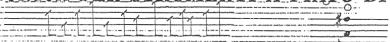


parte iniziale

CHORD N.3

BRUNO BARTOLOZZI

NUOVA TECNICA PER STRUMENTI A FIATO DI LEGNO



ACCORDO N.3
parte centrale
CHORD N.3
central part

SERGIO PENAZZI

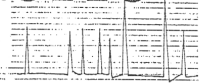
METODO PER FAGOTTO

CHORD N.3

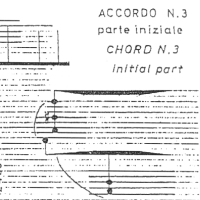
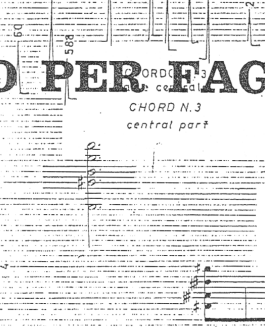
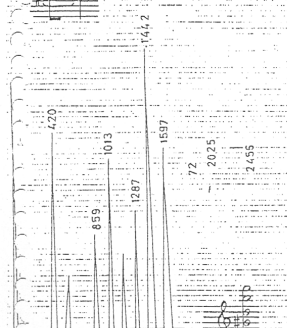
parte centrale

CHORD N.3

central part



ACCORDO N.3
parte iniziale
CHORD N.3
Initial part



EDIZIONI SUVINI ZERBONI - MILANO



INDICE - INDEX

PREFAZIONE <i>PREFACE</i>	1
INTRODUZIONE <i>INTRODUCTION</i>	2
Informazioni tecniche e simboli usati <i>Technical information and symbols used</i>	2
Guida allo studio <i>Guide to the study</i>	8

PARTE PRIMA - PART ONE

Tavola generale delle diteggiature e classificazione timbrica dei suoni <i>General table of fingerings and the classification of tone colours</i>	14
ESERCIZI <i>EXERCISES</i>	33
1. Scala quartitonale <i>Quarter-tone scale</i>	33
2. Scala semitonale alterata di un quarto di tono <i>Semitone scale altered by quarter-tones</i>	35
3. Arpeggi alterati di un quarto di tono <i>Arpeggios altered by quarter-tones</i>	36
4. Arpeggi per quarti di tono <i>Arpeggios using quarter-tones</i>	38
Schema ritmico <i>Rhythmic scheme</i>	42
5. Intervalli alterati di un quarto di tono <i>Intervals altered by quarter-tones</i>	43
6. Intervalli per quarti di tono <i>Intervals using quarter-tones</i>	44
Schema ritmico <i>Rhythmic scheme</i>	48
7. Tremoli <i>Tremolos</i>	49
8. Serie di 24 suoni <i>Series of 24 sounds</i>	54
8 bis. Serie di 7 suoni <i>Series of 7 sounds</i>	54
Permutazioni <i>Permutations</i>	55

9. Timbri diversi di uno stesso suono <i>Different timbres of the same sound</i>	57
10. Trattamento del suono per mezzo dell'uso controllato delle labbra <i>Effects produced by lip control</i>	58
Vibrati. Semi-oscillazioni e oscillazioni <i>Vibratos. Oscillations and half-oscillations</i>	58
Combinazioni di vibrati e oscillazioni <i>Combinations of vibratos and oscillations</i>	59
Suono smorzato <i>The "smorzato" sound</i>	60
11. Effetti speciali <i>Special effects</i>	61
Portamento. Acciaccatura-portamento <i>Portamentos. Acciaccatura-portamentos</i>	61
Chiave pedale <i>Pedal key</i>	63

PARTE SECONDA - PART TWO

Tavola degli accordi omogenei e con differente timbro <i>Table of homogeneous chords and chords comprising sounds of different timbre</i>	64
ESERCIZI <i>EXERCISES</i>	67
1. Accordi omogenei <i>Homogeneous chords</i>	67
Schema ritmico <i>Rhythmic scheme</i>	67
2. Accordi con differente timbro <i>Chords comprising sounds of different timbre</i>	68
Permutazioni <i>Permutations</i>	69
3. Collegamenti fra suoni singoli e un accordo <i>Linking single sounds to a chord</i>	70
4. Effetti speciali <i>Special effects</i>	73
Accordi smorzati <i>"Smorzato" chords</i>	73
Accordo smorzato sovrapposto ritmicamente ad un suono continuato <i>"Smorzato" chords superimposed rhythmically on a single continuous sound</i>	74
Trilli fra due accordi <i>Trills between two chords</i>	75
Trillo fra due accordi combinato con l'esecuzione contemporanea di altri suoni estranei agli accordi stessi <i>Trills between two chords combined with the performance of other sounds foreign to the chords</i>	76
5. Diteggiature aleatorie <i>Alcatary fingerings</i>	76
Nota di informazioni acustica <i>Note on acoustics</i>	77 - 78

PRESENTAZIONE

Questa collana di Metodi è il risultato di lunghe ricerche strumentali iniziate nel 1960. Infatti sin da allora, Sergio Penazzi (Primo Fagotto del Teatro alla Scala e insegnante al Conservatorio « G. Verdi » di Milano) mi portò a conoscenza di nuove possibilità tecniche omofone e polifone che egli sperimentava già da alcuni anni sul suo strumento.

Avuta così l'opportunità di constatare che in virtù dei nuovi procedimenti tecnici — adottati dal Penazzi — si potevano realizzare con il fagotto risultati sonori di straordinario interesse musicale per la loro originalità, ebbe inizio una vera e propria indagine condotta in piena collaborazione.

Successivamente questi procedimenti tecnici furono applicati all'oboe da Lawrence Singer (valente strumentista e mio allievo di composizione) il quale sperimentò sul suo strumento la maniera di suonare con quarti di tono a intonazione determinata.

La definitiva conferma che questa nuova tecnica era valida per tutti gli strumenti a fiato di legno, la potei ottenere con l'aiuto di eccellenti strumentisti dell'Orchestra del Maggio Musicale Fiorentino tra i quali il flautista Pierluigi Mencarelli e il clarinetista Detalmo Corneti.

Bruno Bartolozzi

PRESENTATION

This collection of Methods is the result of a long period of research begun in 1960. At that time, Sergio Penazzi (principal bassoon player of the Milan Teatro alla Scala and teacher at the Verdi Conservatory) made me aware of new technical possibilities for the production of single and multiple sounds, these being the result of several years of experiment with his instrument.

Once I had the opportunity to appreciate how Penazzi's new technical procedures could produce such original and interesting musical results, we began a real and systematic investigation in full collaboration.

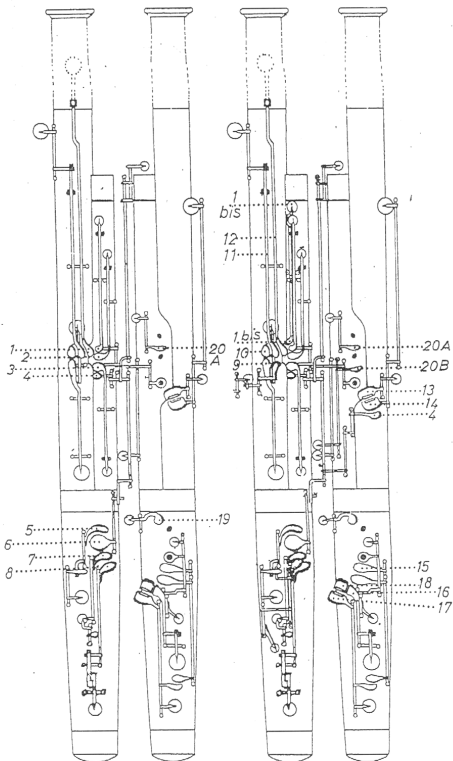
Later, these technical procedures were applied to the oboe by my composition pupil Lawrence Singer (an excellent oboe player) who in addition carried out experiments on the method of playing quarter-tones through special fingerings.

Lastly, I confirmed that the new techniques can be applied to all woodwind instruments through the help of instrumentalists of the Maggio Musicale Fiorentino Orchestra, particularly the flautist Pierluigi Mencarelli and the clarinetist Detalmo Corneti.

Bruno Bartolozzi

DISEGNO SCHEMATICO DELLO STRUMENTO
E RELATIVA NUMERAZIONE DELLE CHIAVI

CHART OF KEY NUMBERS
HECKEL BASSOON



FAGOTTO HECKEL

I fori centrali dello strumento sono indicati come segue:

chiuso = ●
aperto = ○
mezzo aperto = ∪

The central holes of the instrument are indicated as follows:

closed = ●
open = ○
half-open = ∪

La presente collana di Metodi per strumenti a legno si inserisce nel contesto metodologico odierno quale studio di nuovi procedimenti tecnici adatti a realizzare nuovi risultati sonori. Ciò quale studio di una tecnica che permette di sfruttare tutte quelle possibilità omofone-polyfona dei legni non realizzabili con i procedimenti della tecnica tradizionale che non può, per il suo stesso meccanismo, ottenere risultati che non siano quelli omofoni ben noti.

Pertanto questi Metodi sono rivolti — più che a principianti — a strumentisti già in possesso di una discreta conoscenza della tecnica tradizionale; la quale, rimanendo invariata nei suoi attributi, costituisce la base per ogni sviluppo, quindi punto di partenza ben definito e bagaglio tecnico non altrimenti sostituibile.

Ecco perché la tecnica di cui tratteremo, malgrado la novità dei suoi procedimenti, si presenta quale logico sviluppo di quella tradizionale. A conferma di ciò vedremo come non sia necessaria alcuna modifica alla struttura degli strumenti in uso per ottenere quanto ci prefiggiamo.

Scopo di questi Metodi è dunque il disciplinare lo studio di procedimenti tecnici i cui risultati vadano ad arricchire il materiale sonoro esistente. Si tratta dunque dello studio di una tecnica per i legni — da noi già teorizzata (1) — studio applicato singolarmente a ciascuno di questi strumenti.

Tale tecnica consente di:

- 1) Suonare musica con quarti di tono; cioè emettere per la intera estensione dello strumento successioni di suoni intervallati per quarto di tono.
- 2) Organizzare una vera e propria polifonia strumentale; quindi emettere accordi da due a sei suoni — intervallati anche per quarti di tono — e passare dall'emissione di un suono singolo a quella di un accordo e viceversa.
- 3) Arricchire notevolmente la coloritura timbrica sia del suono singolo che delle varie combinazioni di accordi.

Altra finalità di questa pubblicazione — e non certo di secondaria importanza — sarà di offrire all'interesse del compositore una quantità di materiale sonoro già classificato e quindi usufruibile al momento: in tale maniera verrà offerta l'opportunità di comporre musica con nuove possibilità strumentali.

Per dar modo d'introdursi gradualmente nello studio dei vari procedimenti tecnici, suddivideremo il metodo in due parti: nella prima tratteremo dello studio delle possibilità omofone, nella seconda di quelle polyfona.

L'ordine, il testo letterario e l'organizzazione musicale dei Metodi di questa collana sono opera di Bruno Bartolozzi.

This collection of Methods for woodwind instruments aims at demonstrating new-techniques suitable for the production of new types of sounds. These techniques permit the exploitation of all those monophonic and multiphonic possibilities which cannot be obtained by traditional woodwind techniques, which are suitable for playing only single sounds.

These Methods are, in the main, for expert players with a good command of traditional techniques, rather than for beginners. Traditional playing techniques are well defined, and being a foundation on which further developments can be built, cannot be side-stepped. The new techniques therefore, in spite of the novelty of certain playing methods, are really a logical development of tradition. As a confirmation of this, it will be seen that no modification of the present structure of instruments is necessary to obtain the new effects which will be illustrated.

