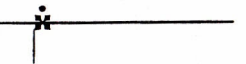
As with Chapter 8, "Varied Timbral Potentials," this chapter will serve as a catch-all for the marginal effects which involve removal of tubes, percussive use of the instrument's structural properties, and the combining with other instruments or props for additive timbral results.

With the presentation of these effects, it is hoped that the inventive minds of the composers and performers will search

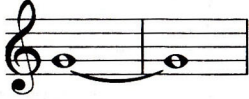
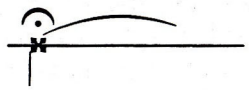
for new sounds with valid and far-reaching potentials, for sounds which could be made in no other way, and for sounds which could be consistently controlled and reproduced. Some of what follows does not fit well into this particular framework, but it is felt to be important because these effects have been requested by composers and might provide the stimulus for more significant discoveries in the future.

II. SPECIFICS

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
1. Tubular tones (R) ex. 58	-normal notation of pitches with the note: "through an open tube" (diamond-headed notes are recommended with a brief explanation)	-a very distant and shallow sound with little resonance -constricted but pure	-remove various valve slides or tuning slides until the desired pitches can be found	-has an intriguing echo-like quality -time is needed for the tube to be removed -single pitches or few pitches are advisable -all ranges and articulations are possible
2. Tubular trills and tremolos (R) ex. 58	*a.  *b.  *explain thoroughly	a. -a rapid alternation between a normal tone and No. 1 above, giving both a timbral interplay and one of resonant presence and distant shallowness b. -self explanatory (see No. 1 above)	-experiment with various slides as above (see No. 1) and remember those tuning slides which are beyond the valves for all the possible variations	- almost any combination of tubular and normal sounds could be worked out by a performer (due to the varied horn designs no single "fingering chart" is possible) -alternative pitches might be advisable to cover for deficiencies from a particular horn design

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
3. Percussive effects a. fingernail rhythms	a. * (use F. nails)  <i>pp</i> *will need thorough explanation	a. a gentle metallic tapping sound	a. use the thumb nail to tap rhythms on the rim of the bell (bell away from body for volume)	a. not very audible with the fingernails, but is a means to a percussive sound if nothing better is available -rhythms can be made louder by tapping on the bell rim with the mouthpiece shank
b. fingernail "trills" and "flutters"	b. * (use F. nails)  *will need thorough explanation	b. rapid metallic tappings (AFAP) with the first ("trill" in the bell) having the greatest volume	b. "trill" by fluttering the fingers with the nails striking the inside surface of the bell, and "flutter" by pressing the thumb and index finger together and rapidly draw them back and forth across the valve slide shutes	b. trills (etc.) should not be done with the m.p. because of potential damage to the finish of the horn
c. mute rattle	c. *(rattle mute)  *will need thorough explanation	-an uneven metallic rattle, the timbre being modified by the material of the mute (e.g. cardboard, fibre board, aluminum, etc.)	c. hold the mute firmly in a nearly inserted position and tap rapidly against the inside of the bell	c. can cause small dents in the bell, thus louder volumes will be resented by the performer
d. valve compression "thop" (R) ex. 58	d. *(valve slide "thop")  * explain fully	d. a single, soft "thop" sound emanating from the valve slide area	d.-remove a valve slide suddenly without depressing the key to that valve	-all of the above are often poor substitutes for the use of actual percussion equipment d.-not a very reliable effect because the actual compression can vary greatly depending on the tightness of the valves of the particular horn (e.g. leaky valves make almost no sound at all)