The aim of these Methods is therefore a disciplined study of playing techniques, the sound-results of which are an enrichment of those which already exist. It is a study of woodwind techniques, already discussed in theory (1), applied to each individual instrument.

These techniques allow:

- 1) the performance of music in quarter-tones throughout the compass of instruments.
- 2) the organization of a true instrumental polyphony including chords of from two to six sounds (including the use of quarter-tones) and also the passing from single sounds to chords and vice versa.
- 3) A considerable enrichment of the tone colour of both single sounds and chords.

A further objective in this publication which is certainly not of secondary importance, is to furnish composers with a fair quantity of classified sound material which they can use as they wish, so that they now have a chance of writing music which uses these new instrumental possibilities.

So that the techniques can be introduced gradually, this method is divided in two parts; the first will deal with single sounds, the second with multiple sounds.

The order, text and musical organization of the Methods in this collection are the work of Bruno Bartolozzi.

(1) B. Bartolozzi: « New Sounds for woodwind », Ed. Oxford University Press, Londra 1967.

(1) New Sounds for Woodwind, by Bruno Bartolozzi, Oxford University Press, London 1967.

INTRODUZIONE

Come è noto, la tecnica tradizionale ha come obiettivo la emissione omofona-omogenea dei suoni contenuti nell'estensione dello strumento suddivisa per semitono.

Tale estensione si ottiene utilizzando un unico sistema di produzione dei suoni e cioè il sistema misto sul quale è basata la costruzione del fagotto. Si stema in cui si dispone di una serie di fondamentali del registro basso — determinati per costruzione — dai quali si estraggono i relativi armonici « naturali », necessari al completamento delle note dei registri superiori, con il meccanismo dell'ottavizzare: *in un ordine prestabilito e mai variato.*

Si tratta quindi di uno sfruttamento parziale, omofono-omogeneo, delle effettive risorse di questo strumento, le quali sono invece — come quelle di tutti gli strumenti a legno — *omofone-pollifone con timbri sensibilmente diversi.*

E dunque logico che la tecnica tradizionale abbia adattato i mezzi esecutivi utilizzando un unico sistema di diteggiatura, d'imboccatura e d'insufflazione.

Nel nostro caso si tratta invece di studiare una tecnica che ha per obiettivo lo sfruttamento delle intere risorse omofone-pollifone del fagotto nell'ambito dell'estensione suddivisa per quarti di tono. È chiaro che in tal modo verranno utilizzati più sistemi di produzione dei suoni, i quali consentiranno di ottenere un vasto sfruttamento del fenomeno degli armonici.

Questa tecnica si servirà di più sistemi di diteggiatura e di varie maniere d'uso dell'imboccatura e dell'insufflazione. Pertanto è necessario che lo strumentista conosca in precedenza come siano stati adattati i mezzi esecutivi alle nuove esigenze tecniche, affinché se ne possa avvantaggiare durante lo svolgimento dello studio.

A tale scopo daremo le indicazioni necessarie.

ANCI

Preparare l'ancia alla sua funzionalità richiede abilità e cura assidua come ogni strumentista sa per diretta esperienza: non avremmo niente da aggiungere al riguardo se questo importantissimo mezzo strumentale non fosse chiamato a svolgere in seguito funzioni assai diverse dal consueto.

Pur rimanendo problema individuale la preparazione dell'ancia, indicheremo, secondo nuove esperienze, quali sono i principali accorgimenti da osservare e inoltre quale sia il controllo da fare per accertarsi della funzionalità dell'ancia rispetto al complesso delle esigenze tecniche. Tenuto presente come sia da scartare in partenza l'uso di più ancie durante una esecuzione e in previsione di usare diverse sezioni dell'ancia — applicando più maniere d'imboccatura — suddivideremo la paletta dell'ancia in tre sezioni principali corrispondenti ad altrettante posizioni delle labbra:



a) Sezione grave = posizione superiore



b) Sezione centrale = posizione normale



c) Sezione acuta = posizione inferiore

INTRODUCTION

As is well known, traditional techniques aim at the production of single sounds of similar tone colour throughout the compass of instruments, subdivided into semitones. This compass is obtained by using a single system of sound production — that is, the « mixed » system on which the bassoon's construction is based. This comprises a set of fundamental tones in the lower register (which determine the instrument's construction) together with their « natural » harmonics which complete the upper register. These harmonics are obtained by overblowing and speaker key mechanisms in a pre-established order and are never varied.

This is therefore a partial exploitation, through single sounds of like timbre, of the real resources of this instrument, which in reality, like all woodwind, can produce both single and multiple sounds of very varied tone colour.

Traditional techniques use playing methods which keep to a single system of fingerings, and maintain one type of embouchure, while the method of blowing remains constant.

But in our case, the main objective is the exploitation of the entire monophonic and multiphonic resources of the bassoon, comprising also the use of quarter-tones throughout the entire compass. Obviously, this calls for the use of a number of methods of sound production which will permit the exploitation of various harmonic phenomena. This technique will use various fingering systems and several different types of embouchure and blowing method. The player, therefore, must first know how performing methods have to be adapted for the new techniques so that he may use them in his studies.

To this end, the following indications are necessary:

REED

As every player knows, the reed must be prepared with great care, and there would be nothing to add if this very important performing mechanism were not called on to function in ways which are far from normal. Though the preparation of the reed remains an individual problem, recent experience has given certain indications as to how it should be prepared and how it can be tested to ascertain whether it is suitable for the new technical requirements. As various sections of the reed must be used, together with various embouchures, the reed may be subdivided in three principal sections, corresponding to three lip positions:



a) lower section = upper position



b) central section = normal position



c) upper section = lower position

È evidente che usando più maniere d'imboccatura applicate a diverse sezioni, dovremo levigare la paletta dell'ancia in modo che ogni parte risulti sufficientemente sensibilizzata da uno spessore adeguato. Questo perché sia consentito d'influire sulle vibrazioni dell'ancia — variando il modo di vibrare — con l'uso di più maniere d'imboccatura e d'insufflazione. In altre parole lo spessore della canna dovrà essere graduato tanto omogeneamente da non riscontrare zone dell'ancia non adeguatamente sensibilizzate per eccedenza o mancanza di spessore. In caso contrario il variare la pressione delle labbra e la posizione dell'imboccatura potrebbero provocare interruzioni dannose alle vibrazioni dell'ancia stessa.

L'efficienza dell'ancia sarà collaudata quando sia possibile eseguire agevolmente le seguenti combinazioni:

If the various lip positions are to be used with the various sections of the reed, it is obvious that the reed should be thinned down and polished carefully so that each section is just the right thickness. This thickness should be such that it is possible to make the reed vibrate in different ways by varying the embouchure and blowing methods. In other words, the reed thickness should be graduated evenly so that there are no portions which are insensitive through being too thick or too thin. If this were so, variations in lip position and pressure could cause interruptions in the reed vibrations.

The reed is in perfect condition when it is possible to play the following succession of sounds with ease:

DITEGGIATURE

Il numero delle diteggiature utilizzabili è teoricamente enorme, perché è il risultato di tutte le possibili combinazioni dei 6 fori centrali (considerando la chiave di sol come sesto foro) moltiplicate per tutte le possibili combinazioni delle 24 chiavi cromatiche. Per avere una idea di tale quantità basterà pensare che ciascun suono della estensione quartoriale è realizzabile con un numero più o meno notevole di differenti diteggiature che oscilla da un minimo di 2 per il Do \flat grave fino a un massimo di 90 ca. per il La \sharp 3^a ottava. È evidente che — pur escludendo dal conteggio tutte quelle diteggiature che per similitudine di effetto di alcune chiavi rispetto ad altre darebbero lo stesso risultato — rimarrebbe comunque un numero talmente elevato di diteggiature da scorgiarne lo studio. Ecco perché in questo metodo si è ritenuto di doverci limitare a un massimo di dieci diteggiature per ciascun suono, per un totale di 574, numero che è sempre rilevante in rapporto alle poche decine di diteggiature normalmente usate, ma che non dovrà preoccupare lo strumentista qualora proceda gradualmente e con chiarezza di intenti nello studio.

Le diteggiature sono di tre specie: *Omofo*, con possibilità esclusivamente omofona; *Polifona*, con possibilità omofona-polifona; *Aleatorie*, con possibilità di risultati in una quantità non prevedibile.

L'assieme delle diteggiature è riunito in una tavola generale (pag. 14) nella quale le tre specie sono distinte in: diteggiature omofone (nessun simbolo) diteggiature polifone (+) e diteggiature aleatorie (Al.).

FINGERINGS

In theory, the number of fingerings which are available is enormous, because it is the result of all possible combinations of fingerings of the 6 main fingerholes multiplied by the number of all possible combinations of the 18 or more chromatic keys. Some idea of the vast number of available fingerings can be gained from the fact that each note of the quarter-tone scale can be played by a notable number of different fingerings, which can vary from a minimum of three for the low D \flat to a maximum of about 90 for the A natural in the third octave. It is evident that even if we were to exclude all those fingerings which do not give a notably different sound from others, there is still such a vast number of fingerings available that the study of their totality is hardly possible. This is why in this Method, a limit has been set of only a maximum of ten different fingerings for each sound, giving a total of 574. Even this is a large figure compared with the small number in normal use. But the player need not be discouraged by such figures if he goes about his studies methodically and gradually.

Fingerings are of three kinds: monophonic, producing only single sounds; multiphonic, producing both single and multiple sounds; aleatory, producing a variety of sound results of unpredictable quantity.

The complete set of fingerings will be combined in a general table (p. 14) where the three types are indicated as follows: monophonic fingerings (no symbol); multiphonic fingerings (+) and aleatory fingerings (Al.).

IMBOCCATURA

Data la minore necessità d'uso di alcune posizioni d'im-
boccatura rispetto ad altre, distingueremo le posizioni delle
labbra sulla paletta dell'ancia in principali e secondarie.

Posizioni principali:

normale superiore inferiore



Posizioni secondarie:



— premere la paletta dell'ancia sul labbro
inferiore, mantenendo leggero quello su-
periore;



— premere la paletta dell'ancia sul labbro
superiore, mantenendo leggero quello infe-
riore;

D — con i denti

**MANIERE D'USO DELLE LABBRA
PER GRADUARE LA LORO PRESSIONE:**

- — Allargando
- ◐ — Poco allargando
- ◑ — Molto allargando
- — Stringendo
- ◒ — Poco stringendo
- ◓ — Molto stringendo

**MANIERE D'USO DELL'INSUFFLAZIONE
PER GRADUARE LA PRESSIONE DELL'ARIA**

- Pr.N — Pressione normale dell'aria
- M.Pr. — Molta pressione
- P.Pr. — Poca pressione
- A.Pr. — Aumentare la pressione
- D.Pr. — Diminuire la pressione

EMBOUCHURE

As some lip positions are used less than others, these
will be divided into « principal » and « secondary » posi-
tions:

Principal positions:

normal upper lower



Secondary positions:



— press the reed on the lower lip keeping a
light pressure with the upper;



— press the reed on the upper lip keeping a
light pressure with the lower;

D — with dental

LIP PRESSURES

- — Relaxed lip pressure
- ◐ — Slightly relaxed lip pressure
- ◑ — Very relaxed lip pressure
- — Increased lip pressure
- ◒ — Slightly increased lip pressure
- ◓ — Much increased lip pressure

AIR PRESSURES

- Pr. N. — Normal air pressure
- M. Pr. — Much pressure
- P. Pr. — Little pressure
- A. Pr. — Increase pressure
- D. Pr. — Diminish pressure

USO CONTROLLATO DEL VIBRATO

Suono fermo (come nel pronunciare la lettera A senza interruzione)

Vibrato lento (come nel pronunciare la lettera A ripetuta lentamente)

Vibrato normale

Vibrati progressivi (come nel pronunciare la lettera A accelerando o rallentando progressivamente la ripetizione)

Vibratissimo (come nel pronunciare la lettera A ripetendola il più rapidamente possibile).