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>4. Sympathetic vibrations</p> <p>a. into the piano</p> <p>(R) ex. 59</p>	<p>-all of No. 4 will use normal notation of pitches with the specifics as an additional instruction</p>	<p>a.-causes the undamped strings to ring softly on the sounded pitch(es) of the horn and in some cases the overtones of that pitch</p>	<p>a.-direct the bell as near to the inside of the piano as possible and, playing perfectly in tune, sustain the stimulus notes as long as possible (within the confines of the music)</p>	<p>a.-a very common and generally effective request for softer chamber music</p> <p>-piano strings can be undamped with the damper pedal or by silently depressing the chosen piano keys (i.e. pitches)</p>
<p>b. into a drum-head (be specific)</p> <p>(R) ex. 60</p>		<p>b.-takes on the reverberant qualities of the particular drum being used combined with the horn tone (snare add an additional "white noise")</p>	<p>b.-hold the bell, right hand removed, nearly flush to the drum head requested - try different tensions on the drum for best results-perform pitches requested</p>	<p>b.-timpani, bass drum, tenor drum, timbale, and snare drum could all be used; with the snares engaged, you have a very effective tool especially during dramatic dynamic changes.</p>
<p>c. into a tam-tam</p>		<p>c.-a very, very subtle sympathetic ring that can only be heard as a metallic decay after the horn sound stops</p>	<p>c.-with the right hand removed from the bell, aim the center of the horn bell near the center of the tam-tam and articulate very aggressively</p>	<p>c.-only noticeable on sfz attacks and with short notes unless closely miked for amplification</p>
<p>d. into a sizzle cymbal</p> <p>(R) ex. 60</p>		<p>d.-a near equal blend of the normal horn tone and the "sizzle" sound from the rivets within the cymbal</p>	<p>d.-with the right hand removed, place the bell nearly flush with the cymbal</p>	<p>d.-provides a very strong alteration to the horn tone, and, as with the snares, is very effective with dramatic dynamic contrasts</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>5. Mouthpiece exchanging</p> <p>a. different brass mouthpiece</p> <p>b. use an oboe or bassoon reed</p>	<p>-use normal notation for pitches desired, considering the characteristics of the new attachments and include additional instructions.</p>	<p>a. varied and unpredictable distorted horn tone and pitch</p> <p>b. either a high (oboe) or low (bassoon) nearly uncontrollable, distorted pitch with a reedy and possibly static filled sound</p>	<p>a./b. do the best you can with these requests and don't feel bad if they don't seem to work well.</p>	<p>a./b. obviously a request not favored by this writer -demands all new embouchure techniques from a player, and tends to tire the performer quickly</p>
<p>6. "Beat tones" (between two or more instruments)</p>	<p>*with trombone 2 BPS → 5 BPS</p>  <p>*explain fully</p>	<p>-a controlled beat fluctuation between two blending timbres</p>	<p>-if beats are all that are requested, then decide between the performers which one(s) will remain solid and which one will adjust to cause the beats —match dynamics and timbres as closely as possible</p> <p>-bend the tone slowly</p>	<p>-(see Chapter 11, No. 4 and No. 5)</p> <p>-a difficult effect to control but becomes a mildly interesting effect when executed well</p> <p>-don't expect absolute numerical accuracy with the beats</p>
<p>7. Bowing the bell</p> <p>(R) ex. 60</p>	<p>*(bass bow on bell rim)</p>  <p>*explain briefly</p>	<p>-an almost ethereal ringing tone of moderate length and volume</p>	<p>-build up some rosin on one point of your bell rim and draw the bow downward with an even pressure and speed at that point on the flare</p> <p>-experiment with various spots on the flare</p> <p>-detach the bell (if possible) for further options</p>	<p>-requires preparation by the player and a new technique for an even bowing</p> <p>-will probably have a single pitch, though not predictable, depending on materials and thickness of the bell flare</p>

III. EXAMPLES

All of the following examples are included on the recording and identified by the example numbers (i.e. examples 58 - 60).

Example 58
(Nos. 1, 2 & 3d.)

f (valve slide "thop") (open tube) (tube - normal)
p sfz flutter < ff n

Detailed description: This musical example is written on a single treble clef staff. It begins with a series of eighth notes, starting with a dynamic marking of *f*. The notes are grouped by a slur. Following this, there is a quarter rest, then a quarter note marked with a dynamic of *p*. This is followed by a half note marked *sfz*. Next is a quarter note marked *flutter*, which is followed by a series of eighth notes marked *ff*. The piece concludes with a half note marked *n*. Above the staff, three annotations in parentheses indicate specific techniques: "(valve slide 'thop')", "(open tube)", and "(tube - normal)".

Example 59
(No. 4a.)

(into the piano damper depressed)
ff mf f

Detailed description: This musical example is written on a single treble clef staff. It starts with a half note marked *ff*, which has a fermata above it. This is followed by a quarter rest, then a quarter note marked *mf*, and another quarter note marked *f*. The piece continues with a series of eighth notes, ending with a half note marked *f*. Above the staff, the annotation "(into the piano damper depressed)" is placed above the first note.

Example 60
(Nos. 4b., 4d. & 7)

(bass bow on bell rim) (into a sizzle cymbal) (into a snare drum)
sfz sfz n

Detailed description: This musical example is written on a single treble clef staff. It begins with a half note marked *sfz*, which has a fermata above it. This is followed by a quarter rest, then a quarter note marked *sfz*, and another quarter note marked *sfz*. The piece continues with a series of eighth notes, ending with a half note marked *n*. Above the staff, three annotations in parentheses indicate specific techniques: "(bass bow on bell rim)", "(into a sizzle cymbal)", and "(into a snare drum)".

Chapter 15

COMBINATIONS

I. STATEMENT

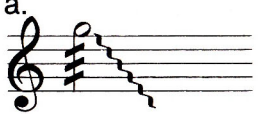


The possible combinations are seemingly endless when one begins to consider the nearly 200 effects discussed in this book. From this point it is more for the creative composer and performer to combine and discover than for me to continue to list. However, there are a few combinations which are common enough to be considered standard. Some of these have been used in the brief recorded examples for the previous chapters (i.e. Examples 6, 12, 42, 44, 54 and 58).