SEMI-OSCILLAZIONI E OSCILLAZIONI

Questi termini non sono usati in senso strettamente scientifico, ma strumentale. Pertanto le indicazioni



si riferiscono a semi-oscillazioni e oscillazioni del suono prodotte dal relativo oscillare delle labbra nell'ambito d'altezza di un quarto di tono.



Semi-oscillazioni inferiori e superiori



Oscillazioni inferiori e superiori



TIMBRI DIVERSI DI UNO STESSO SUONO

Sebbene sia possibile produrre una grande varietà di timbri per ciascun suono, in molti casi la quasi eccessiva abbondanza dei colori timbrici impedisce una adeguata definizione descrittiva di ciascuno di essi. Quindi, nel classificare i timbri del suono singolo *determinati da allieggiatura*, ci siamo dovuti limitare a considerare quelli di colore timbrico più sensibilmente diverso. Pertanto le otto definizioni, che diamo qui sotto, devono ritenersi descrittive di quei timbri che hanno più spiccata caratteristica.

Aperto (Ap.), Chiuso (Cs.), Chiaro (Cr.), Scuro (Sc.),

Aperto-Chiaro (Ap.-Cr.), Aperto-Scuro (Ap.-Sc.), Chiuso-

Chiaro (Cs.-Cr.), Chiuso-Scuro (Cs.-Sc.),

CONTROLLED USE OF VIBRATO

Non vibrato (played as pronouncing the letter «A» in «bat»)

Slow vibrato (played as pronouncing «A» repeatedly at slow speed)

Normal vibrato

Progressive vibrato (played as pronouncing «A» repeatedly, progressively speeding up and slowing down).

«Vibratissimo» (played repeating «A» as rapidly as possible).

OSCILLATIONS AND HALF-OSCILLATIONS

These terms are used in an instrumental sense rather than with a strictly scientific meaning. Thus the indications



refer to half-oscillations and oscillations of sounds (produced by lip movements) of about a quarter-tone above and below mean pitch.



half-oscillations above and below mean pitch



oscillations above and below mean pitch



DIFFERENT TIMBRES OF THE SAME NOTE

Though the same note can be sounded with a variety of tone colours, in many cases the almost excessive number of timbres prevents an adequate descriptive definition of each of them. So in classifying the timbres of single sounds produced by special fingerings it has been necessary to limit consideration only to those with most distinctive characteristics. The following eight descriptive terms which follow are therefore applied to the colours which are most distinctive.

Open (Ap.), closed (Cs.), light (Cr.), dark (Sc.), open-

light (Ap.-Cr.), open-dark (Ap.-Sc.), closed-light (Cs.-Cr.),

closed-dark (Cs.-Sc.).

La classificazione timbrica del suono singolo è compresa nella tavola generale delle diteggiature.

Mentre ci riserviamo di fornire ulteriori indicazioni esecutive peculiari ad alcune possibilità tecniche, desideriamo richiamare l'attenzione su alcune osservazioni riguardo alla estrema importanza di disporre appropriatamente delle varie maniere d'uso dei mezzi esecutivi sopra elencate.

Osserveremo in primo luogo che, mentre nella tecnica tradizionale i mezzi esecutivi sono usati come coefficienti di un risultato — l'emissione di un suono singolo — e quindi azionati in modo sincrono, nel caso della tecnica in studio i tre coefficienti stessi sono azionati anche in modo indipendente tra loro, cioè usati in funzione di più risultati omofoni-poli-foni. Come nei casi in cui, per esempio, si passa dall'emissione di un suono singolo a quella di un accordo e viceversa, senza cambiare la diteggiatura iniziale, la quale rimane fissa per il complesso dei risultati ottenuti col solo variare della posizione d'imboccatura o della maniera d'insufflazione. È pertanto indispensabile che lo strumentista ponga la massima cura nell'acquisire progressivamente l'abilità di usare i mezzi esecutivi con indipendenza di azionamento.

Durante lo studio sono da prevenire possibili differenze tra indicazioni esecutive e relativo risultato sonoro scritto; specialmente in certi accordi, ad esempio. Eventualità, questa, del tutto inevitabile anche con la più accurata indicazione esecutiva. Infatti, perché così non fosse e quindi le indicazioni stesse fossero valide al cento per cento per ogni strumentista, si dovrebbe verificare l'assurdo che tutti gli strumentisti disponessero di identiche qualità fisiche e strumentali.

Ecco che rimane compito individuale il correggere quelle differenze che per tale motivo possono verificarsi tra le indicazioni e il risultato scritto. Correzioni del resto assai facili, dato che generalmente si tratta di modificare leggermente la posizione dell'imboccatura e la quantità di pressione delle labbra o dell'aria, per realizzare correttamente il risultato scritto.

Escludiamo di contemplare modifiche alla diteggiatura se non in casi eccezionali.

Altro aspetto tecnico da porre in evidenza è l'intonazione dei quarti di tono che — come tutte le cose inconsuete — può apparire in un primo momento più ardua di quello che non sia in effetti. Si tratta di assuefarsi, in sostanza.

Nessuna difficoltà per quanto riguarda le successioni di quarti di tono in scala: il controllo della loro intonazione è del tutto identico a quello delle normali scale semitonal.

Riguardo all'intonazione di intervalli distanziati per quarti di tono, si tratta semplicemente di abituare l'orecchio ad intonarli acquistando il « gusto » dell'intervallo. Bisogna cioè giungere a quella sensibilità che si ha nell'intonare l'intervallo per l'intervallo, senza usare quegli accorgimenti che possono far contemplare l'appartenenza di esso (intervallo) a una data tonalità specialmente quando si tratti di una sensibile, modale o tonale che sia. Ecco che potremo liberarci di tutti i luoghi comuni che così impropriamente considerano la nota alterata di un quarto di tono un qualcosa che deve essere « un po' crescente » oppure « un po' calante » rispetto all'intonazione del semitono. Questi termini del tutto vaghi impediscono di considerare che gli intervalli per quarti di tono non differiscono in niente da quelli per semitono, anche se non è convenuto ancora come chiamarli. Tuttavia abbiamo una notazione per indicare le alterazioni per quarto di tono — quella di Vincenzo Baglioni da noi adottata; quindi in mancanza di una terminologia ad hoc, possiamo intenderci chiamando gli intervalli per quarti di tono come i comuni intervalli seguiti dalle relative alterazioni. Per esempio: sesta maggiore alterata di un quarto di tono in più, quinta diminuita alterata di un quarto di tono in meno, ecc.

The classification of timbres of single sounds is included in the general table of fingerings.

While keeping back the discussion of certain other special performing techniques till later, at this point a few observations must be made regarding the use of the means of performance already discussed. First of all, it must be observed that as traditional performing techniques aim at only one result - the emission of single sounds - they are synchronized into a single action, but in the case of our present study, the three principal performing means (fingerings, embouchure and air pressure) are each used independently so as to obtain numerous mono- and multiphonic results. For example, while a certain fingering remains unchanged, it is possible to pass from a single sound to a chord and back again by varying only the embouchure or air pressure. It is therefore most important that players take care to acquire the ability to use or vary each performing means separately and independently.

It will be found that in some cases the fingerings and other performing indications given do not produce the exact sound result which is given, especially with regard to certain chords. This is unavoidable even when the most accurate details of playing techniques are given. The reason is, of course, that no two instruments are exactly alike, and no two players have the same physical and performing characteristics.

So whenever there is a difference between the notation given and the sound result, the player should find his own way of correcting this, usually by a simple modification of embouchure or air pressure.

Fingerings do not need alteration except in special circumstances.

Another technical feature which needs discussion is the intonation of quarter-tones, which at first may seem more difficult than it really is. It is really a question of familiarity with these intervals. There is no difficulty with regard to quarter-tones in scale formation. The control of their intonation is just the same as with the notes of the semitone scale. With regard to larger intervals comprising quarter-tones, it is really a matter of getting the ear accustomed to the right intonation by acquiring a taste for such intervals. It is necessary to add to that sensibility for intervals which we already possess, without using tonal associations, especially where leading notes are concerned. We must liberate ourselves too from considering intervals comprising quarter-tones as being merely intervals which are just 'a bit sharp' or 'a bit flat'. Such vague terminology prevents us from realizing that intervals comprising quarter-tones exist in their own right just as those comprising semitones, even though we still have to use the old terminology to describe them. There is a notation to indicate quarter-tone alterations — that of Vincenzo Baglioni — which is used in this Method; and in the absence of any authentic terminology, intervals comprising quarter-tones are defined by using normal interval terms, followed by the quarter-tone alterations. For example: major sixth increased by a quarter-tone; diminished fifth decreased by a quarter-tone, etc.

Per quanto riguarda l'intonazione degli accordi è evidente che — trattandosi di gruppi di suoni ottenuti sfruttando la possibilità di generare allo stesso tempo più frequenze di vibrazione nella stessa colonna d'aria dello strumento — non è possibile controllare singolarmente l'intonazione di ciascun suono di un accordo, ma il complesso dell'accordo stesso. È importante osservare inoltre che gli accordi possono comprendere suoni di diversa specie: fondamentali apparenti, armonici artificiali, suoni differenziali, ecc.

In sostanza si tratta di controllare l'intonazione di gruppi di suoni risultanti dall'aggregare in accordo uno o due fondamentali apparenti e relativi armonici, pertanto si dovrà mirare a centrare l'intero agglomerato armonico usando adeguatamente i due coefficienti adatti a modificarne l'intonazione: cioè l'imboccatura e l'insufflazione.

Per concludere su questo argomento diremo che si dovrà esercitare l'orecchio ad ascoltare sia accordi di varia specie che musica con quarti di tono, per giungere a trovare naturale quello che in un primo momento potrà apparire eccezionale.

Le alterazioni dei quarti di tono ascendenti e discendenti, saranno indicate come segue:

‡	Monesis	primo quarto di tono ascendente
##	Diesis	semitono ascendente
###	Triasis	terzo quarto di tono ascendente
♮	Mobemol	primo quarto di tono discendente
♭	Bemolle	semitono discendente
♭♭	Tribemol	terzo quarto di tono discendente

Per dar modo allo studente di seguire uno studio tecnico e musicale il più possibile scaltrito, si è ritenuto vantaggioso organizzare alcuni esercizi in forma schematica. Perciò il materiale tecnico di questi esercizi (le note e le indicazioni esecutive) è stato corredato successivamente di uno schema ritmico quale suggerimento per la loro organizzazione musicale.

Nella guida allo studio delle possibilità omofone (pag. 8) e nella guida allo studio delle possibilità polifone (pag. 11) sono fornite, per ogni esercizio, delle spiegazioni tecniche sui nuovi procedimenti esecutivi e su come realizzare gli schemi ritmici.

As for the intonation of chords, it is evident that it is not possible to control the intonation of the individual sounds in each chord, but only that of the whole group of notes. It is also important to observe that chords can comprise sounds of different kinds: apparent fundamentals; artificial harmonics, differential tones, etc. In effect, it is a matter of controlling the intonation of the entire combination of sounds resulting from the joining together into one chord of one or two apparent fundamentals and their relative harmonics. The pitch of such harmonic groupings must be « centered » by using the two means which control intonation — embouchure and air pressure.

In conclusion, the ear must be attuned to the pitch regulation of both chords of various kinds and to music in quarter-tones, so that eventually that which at first seems exceptional may become quite natural.