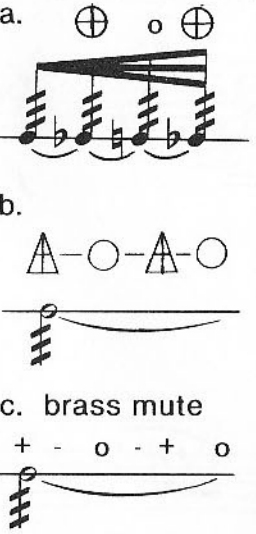
Some of the more obvious combinations would involve the various muted qualities while executing many of the techniques

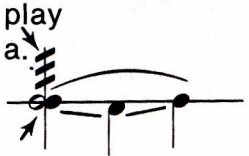
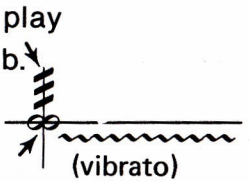
found in Chapters 4 through 14. Others might involve trills and tremolos with Chapters 4, 6, 7, 8, 10, 11, 13 and 14, glissandos with Chapters 4, 5, 7, 11, and 13, half-valve with vocalizations and vibrato, quarter-tones with varied timbral potentials, ad infinitum.

Below are a few of the most frequent combinations. This is, without a doubt, the most incomplete, or rather the most generously open-ended chapter within this book.

II. SPECIFICS

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>1. Flutter-tongue glissando</p> <p>(R) ex. 61</p>	<p>a.</p>  <p>(or)</p> <p>b.</p>  <p>(or)</p> <p>c.</p>  <p>etc.</p> <p>etc.</p>	<p>-a very raucous addition to the sounds of the many and varied glissandos (see Chapter 6)</p>	<p>-flutter the tip of the tongue (see Chapter 4, No. 10) while performing the various glissandos (see Chapter 6)</p>	<p>-excellent means to a noisier, dirtier glissando</p> <p>-all mutings are possible</p> <p>-also usable with many mouth-piece effects (see Chapter 13)</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
<p>2. Flutter-tongue trills and tremolos</p> <p>(R) ex. 62</p>	<p>a.</p>  <p>etc. etc.</p>	<p>-a very raucous addition to the sounds of the many potential trills and tremolos (see Chapter 5)</p>	<p>-flutter the tip of the tongue (Chapter 4, No. 10) while performing the various trills and tremolos (see Chapter 5)</p>	<p>-most effective with valve trills and tremolos</p> <p>-valve tremolo will not be heard during a flutter-tongue</p> <p>-all mutings are possible</p>
<p>3. Trilled glissando</p> <p>(R) ex. 63</p>		<p>-an oscillating slow glissando giving a pseudo-electronic quality when in the upper register</p>	<p>-trill the originating note as appropriate, then begin a slow ascending valve-fluttered glissando upward while continuing the trill action at the lip</p>	<p>-a most significant effect in the upper register</p> <p>-avoid too high an origination point</p> <p>-descending not as effective</p> <p>-all mutings are possible</p>
<p>4. Flutter with alternating muted effects</p> <p>(R) ex. 64</p>	<p>a.</p>  <p>b.</p> <p>c. brass mute</p> <p>+ - o - + o</p>	<p>-see Chapter 2, No. 10 and No. 13 and Chapter 3, No. 3 and combine these timbral undulations with a flutter tongue (Chapter 4, No. 10)</p>	<p>-see Chapter 2, No. 10 and No. 13, Chapter 3, No. 3 and Chapter 4, No. 10</p>	<p>-use of the mute is the most subtle and effective when in softer dynamics</p> <p>-very useful sounds and not difficult to coordinate</p>

NAME	NOTATION	EFFECT	TECHNIQUE	COMMENTS
5. Flutter with vocalized glissando or vibrato (R) ex. 65	<p>play a.</p>  <p>sing</p> <p>play b.</p>  <p>sing</p>	<p>-additional disturbance to the beats produced by near unison vocalizations (see Chapter 11, No. 4)</p> <p>-a dirty and unstable quality</p>	<p>-hold tight to the flutter tongued/played pitch (Chapter 4, No. 10) and sing the prescribed variances with a similar tone and volume (Chapter 11, No. 4)</p>	<p>-more difficult to coordinate and limited to the player's vocal blending potential with the horn</p> <p>-a disturbingly angry, though not necessarily aggressive sound</p> <p>-remember to compose alternative ranges for the vocalizations.</p>

III. EXAMPLES

All of the following examples are included on the recording and identified by the example numbers (i.e. examples 61 - 65)

Example 61

(No. 1b. & c.)



Example 62

(No. 2a. & b.)



Example 63

(No. 3)

Musical notation for Example 63 (No. 3) on a treble clef staff. The piece begins with a trill (tr.) over a dotted quarter note. This is followed by a glissando (gliss.) over a quarter note. The notation then shows a quarter rest, followed by a trill (tr.) over a quarter note, and another glissando (gliss.) over a quarter note. The piece concludes with a double bar line.

Example 64

(No. 4a. b. & c.)

Musical notation for Example 64 (No. 4a. b. & c.) on a treble clef staff. The piece starts with a dynamic marking of *mp* and a crescendo hairpin leading to *f*. Above the first few notes is a diagram of a triangle with a circle inside, and another triangle with a circle inside. The notation continues with a *sfz* dynamic marking and a crescendo hairpin. Above the notes are symbols: a circle with a plus sign, a circle with a dot, a circle with a plus sign, a circle with a dot, a circle with a plus sign, and a circle with a dot. The piece then features a *f* dynamic marking and a section labeled "brass mute" with a series of notes marked with a plus sign. The notation ends with a double bar line and a fermata over the final note.

Example 65

(No. 5a. & b.)

Musical notation for Example 65 (No. 5a. & b.) on a treble clef staff. The piece begins with a triplet of notes marked with a '3' above a bracket. This is followed by a quarter note, a quarter rest, and a quarter note. The notation then shows a series of notes with a slur over them, and a dynamic marking of *mf*. The piece concludes with a double bar line and the instruction "V. slow".

APPENDIX

INDEX OF EFFECTS/TECHNIQUES PRESENTED

A Topical Listing

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Possible playing range	Not recommended (though possible)
Most characteristic sound	Highest note possible
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- Quarter-tone vibrato
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- Tubular trills and tremolos
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- Flutter-tongue trills and tremolos
- Trilled glissando
- Flutter with alternating muted effects
- Flutter with vocalized glissando or vibrato

COMPLETE OVERTONE SERIES

(Full Double Horn F/B \flat)

The first system of musical notation shows the complete overtone series for F and B \flat horns. The treble clef staff contains notes numbered 1 through 16, with asterisks above notes 6, 10, 11, 12, and 13. The bass clef staff contains notes numbered 1 through 5. The notes are: (6) F \flat , (5) E \flat , (4) D \flat , (3) C \flat , (2) B \flat , (1) A \flat , (7) G \flat , (8) F \flat , (9) E \flat , (10) D \sharp , (11) C \sharp , (12) B \flat , (13) A \flat , (14) G \flat , (15) F \flat , (16) E \flat . The right-hand system shows the notes for F: 2 and B \flat : 123.

F horn: 0
B \flat horn: 13

F: 2
B \flat : 123

The second system of musical notation shows the complete overtone series for F and B \flat horns. The treble clef staff contains notes numbered 1 through 12, with flats for notes 10, 11, and 12. The bass clef staff contains notes numbered 1 through 3, with flats for notes 1 and 2. The notes are: (1) G \flat , (2) F \flat , (3) E \flat , (4) D \flat , (5) C \flat , (6) B \flat , (7) A \flat , (8) G \flat , (9) F \flat , (10) E \flat , (11) D \flat , (12) C \flat . The right-hand system shows the notes for F: 12 and (F: 3).

F: 1

F: 12
(F: 3)

The third system of musical notation shows the complete overtone series for F and B \flat horns. The treble clef staff contains notes numbered 1 through 13, with flats for notes 1, 2, 3, 4, 6, 7, 8, and 9. The bass clef staff contains notes numbered 1 through 3, with flats for notes 1 and 2. The notes are: (1) G \flat , (2) F \flat , (3) E \flat , (4) D \flat , (5) C \flat , (6) B \flat , (7) A \flat , (8) G \flat , (9) F \flat , (10) E \flat , (11) D \flat , (12) C \flat , (13) B \flat . The right-hand system shows the notes for F: 13.

F: 23

F: 13

F : 123

B \flat horn : 0

B \flat : 2

B \flat : 1

B \flat : 12
(B \flat : 3)

B \flat : 23

* All black notes are usable only as micro-tonal fingerings (i.e. 7th, 11th, 13th Partial) (See Chapter 10)

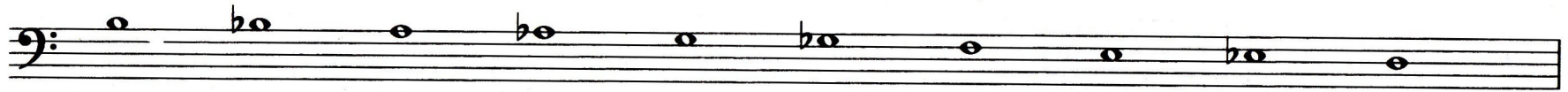
ALL POSSIBLE FINGERINGS

(Full Double Horn F/B^b)