Alteration by upper and lower quarter-tones will be indicated as follows:

‡	One quarter-tone sharp
##	Two quarter-tones sharp = semitone sharp
###	Three quarter-tones sharp
♮	One quarter-tone flat
♭	Two quarter-tones flat = semitone flat
♭♭	Three quarter-tones flat

So as to facilitate technical and musical studies, it has been thought best to organize certain exercises in a schematic form. The technical matter of these exercises (the notes and performing means) has been followed by rhythmic schemes which can be used to make up their complete musical organization.

In the guide to the study of monophonic possibilities (p. 8) and also in that for multiphonic effects (p. 11) there has been included, for each exercise, technical explanations of the new performing procedures and how to play the rhythmic schemes.

GUIDA ALLO STUDIO DELLE POSSIBILITA' OMOFONE

- 1) *Scala quartiloneale (scala modello).*
- 2) *Scala semitonale alterata di un quarto di tono (scala modello).*

Le diteggiature di queste due scale saranno usate quali diteggiature fisse della musica con quarti di tono. Pertanto non è stata apposta alcuna diteggiatura agli esercizi relativi al suonare omogeneo, restando intesi che bisogna usare quelle delle due scale modello.

È di fondamentale importanza impadronirsi del meccanismo di tali diteggiature prima ancora di passare allo studio degli esercizi stessi.

- 3) *Arpeggi alterati di un quarto di tono.*
- 4) *Arpeggi per quarti di tono.*

Schema ritmico

Questi esercizi vanno studiati molto lentamente all'inizio. L'aumento della velocità di esecuzione avverrà automaticamente con l'applicazione graduale delle combinazioni ritmiche indicate nello schema. È importante pausare alla fine di ogni arpeggio e non prima.

- 5) *Intervalli alterati di un quarto di tono.*
- 6) *Intervalli per quarti di tono.*

Schema ritmico

Come dagli esempi che seguono lo schema ritmico, questi esercizi si realizzano applicando alle note le numerazioni dei quattro valori (A B C D) abbinata alle combinazioni del numero 4.

Non è tanto necessario eseguire gli esercizi velocemente, quanto invece suonare ogni frammento come una frase espressiva, variando il tempo e il segno dinamico secondo il suggerimento musicale.

7) Tremoli.

Qui vengono usate diteggiature di particolare agilità di meccanismo, da considerare quale alternativa alle diteggiature fisse: in particolare nei casi in cui si incontrino eventuali difficoltà nell'esecuzione di passaggi veloci.

La velocità di esecuzione dei tremoli e l'applicazione del segno dinamico sono lasciate alla iniziativa individuale.

8) Serie di 24 suoni.

Questo esercizio è dato per abituarsi a diteggiare una serie di 24 suoni usando anche, qualora ragioni tecniche lo richiedano, alcune alternative di diteggiatura. Noi abbiamo a disposizione delle diteggiature fisse, ma non inamovibili; sta allo strumentista il giudicare quando egli debba ricorrere alla tavola generale per supplire alle necessità del momento.

In questo caso si tratta di completare la diteggiatura della quadrinità seriale da noi iniziata.

È evidente che la quadrinità seriale (T, J, K, X) verrà diteggiata con due soli gruppi di diteggiature. Infatti — avendo noi diteggiato la serie principale T e di conseguenza il suo retrogrado K, basterà diteggiare J (rovescio di T) per avere diteggiato anche X (retrogrado di J) e quindi completato la quadrinità.

È ovvio che ciò è valido per qualsiasi numero di suoni componenti una serie, che non è detto debba essere necessariamente di 24. Come d'altro lato, niente obbliga ad usare sempre gli stessi timbri in una composizione seriale: anzi! Sarà lo strumentista che dovrà scegliere di volta in volta le diteggiature in relazione al risultato timbrico voluto. Ecco perché ci è parso indispensabile intradare l'esecutore verso una metodologia che lo abitui fin da principio ad agire con autonomia di giudizio. Il proseguo dello studio renderà sempre più evidente questa necessità.

GUIDE TO THE STUDY OF MONOPHONIC POSSIBILITIES

- 1) Quarter-tone scale (model scale)
- 2) Semitone scale altered by quarter-tones (model scale)

The above fingerings will be used as standard in quarter-tone music. No fingerings are included in the monophonic exercises which follow; it must be understood that those in the above two model scales are to be used.

It is essential that a good command of these fingerings be obtained before going on to study the exercises.

- 3) Arpeggios altered by quarter-tones
- 4) Arpeggios using quarter-tones

Rhythmic scheme

These exercises should be studied very slowly at first. Performance will be speeded up automatically with the gradual application of the rhythmic combinations indicated in the scheme. It is important to pause at the end of each arpeggio and not before.

- 5) Intervals altered by quarter-tones
- 6) Intervals using quarter-tones

Rhythmic scheme

As in the examples which follow the rhythmic scheme, these exercises are performed by applying the different notations ABCD to the notes, coupled with various orderings of the numbers 1 to 4.

It is not as necessary to play the exercises quickly, as to play each fragment as an expressive phrase, varying the speed and dynamics as the music suggests.

7) Tremolos.

Here, fingerings are used which, because of their ease of execution, are particularly apt for certain rapid passages, and can be used as substitutes for standard fingerings.

The speed of playing tremolos and the dynamics are left to the player's own initiative.

8) Series of 24 sounds.

This exercise is given so that players may become accustomed to fingering series of 24 sounds, using alternative fingerings when technical reasons make these necessary. Alternative fingerings are available and the player can refer to the general table of fingerings whenever these need to be used.

Fingerings for two of the four forms of the series (T, J, K, X) are given, and the player should complete the remainder. Only two sets of fingerings are needed in all. In fact, as fingerings are already given for the principal series T, and these are used for its retrograde K, it is sufficient to find fingerings for J (inversion of T) to discover those also of X (retrograde of J) and so complete all four serial forms.

Obviously, this is valid for any number of sounds in a series, which does not necessarily need to comprise 24. There is also no need to use always the same tone colours in a serial composition. On the contrary! The performer is free to choose whatever fingerings are most suitable for the tone colours he requires. This is why it has been necessary from the outset to accustom each player to use his own judgement. As our studies proceed, this need of individual initiative will become more apparent.

8 bis) Serie di 7 suoni.

Permutazioni.

Questo esercizio si completa realizzando le rimanenti combinazioni delle due permutazioni della serie, come da esempi dati. E cioè: permutazione A, si sposta di volta in volta l'inizio della serie di un suono (2 3 4 5 6 7 1 — 3 4 5 6 7 1 2 — ecc.); permutazione B, si inizia sempre dal primo suono della serie e saltando progressivamente di uno, due, tre e quattro suoni, si completa di nuovo l'intera serie (1 3 5 7 2 4 6 — 1 4 7 3 6 2 5 — ecc.).

Si otterranno così diverse articolazioni ritmiche di una stessa quantità di note, il cui studio farà acquisire — oltre alla padronanza del meccanismo delle diteggiature — la giusta intonazione di determinati intervalli quartonali. E' necessario variare il segno dinamico e l'andamento del tempo a seconda del suggerimento delle varie frasi.

9) Timbri diversi di uno stesso suono ottenuti da diteggiatura.

Le risorse timbriche del fagotto sono sufficientemente ricche da permettere di selezionare una dozzina di timbri caratteristici di stessa altezza, con i quali formare successioni di stessi suoni con timbri sensibilmente diversi. E questo, come è dimostrato nella tavola generale, è possibile ottenerlo per la maggior parte dei suoni dell'estensione quartonale. Quando si consideri inoltre che — per mezzo di accorgimenti tecnici che tratteremo più avanti — è possibile trasformare il colore timbrico del suono nel più raffinato dei modi, risulterà evidente quanto sia ricco il vocabolario timbrico di cui possiamo disporre. Tanto ricco da permetterci di realizzare quella che Schoenberg stesso chiama « una fantasia avveniristica » (1): cioè, una melodia di timbri della stessa altezza, prodotta da un singolo strumento. (2) Melodia che si realizza usando diteggiature adatte a determinare uno stesso suono con timbri sensibilmente diversi, e usando inoltre varie maniere di « trattare » il suono — per mezzo dell'uso controllato della labbra — per affinare la sua coloritura timbrica.

L'importanza di tali acquisizioni tecniche è notevolissima; e non staremo quindi a raccomandare particolare cura per lo studio di questo esercizio — come del seguente — tanto che non sembra chiara l'utilità a vantaggio di una raffinatezza del gusto timbrico del suono.

Per chi volesse realizzare in proprio altri esercizi, suggeriamo di abbinare alla scelta timbrica un meccanismo di diteggiature di agevole azionamento.



10) TRATTAMENTO DEL SUONO PER MEZZO DELL'USO CONTROLLATO DELLE LABBRA

Vibrati. Semi-oscillazioni e oscillazioni. Suono smorzato.

Vibrati:

Per ottenere un controllo efficace delle labbra, è necessario esercitarsi inizialmente a mantenere l'emissione di un suono lungo il più uniforme possibile (suono fermo). Si applicheranno in seguito le varie maniere di vibrare delle labbra, già specificate nell'introduzione. E' chiaro che non si tratta di studiare un vibrato espressivo « standard », bensì di studiare come « trattare » il suono — attraverso l'uso controllato delle labbra — determinando l'andamento delle sue vibrazioni nel modo graficamente indicato. Indicazioni che verranno naturalmente apposte soltanto quando si desidera un tale trattamento del suono.

8b) Series of 7 sounds.

Permutations.

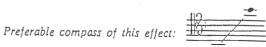
In this exercise the remaining combinations of the two permutations of the series are completed as shown in the example. That is: in permutation A, the beginning of the series is displaced progressively, beginning with the second tone, then the third, and so on (2 3 4 5 6 7 1 - 3 4 5 6 7 1 2 - etc.). Permutation B always begins with the first note and then new series are formed by leaping over first one, then two, three and four sounds (1 3 5 7 2 4 6 - 1 4 7 3 6 2 5 - etc.).

It is thus possible to obtain different rhythmic designs from the same quantity of notes. This study will serve not only to enable players to master fingerings, but to give them accurate pitch judgement in quarter-tones. Dynamics and the speed of the music should be varied according to the expression each phrase suggests.

9) Different timbres of the same sound obtained by fingering.

The timbre resources of the bassoon are so rich that it is possible to obtain a dozen different tone colours for each note, each colour being quite different and with a character all its own. As will be seen from the general table of fingerings, this is possible on most sounds of the quarter-tone scale. In addition, as it is possible to transform the colour of each sound during emission in very refined ways (the technique for this will be discussed later), it becomes evident that in all, a very rich colouristic vocabulary is at our disposal. So rich in fact, that we can accomplish what Schoenberg himself called « a futuristic fantasy » (1). That is: a melody of timbres of the same pitch, produced by a single instrument (2), a melody obtained by using different fingerings suitable for producing different timbres of the same sound, and in addition using various ways of moulding or transforming sounds (by controlled embouchures) to refine the colouristic effects.

The importance of these technical achievements is considerable, and the assiduous study of this and the following exercise cannot be over-recommended. The use and advantages of a refined colouristic taste is obvious. For those who wish to make up other exercises for themselves, it is suggested that the choice of different tone colours should be obtained through fingerings which are not too complicated.



10) EFFECTS PRODUCED BY LIP CONTROL

Vibrato, oscillations and half-oscillations, the « smorzato » sound.

Vibrato.

To obtain good lip control, it is necessary to practise at first the emission of long sounds which are as uniform as possible (non vibrato). After this is accomplished, other lip vibrations are used which are already specified in the introduction. This does not mean the simple use of a « standard » expressive vibrato, but a special study of the moulding of sounds through a controlled use of the lips, producing the various vibrato as graphically represented. Such graphic indications are naturally only used when some special effect is desired.

(1) A. Schoenberg: « Manuale di armonia » - Ed. Il Saggiatore - Milano, pag. 152.