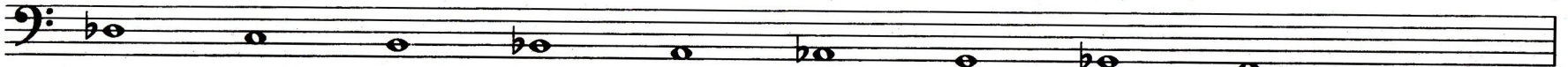
	<u>o</u>	<u>e</u>	<u>b^be</u>	<u>o</u>	<u>b^bo</u>	<u>e</u>	<u>o</u>	<u>b^bo</u>	<u>e</u>	<u>b^be</u>
F:	all	all	all	all	all	all	all	all	2	1
B ^b :	all	all	all	2	1	0	2	1	1	12
				1	12	12	23	13	12	23
			*12	23	23	13	123	123	23	13
			23	13	13	123			13	123
			13	123	123				123	2
			123						0	23
									12	
									123	

	<u>o</u>	<u>b^bo</u>	<u>e</u>	<u>o</u>	<u>b^bo</u>	<u>e</u>	<u>b^bo</u>	<u>o</u>	<u>e</u>	<u>b^be</u>
F:	0	2	1	0	2	0	2	0	2	1
	12	23	13	12	23	1	12	1	12	23
	23	13	123	123	1	13	123	23	13	123
	13	123	0	2	23	12	23	0	2	1
B ^b :	123	2	1	12	123	13	123	13	123	
	0	12	23	13						
	1	123								
	13									

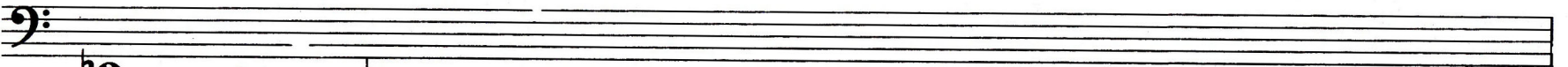
	<u>o</u>	<u>b^bo</u>	<u>e</u>	<u>b^bo</u>	<u>o</u>	<u>e</u>	<u>b^bo</u>	<u>o</u>	<u>b^bo</u>	<u>e</u>
F:	12	23	0	2	1	0	2	1	12	0
	13	123	13	123	0	12	23	13	123	23
B ^b :	0	2	1	12	23	2	1	12	23	0
	12	23	13	123		13	123			13



F:	2	1	12	23	0	2	1	12	23	13
Bb:	$\frac{13}{2}$	$\frac{123}{1}$	$\frac{12}{12}$	$\frac{23}{23}$	$\frac{0}{13}$	$\frac{2}{123}$	$\frac{1}{0}$	$\frac{12}{2}$	$\frac{23}{1}$	$\frac{13}{12}$
	123									



F:	123	0	2	1	12	23	13	123	(“Pedal gap”)
Bb:	$\frac{123}{23}$	$\frac{0}{13}$	$\frac{2}{123}$	$\frac{1}{-}$	$\frac{12}{-}$	$\frac{23}{-}$	$\frac{13}{-}$	$\frac{123}{-}$	$\frac{0}{2}$
					(“pedal gap”)				



F:	—	(“pedal gap”)	—	0	2	1	12	23	13	123
Bb:	1	12	23	$\frac{0}{13}$	$\frac{2}{123}$	$\frac{1}{-}$	$\frac{12}{-}$	$\frac{23}{-}$	$\frac{13}{-}$	$\frac{123}{-}$

* Note: All “12” combinations can also be played “3” sounding slightly lower.

SELECTED SCORES

The following is a list of the most significant scores studied. Each produced at least one excerpt which was considered in the compilation of this book. Thus, these compositions are, in varying degrees, representative of contemporary horn writing.

Amram, David. **Concerto for Horn and Orchestra**. C.F. Peters (1971)

Bazelon, Irwin. **Brass Quintet** (1963). Boosey and Hawkes (1965)

De-Tonations for Brass Quintet and Orchestra (1975-76). Novello

Banks, Donald. **Horn Concerto** (1965). Edition, Schott, (1968)

Barboteu, George. **Tournoi** (Piece for Percussion and Brass Quintet). Editions Choudens (1973)

Bassett, Leslie. **Wind Music** (Woodwind Quintet and Alto Saxophone). Merion (1977)

Berio, Luciano. **Sequenza IV** (For Trombone). Universal Edition (1968)

Bishop, Jeffrey. **Spells and Incantations** (Horn and Piano). Novello and Company (1972).

Bozza, Eugene. **Graphismes** (1975). Alfonse Leduc

Brant, Henry. **An American Requiem** (1976). Peters

Britten, Benjamin. **Serenade, Op 31**. Boosey & Hawkes (1944)

Brown, Earle. **Available Forms I**. Associated Music (1962)

Bubalo, Rudolph. **Tubularity for Horn and Tape**. M.S., April (1977)

Cage, John. **Concerto for Prepared Piano and Chamber Orchestra**. Peters (1951)

Callaway, Ann. **Four Elemental Pieces** (1977). M.S.

Wind Fantasy and Water Portrait. M.S.

Carter, Elliott. **Brass Quintet** (1974). Associated Music

Double Concerto (1961). Associated Music

Childs, Barney. **Variations for David Racusen** (Solo Horn). Tritone Press (1967)

Cope, David. **Rebirth**. Seesaw Publications (1975)

Crumb, George. **Variation for Large Orchestra**. Peters (1972)

Dallapiccola, Luigi. **Three Questions with Two Answers** (1962) (For Orchestra) Editioni Suvini Zerboni - Milano

Deason, David. **Air Freight** (Flute, Tenor Saxophone, Horn). M.S.

de Crepy, Bernard. **Synopose Pour Cor et Piano**.

Editions Transatlantiques (1972)

Druckman, Jacob. **Incenters**. MCA

Windows (For Orchestra). MCA Music (1972)

Durko, Zsolt. **Iconography No. 2** (For Horn and Chamber Ensemble)

Editio Budapest (1971)

Erb, Donald. **Sonneries**. Merion Music/Presser (1971)

Three Pieces. Merion Music/Presser (1973)

Faust, Randall E. **Prelude for Horn**. M.S. (1977)

Feldman, Morton. **For Franz Kline**. Peters (1962)

Fennelly, Brian **Quintupolo - five fold five--** 1978, (For Brass Quintet

and Orchestra) American Composers Alliance

Foss, Lucas. **The Cave of the Winds** (Wind Quintet) (1972). Salabert Gibson, David. **Ligatures**. M.S.

Ginastera, Alberto. **Bomarzo** (1964). Boosey & Hawkes (1977)

Gistelinc, Elias. **KOAN II** (For Horn and Piano). Edition NADEL Uitgave (1975)

Good, Kevin L. **Reflections** (Solo Horn) (1979). M.S.

Greeson, James **Pensees** (Solo Horn and Voices/or Tape). M.S. (1977)

Hamilton, Iain. **Voyage for Horn and Chamber Orchestra** (1970).

Theodore Presser Company

Harrison, Jonty. **Round and Around** (9 Horns/2 Percussion). M.S. (1975)

Hartley, Walter. **Sonorities II** (For Horn and Piano) (1975).

Tenuto Publications (1976)

Henze, Hans Werner. **Apollo et Hyazinthus**. Schott, (1957)

Hill, Douglas. **ABSTRACTIONS For Solo and 8 Horns** (1980).

Studio P/R (1983)

Jazz Soliloquies (1978-80). Studio P/R (1983)

SKETCHES for Seven Horns (1977). M.S.

Soliloquies for Horn (1973-78). M.S.

Husa, Karel. **Concerto for Brass Quintet and String Orchestra**.

Alfonse Leduc (1971)

Divertimento for Brass Quintet (1970). Associated (1974)

Hyde, George W. **Color Contrasts** (For 8 Horns). LA. Horn Club Library

Johnson, Roger. **Ritual Music** (For Six Horns). Shawnee Press Inc. (1972)

Kalmar. **La Stanza Quarta** (1976) (Trio per Tre Corni in Fa). M.S.

Kavanaugh, Patrick. **Debussy Variations No. 11 for Solo Horn**.

Pembroke Music Co. (1977). Carl Fischer

Kolberg, Kare. **En Blasekvintett** (1978). Norste Musikforlag A/S Oslo

Lang, Istvan. **Concerto Bucolico** (Per Corno e Orchestra).

Editio Budapest (1973)

Monologue (1974). Editio Musica Budapest (1976)

Ligeti, György. **Aventures** (1964). Henry Litolffs

Kammerkonzert (1969-70). Schott (1974)

Ten Pieces for Wind Quintet (1969). Schott

Louel, Jean. **Invention** (Pour Cor Solo). CeBeDeM, Brussels (1974).

(Henri Elkan - Philadelphia)

Marshall, Pamela. **Miniatures** (For Solo Horn). Seesaw Music Corp. (1976)

Martino, Donald. **Concerto for Wind Quintet** (1964). Ione Press/Schirmer

Mayer, William. **Dream's End**. M.S.

McCabe, John. **The Goddess Trilogy I** (Horn and Piano). Novello Co. Ltd. (1978)

McKinley, William Thomas. **Overture Sinfonia for Brass Quintet**. M.S.