(2) R. Bartolozzi: « Concettazioni per oboe e alcuni strumenti » - Ed. Novati Zerlini, pagg. 12 - 13 - 14.

(1) A. Schoenberg: Harmonielehre (Vienna, 1911).

(2) R. Bartolozzi: Concettazioni per oboe e alcuni strumenti, Ed. Savini Zerlini, pagg. 12 - 13 - 14.

Semi-oscillazioni e oscillazioni.

Anche in questo caso è preferibile iniziare lo studio dall'emissione del suono fermo, per poi realizzare l'andamento delle oscillazioni — inferiori e superiori — quasi ridisegnando il grafico con movimento continuo e uniforme delle labbra. Durante l'azione esecutiva si tenga ben presente che è un suono fermo che sta oscillando nell'ambito d'altezza di un quarto di tono, e che pertanto qualsiasi accento di vibrato può distruggere questo effetto.

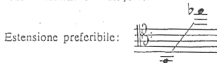
Combinazioni di vibrati e oscillazioni.

Per distinguere le due maniere esecutive si è preferito scrivere le indicazioni del vibrato al disotto del pentagramma, e le indicazioni delle oscillazioni al lato destro della nota.

Suono smorzato.

È questa una maniera di suonare (da non confondere con il comune staccato) che consiste nello « smorzare » il suono — all'inizio della sua durata, o nel suo corso — con piccoli movimenti delle labbra sull'ancia simili ad altrettanti piccoli vibrati controllati però dalla mascella e non dal diaframma come per il normale vibrato.

Si raccomanda di porre la massima attenzione nel non far combaciare l'ancia a causa dell'eccessiva pressione delle labbra, il che procurerebbe inevitabili interruzioni del suono. Per questa ragione è consigliabile di contenere l'intensità nel limite di un forte.

**1) EFFETTI SPECIALI**

Portamento, Acciacatura-portamento (di labbro).

Acciacatura-portamento (da diteggiatura). Chiave pedale.

Glissando, inferiore e superiore.

Portamento, inferiore e superiore.

Si esegue passando dalla posizione normale delle labbra a quella successiva, inferiore o superiore, senza interrompere l'emissione.

Acciacatura-portamento, inferiore e superiore (di labbro).

Si esegue passando velocemente dalla posizione normale delle labbra a quella inferiore o superiore, al momento di cominciare il successivo portamento. Si ottiene così di acciacare la nota iniziale con portamento al successivo armonico.

Acciacatura-portamento, inferiore e superiore (da diteggiatura).

Si esegue apponendo una seconda diteggiatura — adatta ad emettere la nota iniziale — al momento di cominciare il successivo portamento. Questo effetto, simile al precedente, si ottiene per un particolare impiego della diteggiatura e non del labbro.

Chiave pedale.

È questa una maniera esecutiva per colorire timbricamente una frase, laddove l'ingranaggio delle diteggiature permette di azionare — come nel trillare — forti e chiavi, non impegnati durante l'esecuzione della frase stessa. Si otterrà così non un vero e proprio trillo fra suono e suono, ma un continuo « trillamento » dei suoni — in funzione di pedale — che aggiunge un particolare colore timbrico all'intera frase.

Oscillazioni and half-oscillations.

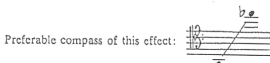
Here also it is preferable to begin studies with the emission of long sounds of uniform pitch, later moving to lip oscillations which produce fluctuations of intonation above and below mean true pitch, almost following the graphic design with a continuous and uniform lip movement. The sounds, it must be remembered, should represent a non-vibrato note with quarter-tone oscillations, and therefore any suggestion of normal vibrato will destroy this effect.

Combinations of vibratos and oscillations.

To distinguish between these two effects it has been thought best to write vibrato indications below the staff, and oscillations to the right of notes.

The « smorzato » sound.

The « smorzato » (not to be confused with the more common staccato) is obtained by squeezing the reed with light movements of the lips produced by moving the jaw. The smorzato is really a kind of vibrato, but instead of pitch fluctuations (as with vibrato), the smorzato consists of fluctuations in volume produced by the jaw and not by the diaphragm. It is important not to use too much lip pressure or the reeds will close, thus interrupting sounds. For this reason, this effect must not be used beyond the normal forte.

**1) SPECIAL EFFECTS**

Portamentos, Acciacatura-portamento (with the lips).

Acciacatura-portamento (by fingerings). Pedal key.

Glissandos, upwards and downwards.

Portamento, upwards and downwards.

This is played by passing from the normal lip position to a higher or lower one without interrupting the sound.

Acciacatura-portamento, above and below (with the lips).

This is performed by passing quickly from the normal lip position to an upper or lower one at the moment the portamento is begun, thus squeezing in the initial note, followed immediately by a portamento to the next one.

Acciacatura-portamento, above and below (by fingering).

This is played by sounding an initial note briefly with normal fingering as the portamento begins. This effect, similar to that previously described, is obtained by a particular kind of fingering and not with the lips.

Pedal Key.

This is a way of colouring a phrase in situations where holes or keys can be trilled which are not used in the playing of the actual phrase. Thus, real trills between one sound and another are not obtained, but a continuous « trilling » of sounds (like a « pedal » sound) which adds a particular timbre to the whole phrase.

TAVOLA DEGLI ACCORDI OMOGENEI E CON DIFFERENTE TIMBRO

Le diteggiature degli accordi compresi in questa tavola — scelte fra numerosissime — sono usate per tutti gli esercizi polifoni per dar modo di studiare il meccanismo tecnico che permette di ottenere più risultati da una stessa diteggiatura. Pertanto si raccomanda di studiare singolarmente ciascun accordo delle due specie — omogenei e con differente timbro — in modo da affrontare lo studio degli esercizi veri e propri con la dovuta preparazione.

GUIDA ALLO STUDIO DELLE POSSIBILITA' POLIFONE

1) Accordi omogenei.

L'esecuzione di accordi omogenei — composti da un fondamentale e relativi armonici — non presenta particolare difficoltà se non quando sia necessario un uso dei mezzi esecutivi diverso dal normale.

Per ottenere la corretta esecuzione di un accordo si procuri di centrare l'emissione nel suo assieme affinché i suoni risultino bene equilibrati nel loro rapporto di volume. Quando ciò non si verificasse e alcuni suoni dell'accordo — quelli estremi specialmente — risultassero più deboli del loro effettivo volume, si perfezioni l'esecuzione distribuendo l'insufflazione in modo da rafforzarli convenientemente.

Il materiale sonoro di questo esercizio è costituito da tre successioni di 4 accordi ciascuna; siccome la sua organizzazione è simile a quella precedentemente usata per gli esercizi degli intervalli, risulterà chiaro come realizzare lo schema ritmico proseguendo la traccia indicata dagli esempi. Si tenga presente comunque, che non tutte le combinazioni armoniche possono risultare accettabili; si sceglieranno quindi, per il proseguimento dello studio, quelle combinazioni dello schema ritmico che risulteranno di miglior andamento armonico e tecnico.

2) Accordi con differente timbro.

Per l'esecuzione di accordi con differente timbro — composti da due suoni ravvicinati e suoni ad essi relativi — si dovrà centrare l'intonazione dei due suoni più ravvicinati (il suono rotto (1) e il suono più vicino) perché dalla loro giusta intonazione dipende quella degli altri suoni che completano l'accordo: armonici, suoni differenziali anche al disotto dell'estensione dello strumento, ecc.

Le due permutazioni della serie di 7 accordi, sono identiche a quelle usate per la serie di 7 suoni. Si procederà allo studio di questo esercizio realizzando — oltre a quelle degli esempi dati le rimanenti combinazioni delle permutazioni stesse.

Per rendere più interessante lo studio si è ritenuto vantaggioso includere nella serie le due specie di accordi.

Anche in questo caso, come nel precedente, si sceglieranno le migliori combinazioni delle due permutazioni.

3) Collegamenti fra suoni singoli e un accordo.

Per passare dall'emissione di un suono singolo a quella di un accordo — nelle varie maniere trattate — occorre applicare a una stessa diteggiatura posizioni diverse d'imboccatura con adeguata insufflazione. A differenza del consueto uso i tre coefficienti esecutivi vengono qui azionati indipendentemente fra loro. Infatti si passa dall'emissione del suono singolo all'emissione dell'accordo applicando una posizione dell'imboccatura diversa da quella iniziale e aumentando o diminuendo l'insufflazione, per poi passare dall'emissione dell'accordo a quella del suono più acuto con il semplice aumentare della pressione dell'aria. È chiaro che tutto questo rimane valido per l'operazione inversa.

(1) Questo suono — indicato con la nota quadrata — ha un timbro estremamente caratterizzato da forti « battimenti » causati dalla parziale interferenza delle sue vibrazioni, ed è pertanto chiamato con il termine di « suono rotto ».

TABLE OF HOMOGENEOUS CHORDS AND CHORDS COMPRISING SOUNDS OF DIFFERENT TIMBRE

The chord fingerings in this table (chosen from a large number of alternatives) are used for all multiphonic exercises so that the player can study the means by which various sound results can be obtained from the same fingerings. It is recommended therefore that each of the two kinds of chord (homogeneous chords and those comprising sounds of different timbre) should be studied individually, so that the study of the real exercises can be begun with an adequate preparation.

GUIDE TO THE STUDY OF MULTIPHONIC POSSIBILITIES

1) Homogeneous chords.

The playing of homogeneous chords (comprising a fundamental and its relative partial tones) presents little difficulty except when it is necessary to depart from normal performing means. To obtain the correct emission of a chord, care must be taken to equilibrate the volume of its component sounds. When some notes are weaker, especially the upper and lower ones, they must be strengthened by blowing in such a way that they are more pronounced.

The material of this exercise comprises three groups, each containing four chords. As its rhythmic organization is similar to that previously used for interval exercises, the realization of the rhythmic designs will be clear, following the pattern indicated in the examples. It must be observed, however, that not all harmonic combinations are acceptable. One must choose those combinations of the rhythmic scheme for study which produce the best harmonic and technical movement.

2) Chords comprising sounds of different timbre.

To play chords containing sounds of different timbre (comprising two sounds very close together and their relative partial tones) one should concentrate on the intonation of the two sounds which are closest together (the broken sound (1) and the sound which is nearest), because on their correct intonation depends that of the other sounds comprising the chord (harmonics, differential tones below the compass of the instrument, etc.).

The two permutations of the series of seven chords are the same as those used for the series of seven sounds. The study of this exercise is accomplished by realizing — as well as the given examples — the remaining combinations of the permutations.

To make this study more interesting, it has been thought best to include both kinds of chord in the series. As with the previous exercise, the best combinations of the two permutations should be chosen.

3) Linking single sounds to a chord.

To pass from a single sound to a chord, the fingering remains unchanged, but embouchure and air pressure are altered. Contrary to normal playing usage, the three performing means are here used independently of each other. In fact, one can pass from the emission of a single sound to that of a chord by changing embouchure and increasing or decreasing air pressure, passing then from the chord to its highest sound only by simply increasing the air pressure. Naturally, this is also true in reverse.

(1) The broken sound, indicated by a square note, is so called because its tone colour is strongly characterized by strong « beats » caused by partial interference of its vibrations, hence the « broken » effect.

Questo esercizio è quindi particolarmente adatto per abituarsi ad usare i mezzi esecutivi con indipendenza di azionamento; abilità che è poi indispensabile agli effetti dell'intera tecnica in studio.

4) EFFETTI SPECIALI

Accordi smorzati.

Si eseguono adottando lo stesso procedimento tecnico usato per smorzare il suono singolo. Tutti gli accordi in genere possono essere smorzati, fatta eccezione per alcuni accordi con suono rotto. Le linee verticali indicano la ripetizione dell'accordo smorzato.