Messiaen, Olivier. *From the Canyons to the Stars VI*. Apel Interstellare Universal Editions

Moss, Lawrence. *Auditions Woodwind Quintet/Tape*. Carl Fischer

Musgrave, Thea. *Horn Concerto (1971)*. J. & W. Chester, London

Music for Horn and Piano (1964). J. & W. Chester

Night Music (1969). J. & W. Chester (1972)

Nono, Luigi. *Polifonia - Monodia - Ritmica*. Ars Viva Verlag (1961)

Ott, Joseph. *Solos for Horn (Horn and Tape)*. Claude Benny Press (1974)

Peaslee, Richard. *The Devil's Herald (Solo Tuba, 4 Horns, Percussion)* Helicon Music Corp. (1975)

Penderecki, Krzysztof. *De Natura Sonoris*. Moeck Verlag - Celle (1967)

Petric, Ivo. *Lirizmi (1969) (Horn, Piano)*. Hans Gerig (1975)

Rochberg, George. *Chamber Symphony for Nine Instruments (1953)*. Presser

Schuller, Gunther. *12 X 11 (1964)*. MJQ Music

Five Pieces for Five Horns (1952). Margun Music

Studies for Unaccompanied Horn. Oxford University Press (1962)

Schwartz, Elliott. *Divertimento No. 2 (For 2 Horns/2 Keyboard Players) (1968)* Smith Publications (1974)

Rip (1970) (Brass Trio/Tape). Carl Fischer

Texture for Strings, Winds, Brass (1966). Broude (1967)

Schwertsik, Kurt. *Trio für Violin, Horn und Klavier*. Edition Modern (1962)

Segers, Jan. *Study for Horn and Tape (1977)*. Ed. Musc. SCERZANDO

Sheriff, Noam. Invention for Horn. Israel Music Institute (1969)

Smyth, Ethel. *Concerto for Violin, Horn and Orchestra*. J. Curwen & Sons Ltd. (1928). G. Schirmer, Inc.

Stacy, William B. *H*O*R*N (For Horn Alone)*. Ludwig Music (1974)

Turok, Paul. *Music for Nine Horns Op. 34, No. 4*. Seesaw Music Corp. (1975)

Sonata for Horn and Piano Op. 36. The Brass Press (1973)

Varèse, Edgar. *Hyperprism (1924)*. J. Curwen, London

Integrales (1926). J. Curwen, London

Octandre (1924). J. Curwen, London

Offrandes (1921). Birchard (1927)

Wilding-White, R. *Concertante (Horn, Violin, Strings) (1964)*. M.S.

Wolff, Christian. *Quartet for Horns*. C. F. Peters (1967)

Wourinen, Charles. *Octet*. J. Marx (1966)

Wright, Maurice. *Chamber Symphony for Woodwind Quintet*. Mobart (1979)

Xenakis, Iannis. *Anaktoria*. Salabert

Linaia - Agon (For Horn, Trombone and Tuba). Editions Salabert, 1972

ST/10-1,080262. Boosey & Hawkes (1967)

SELECTED BOOKS

The following books and articles were referred to at one time or another during the compilation of this book. Those marked with an asterisk (*) are of special interest due to their quality, content and completeness.

Backus, John. *The Acoustical Foundation of Music*. Norton (1969)

*Bartolozzi, Bruno. *New Sounds for Woodwind*. Oxford University Press (1967)

Berv, Arthur. *A Creative Approach to the French Horn*. Chappell (1977)

Boretz, Benjamin and Edward T. Cone (editors). *Perspectives on American Composers*. Norton (1971)

**Perspectives on Notation and Performance*. (All articles!) Norton (1976)

Cage, John. *Notations*. Something Else Press (1969)

**Silence*. M.I.T Press (1961)

Coar, Birchard. *The French Horn*. Dr. Birchard Coar (1947)

Cole, Hugo. *Sounds and Signs: Aspects of Musical Notation*. Oxford University Press (1974)

Cope David. *New Directions in Music*. W. C. Brown (1976)

**New Music Composition*. Schirmer (1977)

**New Music Notation*. Kendall, Hunt (1976)

Dick Robert. *The Other Flute: a Performance Manual of Contemporary Techniques*. Oxford University Press (1974)

*Fink and Ricci (editors). *The Language of Twentieth Century Music, A Dictionary of Terms*. Schirmer (1975)

Hohstadt, Thomas. *Modern Concepts in Music for Brass*. F. E. Olds (1962)

Kirby, Percival R. *Horn Chords: An Acoustical Problem*.