Smorzamento di alcuni suoni di un accordo mentre altri suoni proseguono ininterrotti nella stessa emissione.

Si esegue mantenendo ininterrotta l'emissione dei suoni superiori dell'accordo e aumentando la pressione delle labbra e dell'aria, ogniqualvolta si desidera sovrapporre la emissione dei suoni inferiori dell'accordo stesso.

Trilli fra due accordi.

L'esecuzione di trilli fra due accordi è semplice. Basterà osservare come sia naturale porre in trillo due accordi fra loro con il semplice aprire o chiudere « trillando » fori o chiavi della diteggiatura del primo accordo — e come non sia arduo, sviluppando tale procedimento, realizzare successioni di trilli di questo tipo nel più variato segno dinamico — infine come sia del tutto spontaneo ottenere effetti sorprendenti di movimenti di parti come quelli, ad esempio, di alcuni suoni di due accordi posti in trillo che proseguono ininterrotti mentre altri suoni trillano fra loro. Pertanto questa possibilità tecnica è di sicura resa e si presta magnificamente ad ottenere effetti di grande virtuosismo.

Trillo fra due accordi combinati all'esecuzione contemporanea di altri suoni estranei agli accordi stessi.

L'azione esecutiva è simile a quella richiesta per i trilli fra due accordi, combinando in più l'azionamento del foro o della chiave del trillo con l'azionamento simultaneo di fori o chiavi non impegnati nelle due diteggiature. In tal modo, mentre la combinazione dei trilli prosegue ininterrotta, si può ottenere che altri suoni possano essere emessi contemporaneamente con il ritmo che si desidera imprimere. È chiaro che ciò si realizza solo quando l'ingranaggio di diteggiatura che viene a crearsi lo consente.

Glissando fra due accordi, inferiore.

Si esegue passando dalla posizione inferiore alla posizione superiore dell'ancia, allargando le labbra e aumentando la pressione dell'aria gradualmente. Questo tipo di glissando è particolarmente adatto per ottenere effetti non comuni di intensità sonora: è quindi preferibile usarlo nella dinamica del crescendo, non indicando l'accordo finale. Non sono ottenibili glissandi superiori, cioè partendo dal grave verso l'acuto.

This exercise is therefore particularly apt for acquiring that necessary ability to use performing means independently. This is of course indispensable in the use of techniques described here.

4) SPECIAL EFFECTS

« Smorzato » chords.

The chordal smorzato is produced in the same way as that for single sounds. All chords can be used with smorzato except for some comprising broken sounds. The thin vertical lines indicate repetitions of the smorzato chords.

The « smorzato » of several sounds in a chord, while other sounds of the same chord are sounded continuously.

This is performed by sounding the upper notes of a chord without interruption; increasing the lip and air pressures only when the lower sounds of the chord need to be added.

Trills between chords.

The performance of trills between two chords is quite easy. It is sufficient to open or close one or more finger and/or key holes rapidly and one can pass from one initial chord to another. It is not difficult to develop this technique and play trills between chords which sometimes have quite a contrasting volume. Surprising effects can be obtained. Sometimes one or more notes of one chord remain unaltered and sound continuously, while the other notes trill between themselves. This technique produces results of great effect and lends itself to virtuoso-sounding cascades of sound.

Trills between two chords combined with the performance of other sounds foreign to the chords.

Performance is similar to that used in chord trills except that in addition to the trill fingerings, one uses at the same time holes or keys not used in these latter. In this way, while the chord trills are played without interruption, other sounds can be superimposed momentarily with any desired rhythm. Naturally, this is only possible when fingerings permit.

Glissando downwards between two chords.

This is played by widening the lips and gradually increasing the air pressure, while at the same time moving the lips towards the tip of the reed. This means beginning with rather more reed than usual. This type of glissando is particularly suitable for obtaining effects of unusual sound intensity, so it is best to use them where crescendos are desired, and without indicating the final chord with precision. Upwards glissandos are not possible.

DITEGGIATURE ALEATORIE

A conclusione dello studio delle possibilità omofonopolifone del fagotto, indichiamo questo speciale tipo di diteggiature con le quali si possono ottenere risultati di imprevedibile natura e quindi inclassificabili. Da ogni diteggiatura aleatoria si producono diversi accordi, omogenei e con differente timbro; e inoltre vari suoni singoli realizzabili con i collegamenti precedentemente studiati. Tutto ciò si ottiene cambiando di volta in volta posizione dell'imboccatura e aumentando o diminuendo la pressione dell'aria, senza alterare la diteggiatura. Ecco perché tali diteggiature sono chiamate « aleatorie ».

Il fagotto, come tutti i legni, ha quindi qualità insolite, che bene si adattano allo spirito della concezione musicale « aleatoria ». Usando più di una di queste diteggiature noi abbiamo a disposizione una larga quantità di risultati sonori i quali possono essere ordinati in una concezione musicale non rigidamente organizzata.

Per rimanere quindi nello spirito di tale concezione musicale, diamo 3 diteggiature aleatorie sufficienti a realizzare un piccolo pezzo di musica, senza necessariamente specificare i risultati sonori che ne derivano.

Pertanto lo strumentista deve lavorare in proprio a seconda della sua conoscenza ed esperienza musicale perché in questo caso l'esperienza degli altri non può recare alcun vantaggio.

Sarà invece assai interessante, ad un certo momento, lavorare in collaborazione con un compositore.

Si rammenta che nel realizzare tale pezzo di musica l'esecutore deve usare anche tutti quegli effetti espressivi e coloristici precedentemente studiati.

Usare delle diteggiature aleatorie, senza che i risultati sonori siano organizzati in una sequenza espressiva, equivarrebbe a fare musica senza alcun significato ed interesse.

ALEATORY FINGERINGS





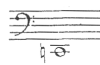





















To conclude the investigation of multiphonic fingerings and possibilities, particular mention must be made of one special type of fingering which produces results of such an unpredictable nature that they are by no means easy to classify. Any of these fingerings can produce various homogeneous chords and also chords containing different timbres. In addition, a number of different single sounds can be played to link the chords together. To play such passages, the player only needs to alter the air pressure while passing through the various reed positions, without altering the fingering. Aleatory fingerings give results which are as varied as they are unpredictable and because of the « chance » element in their use will appeal to some composers.











































The bassoon, like all woodwind, has an inherent quality which fits in unusually well with the spirit underlying the conception of aleatory music. Using more than one aleatory fingering, we have at our disposal a large quantity of sound results which cannot possibly be set in any specific order and therefore demand a musical conception which is not organized. To be consistent with the spirit of such music, we will therefore limit ourselves to providing three aleatory fingerings suitable for playing a short piece of music without notating any specific sound results. We will leave the realization of such results to the performer, for to indicate music in notation would not only be quite contrary to the purpose and use of these fingerings, but would be a negation of the spirit of aleatory music.

It must be remembered that in performing such a piece of music the player must also bring into use all those expressive and colouristic effects which we have already discussed. To use aleatory fingerings without moulding the results into expressive music can only produce results which have neither significance nor interest.

PARTE PRIMA
PART ONE

TAVOLA GENERALE DELLE DITEGGIATURE E CLASSIFICAZIONE TIMBRICA DEI SUONI
GENERAL TABLE OF FINGERINGS AND THE CLASSIFICATION OF TONE COLOURS

			
	Cr.		Cr.
			
	Cr.		Cs. Sc.
			
	Cr.	Ap. Cr.	Cs. Sc.
			
	Cr.	Cs. Sc.	<i>Per questa combinazione di diteggiatura e' necessario chiudere la chiave n. 12 con sughero o altro.</i>
			
	Cr.	Cs.	Cs. Sc.
			Ap.
			Sc.
			
	Ap. Sc.		Cs. Sc.
			
			Ap. Sc.

					
	<i>Cr.</i>		<i>Ap.</i>		<i>Ap. Cr.</i>
					
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	<i>Cr.</i>		<i>Ap.</i>		<i>Ap.</i>
					
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	<i>Cr.</i>		<i>Ap. Sc.</i>		<i>Cs. Sc.</i>
					
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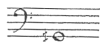


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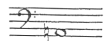


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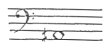
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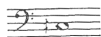
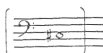
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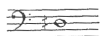
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Cs. Sc.

9 ●⁴
| 0 | 0 |
6 | 0 | 0 | 5
●
●
17
Ap.



12 ●⁴
| 0 | 0 |
0 | 0 | 19
Cr.

●⁴
| 0 | 0 |
0 | 0 | 19
Ap.

●⁴
| 0 | 0 | 13
0 | 0 | 19
Ap.

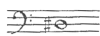
●⁴
| 0 | 0 | 14
0 | 0 | 19
Ap. Sc.

●⁴
| 0 | 0 |
0 | 0 | 19
17
Ap. Sc.



9 ●⁴
| 0 | 0 |
0 | 0 | 19
Ap. Cr.

10 ●⁴
9 | 0 | 0 |
0 | 0 | 19
Ap. Cr.



●⁴
| 0 | 0 |
0 | 0 |
Cr.

●⁴
| 0 | 20 B |
0 | 0 | 19
Ap.

●⁴
9 | 0 | 20 B |
0 | 0 | 19
Ap. Cr.

●⁴
| 0 | 20 B |
17
Sc.

●⁴
| 0 | 0 | 13
5 | 0 |
Ap. Sc.



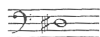
●⁴
| 0 | 13 |
●
●
Sc.

9 ●⁴
| 0 | 20 B |
5 | 0 | 0 |
17
Cs.

9 3 ●⁴
| 0 | 0 |
5 | 0 | 0 |
17
Ap. Sc.

9 3 ●⁴
| 0 | 0 |
5 | 0 | 0 |
17
Cr.

●⁴
| 0 | 0 | 14
●
●
Ap.



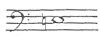
3 ●⁴
| 0 | 0 |
3 | 0 | 0 |
Cr.

●⁴
| 0 | 14 |
5 | 0 | 0 | 19
Ap.

●⁴
| 0 | 14 |
0 | 0 | 19
●
Ap. Cr.

3 ●⁴
| 0 | 20 B |
0 | 0 | 19
Ap.

●⁴
| 0 | 0 |
●
●
Sc.



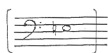
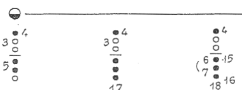



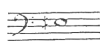





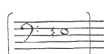





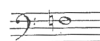




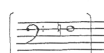



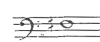





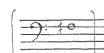


●⁴
| 0 | 0 |
0 | 0 | 0 |
Ap.

●⁴
| 0 | 0 |
0 | 0 | 0 |
Cr.

11 12 ●⁴
| 0 | 0 | 0 |
●
●
Cs.

12 ●⁴
| 0 | 0 |
0 | 0 | 0 |
Cs. Cr.

3 ●⁴
| 0 | 0 |
0 | 0 | 0 |
Cr.

					
	<i>Ap. Cr.</i>	<i>Cr.</i>	<i>Cs. Sc.</i>	<i>Cs. Cr.</i>	
					
	<i>Cr.</i>	<i>Ap. Cr.</i>	<i>Ap.</i>	<i>Ap.</i>	<i>Ap.</i>
					
	<i>Cr.</i>	<i>Cr.</i>	<i>Cs. Sc.</i>	<i>Ap. Sc.</i>	<i>Sc.</i>
					
	<i>Cr.</i>	<i>Cs. Cr.</i>	<i>Cs. Sc.</i>	<i>Ap. Sc.</i>	<i>Cs.</i>
					
	<i>Ap.</i>	<i>Ap. Sc.</i>	<i>Ap.</i>		
					
	<i>Cr.</i>	<i>Cs. Cr.</i>	<i>Cs. Sc.</i>	<i>Cr.</i>	<i>Ap.</i>
					
	<i>Cs. Cr.</i>	<i>Cs.</i>			

	Cr.	Sc.	Ap.	Ap.Sc.	Ap.