The Horn Call, November, 1977

Kurka, Martin J. *A Study of the Acoustical Effects of Mutes on Wind Instruments*. F. E. Olds (1950)

Lang, Paul H. (editor). *Problems of Modern Music*. Norton (1962)

Lang, Paul H. and Nathan Broder (editors) *Contemporary Music in Europe: A Comprehensive Survey*. Norton (1965)

Randel, Don Michael. *Harvard Concise Dictionary of Music*. Belknap Press (1978)

*Read, Gardner. *Contemporary Instrumental Techniques*. Schirmer (1976)

Music Notation. Allyn and Bacon (1964)

Thesaurus of Orchestral Devices. Greenwood Press (1969)

*Schuller, Gunther. *Horn Technique*. Oxford University Press (1962)

Schwartz, E. and Childs, B. (editors). *Contemporary Composers on Contemporary Music*. Holt, Rinehart and Winston (1967)

*Smoker, Paul. *A Comprehensive Performance Project in Trumpet Literature With a Survey of Some Recently Developed Trumpet Techniques And Effects Appearing in Contemporary Music*. Doctoral Dissertation, University of Iowa (1974)

Turetzky, Bertram. *The Contemporary Contrabass*. University of California Press (1974)

*Vinton, John (editor). *Dictionary of Contemporary Music*. Dutton (1974)

Whaley, David Robert. *The Microtonal Capability of the Horn*. Doctoral Dissertation, University of Illinois

DOUGLAS HILL - PROFESSOR OF HORN

Douglas Hill, Professor of Horn at the University of Wisconsin-Madison since 1974, and past President of the International Horn Society, has played principal horn with the Rochester Philharmonic, New York City Ballet, Martha Graham Dance Co., the Contemporary Chamber Ensemble (European tour and recording), "Mostly Mozart" at Carnegie Hall, and presently with the Wisconsin Brass Quintet and the Madison Symphony. Hill was the original hornist in the Spoleto Festival Brass Quintet and has soloed with orchestras in the U.S., Germany, and China, and as a recitalist and clinician at numerous International, National, and Regional Horn and Brass Workshops. His interest in modern performance practices is fully demonstrated in his book *Extended Techniques for the Horn - A Practical Handbook for Students, Performers and Composers.*

Douglas Hill was recently included as one of only 20 hornists in the book of biographical sketches: *Twentieth Century Brass Soloists* by Michael Meckna.

Professor Hill has recorded two albums with pianist Karen Zaczek Hill on Crystal Records, "A Solo Voice" on GunMar Records (modern unaccompanied works), and has recorded with the St. Louis Symphony, Contemporary Chamber Ensemble of Chicago, Wingra Woodwind Quintet, Dick Shory at Carnegie Hall, and the Wisconsin Brass Quintet on Summit Records. Hill has produced a full length educational video "HILL ON HORN," and frequently contributes articles to leading journals. He has served on the faculties of the Oberlin Conservatory, Aspen Music School, Asian Youth Orchestra Rehearsal Camp in Hong Kong, the Conservatories of Beijing and Shanghai, the Sarasota Music Festival, the University of South Florida, Wilkes College, and the University of Connecticut

As a frequent recipient of research grants, he has studied unrecorded horn and piano repertoire, extended techniques, hand horn, extemporization and compositional techniques and applications. Mr. Hill is also a published and recorded composer including such works as: "Jazz Set for Solo Horn," "Shared Reflections for Four Horns," "The Spirit World...Massacre," and "Ceremonial Images" for tribal drum and large ensemble, produced for Nebraska Educational Television (commissioned by the Omaha Symphony.)



EXTENDED TECHNIQUES FOR THE HORN

**A Practical Handbook
for Students, Performers
and Composers
by DOUGLAS HILL**

With the growing interest in hand horn (natural horn) and jazz horn, *Extended Techniques for the Horn* by Douglas Hill is an important text in horn repertory. Virtually all the sound possibilities of the horn are included in this one book, with clearly and concisely organized descriptions, notation and comments to both performers and composers of horn music. The sixty-five recorded examples on seventy-two tracks are essential for the student and performer to hear how the technique or effect should sound when properly played. It is also important for composers to hear the almost limitless possibilities of the horn sounds.



Intermediate level horn students will find:

- the common playing range
- the possible playing range (extremes)
- mutes (7) and variations of muted sounds
- full, 1/2 and 3/4 stopped horn
- tonguing: accented, unaccented, double and flutter
- trills, tremolos and glissandos
- vibrato
- charts on the complete overtone series and all possible fingerings

Professional performers and composers will find:

- half-valved effects
- varied timbral potentials
- quarter tones
- air sounds
- mouthpiece effects
- bend/dip, doink/doit, fall-off/drop, spill
- flip, rip/smear, lift/flair, plop
- horn chords
- vocalizations
- varied combinations
- ... and much more.

This book demonstrates that the horn is not "the most treacherous of all instruments," but rather "the most versatile of all instruments."