	Cs.	Cs.Cr.	Ap.	Ap.Sc.	Cs.Cr.

	Cr.	Ap.Sc.	Ap.	Ap.Sc.	Cr.

	Cr.	Ap.Sc.	Cs.Sc.	Cs.Cr.	Cr.

	Cr.	Cr.	Ap.	Ap.Cr.	Ap.

	Cr.	Cr.

	Cr.	Cr.	Cs.Cr.	Cr.



1 0 4
2 0 0 0
0 0 0 0
Cr.

1 0 4
2 0 0 0
0 0 0 0
Cs. Cr.

1 0 4
2 0 0 2 0 B
0 0 0 0
Cs.

1 0 4
2 0 0 0
0 0 0 0
Ap. Cr.

1 0 4
2 0 0 0
5 0 0 0
Ap.



1 0
2 0 0 0
17
Ap.

1 Bis
17
Cs. Cr.

11 12
10 9
17
Cs.

2 0
9 14
17
Cr.



2 0
0 0 0 0
Cr.

11 12 0 4
2 0 0 0
Ap. Cr.

10 2 0 4
0 0 0 0
Cr.

10 0
9 5
17
Cs.

2 0
5 0 0 0
Ap. Sc.



1 Bis
1 5
Sc. Cr.

6 4 5
Sc.

1 Bis
1 2 0 0 R
2 0 0 0 B
Ap.

1 Bis
1 17
Cr.



2 0
0 0 0 0
17
Cr.

1 0
2 0 0 0
13
17
Ap. Cr.

1 0
2 0 0 0
Ap.

2 0
6 0 0 0
17
Cr.



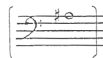
5 0
Cr.

11 12 0 4
5 0 0 0
Sc.

1 Bis
2 0 0 0
Ap. Sc.

11 12 0 4
2 0 0 0
5 0 0 0
Ap.

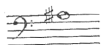
1 0
2 0 0 0
7 0 0 0
17
Cr.



1 Bis
1 2
17
Ap. Cr.

1 Bis
1 0 0 0
17
Cr.

1 Bis
11 12
10 9
6 0 0 0
17
Ap. Sc.



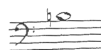
11.12.1
10
9
5
17
Cr.

1 Bis
1
17
Cr.

1 Bis
1
5
17
Cr.

1 Bis
1
17
Cr.

2
5
17
Ap.Cr.



Cr.

1 Bis
1
17
Ap.

11.12
17
Cs.

5
17
Sc.

9
5
17
Sc.



5
17
Ap.Sc.

11.12
10
9
5
17
Sc.Cs.

7
17
Ap.



1 Bis
1
5
17
Cr.

1 Bis
1
5
17
Cr.

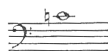
11.12
5
17
Cr.

11.12
5
17
Ap.

13
5
17
Cr.



3
5
17
Cr.



17
18

6
17
18
Ap.Sc.

11.12
17
18
Cs.



3
17
Ap.Sc.

1
5
17
Cr.

1
5
17
18
Ap.

17
Sc.

11.12
13
5
17
18
Cr.



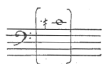
3
17
Cr.

1
17
Ap.Cr.

14
17
Ap.

3
5
17
Ap.Sc.

10
9
17
18
Sc.



3 ●
5 ○ | ○
17 ○
Sc.

11, 12 ●
●
○ ○ | ○ ○
Ap. Sc.



3 ●
●
●
18 ●
Ap.

5 ●
●
18 ●
Cr.

7 ●
●
●
Cr.

11, 12 ●
10 ●
9 ●
8 ●
19 ○
18 ○
Cs. Sc.

7 ●
●
19 ○
18 ○
Sc.



3 ●
●
7 ●
Ap. Cr.

9 ●
● | 14 ●
○ ○
17 ○
Cs.

3 ●
●
5 ●
18 ●
Cr.

10 ●
9 ●
5 ● | ○
18 ●
Sc.

11, 12 ●
●
13 ●
5 ●
18 ●
Sc.



3 ●
9 ○ | 19 ○
18 ○
Ap.

3 ●
●
●
19 ●
18 ●
Cr.

3 ●
●
7 ●
13 ●
Ap.

9, 3 ●
●
5 ○ | 19 ○
○ ○
Ap. Cr.

4 ●
●
5 ○ | ○
○ ○
Ap. Sc.

3 ●
5 ○ | ○
16 ●
18 ●
Sc. Ap.

3 ●
13 ●
5 ○ | ○
18 ●
Ap.



●
○ ○ ○ | ○
Ap.

10 ●
9 ●
●
●
Sc. Ap.

3 ●
13 ●
7 ●
15 ●
Cr.

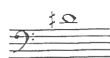
●
○ ○ ○ | ○
18 ●
Cr. Cs.

10 ●
9 ●
○ ○ | ○
18 ●
Ap. Sc.



10 ●
●
●
18 ●
Ap. Cr.

5 ●
○ ○ | ○
17 ●
Ap. Cr.



●
○ ○ ○ | ○
19 ●
17 ●
Cr.



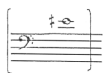
●
○ ○ ○ | ○ ○
19 ●
17 ●
Cr.

●
○ ○ ○ | ○ ○
14 ●
19 ●
Cr.

11, 12 ●
●
○ ○ ○ | ○
19 ●
Ap.

●
○ ○ ○ | ○ ○
19 ●
18 ●
Ap.

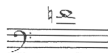
●
○ ○ ○ | ○
Cr.



Sc.
0, 11



Cr.
0, 11, *



Cr.



Ap.



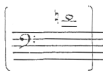
Ap.



Sc.



Ap.



Cr.



Cr.



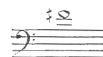
Cr.



Cs.



Ap.



Cr.



Cr.



Ap.Cr.



Ap.Cr.



Cr.



Cr.



Cr.



Sc.



Cs.



Cr.



Ap.



Cr.



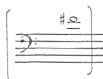
Cr.



Cr.



Cr.



Ap.Cr.



Ap.



Cr.



Cr.



Ap.



Cr.



Ap.Sc.



Ap.



Cs.Sc.



Cs.



Cs.



Cr.



Cr.



Sc.



Ap.Sc.



Sc.Ap.



Sc.Cs.



Cr.



Cr.



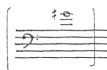
Ap.



Cr.



Cr.



Cr.



Cr.



Ap.Cr.



Cr.



Cr.



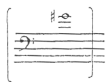
Ap.



Ap.



Cr.



Cs.Sc.



Cs.



h
●●●●●
C_r.

●●●●●
17
C_r.

2
●●●●●
5
C_r.

1
●●●●●
13
S_c.

9
●●●●●
18
S_c.



c
●●●●●
A_p.

5
●●●●●
18, 16
C_r.

3
●●●●●
13
5
●●●●●
A_p.

c
●●●●●
4
17
C_r.



2
●●●●●
C_r.

2
●●●●●
17
C_r.

5
●●●●●
17
C_r.

6
●●●●●
13
17
S_c.

14, 12
●●●●●
6
17
S_c.



10
●●●●●
A_p.

2
●●●●●
6
S_c.

2
●●●●●
3
7
18
A_p.

2
●●●●●
5
17
A_p, C_r.

10
●●●●●
A_p.



2
●●●●●
C_r.

1
●●●●●
2
13
A_p.

1
●●●●●
2
5
17
C_r.

1
●●●●●
2
5
17
C_r.

1
●●●●●
2
17
C_r.



19
●●●●●
17
A_p.

1
●●●●●
2
5
18, 16
C_r.

1
●●●●●
2
5
18
A_p, C_r.

1
●●●●●
2
5
19
C_r.

1
●●●●●
2
19
A_p.



13
●●●●●
17
C_r.

2
●●●●●
3
13
5
19
A_p.

1
●●●●●
2
17
C_r.

1
●●●●●
2
6
15
C_r.

12
●●●●●
1
2
5
C_s.



2 4
10 13
7 17
Cr.

10 2
9 3
5
Ap. Cr.

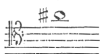
10 2
17
Ap.

1 2
6 13
7 15
Cs. Sc.

1 2
18
Cr.



2 4
17
Cs.



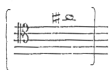
4 6
17
Cr.

4 6
17
Cr.

4 6
17
Ap.

2 3
6 17
Ap.

4 6
18
Cr.



1 2
6 13
Sc.

2 4
6 19
Cs. Sc.

1 2
6 19
Cs. Sc.



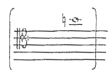
1 2
18
Cr.

2 20 B
3 15
7 18
Cr.

18 bis
1 2
17
Cs. Cr.

1 20 B
6
Cs. Cr.

1 20 B
17
Ap. Sc.



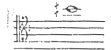
1 2
7 17
Cs. Sc.

2 20 B
3 15
Cr.

18 bis
1 20 B
5
Sc.

1 2
Cs. Sc.

1 13
Ap. Cr.



18 bis
1 13
5 18
Cr.

18 bis
1 13
Cr.

18 bis
1 20 B
5 18
Cr.

18 bis
1 13
7
Ap.

18 bis
1 20 B
13
Ap.

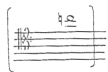


1^{Bis}
1
0000|0000
18 16
C.r.



1
000|000
C.r.

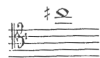
11 12 1
000|000
A.p.



1
000|000
18
C.r.

1
000|000
18

1^{Bis}
11 12
000|0014
5
C.s.Sc.



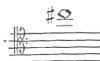
1^{Bis}
1
000|000
5
18
C.r.

1^{Bis}
1
000|020 B
5
13
C.s.

1
000|000
5
18
C.r.

1^{Bis}
1
000|020 B
5
18
A.p.

1
000|020 B
5
13
A.p.



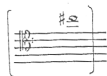
1
000|000
5
13
A.p.

1^{Bis}
1
000|000
7
17
C.r.

1^{Bis}
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000|020 B
5
18

1^{Bis}
1
000|020 B
5
18

1
000|000
5
13



1^{Bis}
1
000|000
18

1^{Bis}
1
000|000
6
17



1^{Bis}
1
000|000
13
19
17
C.r.

10
000|000
19
18
A.p.



1^{Bis}
11 12
000|000
18 16
S.c.

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A.p.

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A.p.

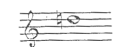
1
000|000
13
19
C.s.

1^{Bis}
1
000|000
17
19
C.s.

1^{Bis}
1
000|000
5
17
A.p.

1^{Bis}
1
000|000
13
17
A.p.

1
000|000
17
13
A.p.



1^{Bis}
1
000|000
5
17
A.p.

10
000|000
9
18
A.p.

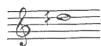
11, 12
000|000
A.p.

1^{Bis}
1
000|000
5
17
C.r.

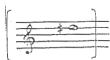
1^{Bis}
11, 12
000|000
A.p.



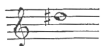
1 ●●●● 13 ●●●● 19 17	○ ●●●● 13 5 ●●●● 17	●●●● 13 ●●●● 17	1 ●●●● 13 ●●●● 17	10 ●●●● 9 ●●●● 18
Cs.	Cr. _____		Sc.	Cr.



1 Bis ●●●● 13 ●●●● 19 17	1 Bis ●●●● 13 5 ●●●● 17	1 Bis ●●●● 20 R 5 ●●●● 17	●●●● 13 ●●●● 17	●●●● 13 ●●●● 17
Cr. _____				



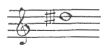
●●●● 13 ●●●● 19 17	1 Bis ●●●● 13 ●●●● 19 17	●●●● 13 ●●●● 19 17	●●●● 20 R ●●●● 19	1 Bis □ ●●●● 17 C2:
Ap.	Cr. _____		Sc.	Cr.



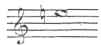
3 ●●●● 19 17	●●●● 19 7	3 ●●●● 20 R ●●●● 19	●●●● 20 R ●●●● 19	●●●● 20 R 7 ●●●● 17
Cr. _____				



□ ●●●● 19 48	■ ●●●● 19	1 Bis ●●●● 20 R ●●●● 20 B 7 ●●●● 19	■ ●●●● 19	●●●● 20 R ●●●● 13 ●●●● 19 17
Cr. _____				



3 ●●●● 20 R ●●●● 19 17	1 Bis ●●●● 20 R ●●●● 20 B ●●●● 19 17	1 ●●●● 20 R ●●●● 20 B ●●●● 17	3 ●●●● 20 R ●●●● 20 B ●●●● 19 17	1 Bis ●●●● 20 R ●●●● 20 B ●●●● 19	3 ●●●● 20 R ●●●● 13 ●●●● 19 17
Cr. _____					



3 ●●●● 18	3 ●●●● 20 R ●●●●	●●●● 18	3 ●●●● 18	3 ●●●● 18
Cr. _____				




3 ●●●●● 5 ●●●●● 17	9 3 0 ●●●●● 5 ●●●●● 18	0 4 ●●●●● ●●●●●	0 4 0 ●●●●● ●●●●●	0 0 ●●●●● 17
C.r.				




3 ●●●●● 5 ●●●●● 17	3 0 ●●●●● 5 ●●●●● 17	3 0 ●●●●● 5 ●●●●● 17	0 2 0 B ●●●●● 5 ●●●●● 17	0 4 0 ●●●●● 5 ●●●●● 17
C.r.				




2 0 3 ●●●●● 5 ●●●●● 17	2 0 3 ●●●●● 5 ●●●●● 17		2 0 3 ●●●●● 5 ●●●●● 17
C.r.			



2 ●●●●● ●●●●●		2 ●●●●● ●●●●●
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1 2 ●●●●● ●●●●●		1 Bis 1 2 ●●●●● ●●●●●
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ESERCIZI
EXERCISES

1) Scala quartitonale
Quarter-tone scale

The exercise consists of five staves of music, each containing four measures. The notes are represented by dots on the staff lines, with fingerings and positions indicated by numbers and additional dots.

Staff 1:

- Measure 1: Fingerings 9, 13, 18; Position 4.
- Measure 2: Fingerings 12, 18; Position 4.
- Measure 3: Fingerings 9, 14, 18; Position 4.
- Measure 4: Fingerings 7, 17; Position 4.

Staff 2:

- Measure 1: Fingerings 11, 12, 17; Position 4.
- Measure 2: Fingerings 9, 17; Position 4.
- Measure 3: Fingerings 11, 18; Position 4.
- Measure 4: Fingerings 5, 17; Position 4.

Staff 3:

- Measure 1: Fingerings 5, 18; Position 4.
- Measure 2: Fingerings 5, 19; Position 4.
- Measure 3: Fingerings 12, 19; Position 4.
- Measure 4: Fingerings 5, 19; Position 4.

Staff 4:

- Measure 1: Fingerings 3, 20, 3; Position 4.
- Measure 2: Fingerings 18, 17; Position 4.
- Measure 3: Fingerings 11, 17; Position 4.
- Measure 4: Fingerings 1, 17; Position 4.

Staff 5:

- Measure 1: Fingerings 1, 17; Position 4.
- Measure 2: Fingerings 2, 17; Position 4.
- Measure 3: Fingerings 11, 12, 17; Position 4.
- Measure 4: Fingerings 1, 17; Position 4.

3) Arpeggi alterati di un quarto di tono

Arpeggios with quarter-tone alterations

MAGIORI (MAJORS)

The musical score consists of ten staves, each containing a sequence of notes and chords with quarter-tone alterations. The first staff is labeled "MAGIORI (MAJORS)". The notation includes various accidentals (sharps, naturals) and stems, indicating the specific quarter-tone alterations for each note in the arpeggios.

MINORI (MINORI)

The image displays ten staves of musical notation for guitar, arranged vertically. Each staff begins with a bass clef and a key signature of one sharp (F#). The notation includes various chord voicings and melodic lines, with some staves showing a transition to a treble clef. The music is written in a style typical of guitar tablature or chord charts.

4) Arpeggi per quarti di tono
Arpeggios using quarter-tones

MAGGIORI (MAJOR)

The image displays ten staves of musical notation, each representing a different major arpeggio. The notation is written in bass clef and includes quarter notes, eighth notes, and sixteenth notes, often beamed together. The arpeggios are: 1) C major (C4, E4, G4), 2) D major (D4, F#4, A4), 3) E major (E4, G#4, B4), 4) F# major (F#4, A#4, C#5), 5) G major (G4, B4, D5), 6) A major (A4, C#5, E5), 7) B major (B4, D#5, F#5), 8) C# major (C#5, E5, G#5), 9) D# major (D#5, F#5, A#5), and 10) E# major (E#5, G#5, B5). The notes are arranged in ascending and descending patterns across the staves.

This page contains ten staves of musical notation, likely for guitar. Each staff consists of two staves: a lower staff (bass clef) and an upper staff (treble clef). The notation includes various chords and melodic lines. The key signature is one sharp (F#). The notation includes sharp signs for notes and chord symbols like 't' and '#'. The music is written in a style that suggests a specific guitar technique, possibly fingerpicking or a similar style, given the use of 't' and '#' symbols.

MINORI (MINOR)

This page contains ten staves of musical notation, all in bass clef. The notation is organized into five pairs of staves. Each pair consists of a single melodic line on the top staff and a multi-measure chordal texture on the bottom staff. The music is written in a minor key, as indicated by the title and the presence of a key signature with one sharp (F#). The notation includes various rhythmic values such as quarter, eighth, and sixteenth notes, as well as rests. The chordal textures are dense, often featuring multiple notes per measure, and some staves include dynamic markings like 'p' (piano) and 'f' (forte). The overall style is that of a technical exercise or a short composition for a single instrument, possibly a cello or double bass.

This page contains ten systems of musical notation, each consisting of a bass staff (left) and a treble staff (right). The music is written in a key signature of one sharp (F#) and a common time signature (C). The notation includes various rhythmic values such as eighth and sixteenth notes, as well as rests. The bass staffs feature a consistent rhythmic pattern, often with a dotted eighth note followed by a sixteenth note, while the treble staffs provide harmonic accompaniment with chords and single notes. The overall style is characteristic of a guitar accompaniment for a vocal melody.

Schema ritmico
Rhythmic scheme

a)

First staff of music for rhythmic scheme a). It consists of a single line of music with a bass clef. The notation includes various rhythmic values and accidentals, with some notes beamed together and slurs indicating phrasing.

1 ecc. 2 3 4 5

Measures 1 through 5 of rhythmic scheme a). Measure 1 is marked with a first ending bracket and 'ecc.'. Measures 2, 3, 4, and 5 follow with similar rhythmic patterns.

6 7

Measures 6 and 7 of rhythmic scheme a). Measure 6 continues the pattern, and measure 7 concludes the sequence.

b)

Second staff of music for rhythmic scheme b). It consists of a single line of music with a bass clef, similar in notation to scheme a).

1 ecc. 2 3

Measures 1 through 3 of rhythmic scheme b). Measure 1 is marked with a first ending bracket and 'ecc.'. Measures 2 and 3 follow.

4 5 6 7

Measures 4 through 7 of rhythmic scheme b). Measures 4, 5, 6, and 7 complete the sequence.

c)

Third staff of music for rhythmic scheme c). It consists of a single line of music with a bass clef, featuring more complex rhythmic patterns and slurs.

2 3 4

Measures 2 through 4 of rhythmic scheme c). Measure 2 is marked with a first ending bracket and 'ecc.'. Measures 3 and 4 follow.

5 6 7

Measures 5 through 7 of rhythmic scheme c). Measures 5, 6, and 7 complete the sequence.

5) Intervalli alterati di un quarto di tono

Intervals altered by quarter-tones

TERZA MINORE (MINOR 3rd)

Exercise for the Minor 3rd interval. The notation is presented in four systems, each with two staves. The first system shows the interval in bass clef (F2 to A2) and treble clef (F4 to A4). The second system shows the interval in bass clef (A2 to C3) and treble clef (A4 to C5). The third system shows the interval in bass clef (C3 to E3) and treble clef (C5 to E5). The fourth system shows the interval in bass clef (E3 to G3) and treble clef (E5 to G5). Each system contains a series of notes with a sharp sign indicating the quarter-tone alteration.

TERZA MAGGIORE (MAJOR 3rd)

Exercise for the Major 3rd interval. The notation is presented in four systems, each with two staves. The first system shows the interval in bass clef (F2 to A2) and treble clef (F4 to A4). The second system shows the interval in bass clef (A2 to C3) and treble clef (A4 to C5). The third system shows the interval in bass clef (C3 to E3) and treble clef (C5 to E5). The fourth system shows the interval in bass clef (E3 to G3) and treble clef (E5 to G5). Each system contains a series of notes with a sharp sign indicating the quarter-tone alteration.

QUARTA (FOURTH)

Exercise for the Fourth interval. The notation is presented in four systems, each with two staves. The first system shows the interval in bass clef (F2 to B2) and treble clef (F4 to B4). The second system shows the interval in bass clef (A2 to D3) and treble clef (A4 to D5). The third system shows the interval in bass clef (C3 to F3) and treble clef (C5 to F5). The fourth system shows the interval in bass clef (E3 to A3) and treble clef (E5 to A5). Each system contains a series of notes with a sharp sign indicating the quarter-tone alteration.

QUARTA AUMENTATA (AUGMENTED 4th)

QUINTA (FIFTH)

SESTA MAGGIORE (MAJOR 6th)

SESTA MINORE (MINOR 6th)

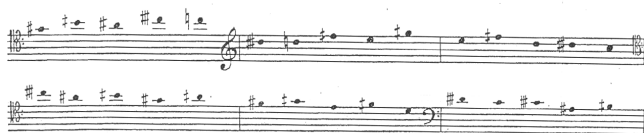
SETTIMA MAGGIORE (MAJOR 7th)

SETTIMA MINORE (MINOR 7th)

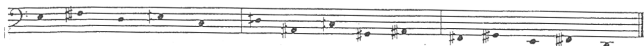
OTTAVA (EIGHTH)

6) Intervalli per quarti di tono
Intervals using quarter-tones

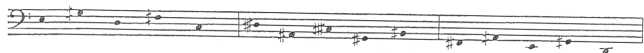
TERZA MINORE (MINOR 3rd)



TERZA MAGGIORE (MAJOR 3rd)



QUARTA (FOURTH)



QUARTA AUMENTATA (AUGMENTED 4th)

Musical notation for the augmented fourth interval (Quarta Aumentada). The notation is presented in two systems. The first system consists of two bass clef staves. The second system consists of a treble clef staff and a bass clef staff. The notation shows the interval between the two notes in various positions across the staves.

QUINTA (FIFTH)

Musical notation for the fifth interval (Quinta). The notation is presented in two systems. The first system consists of two bass clef staves. The second system consists of a treble clef staff and a bass clef staff. The notation shows the interval between the two notes in various positions across the staves.

SESTA MINOR (MINOR 6th)

Musical notation for the minor sixth interval (Sesta Menor). The notation is presented in two systems. The first system consists of two bass clef staves. The second system consists of a treble clef staff and a bass clef staff. The notation shows the interval between the two notes in various positions across the staves.



SESTA MAGGIORE (MAJOR 6th)

SETTIMA MINORE (MINOR 7th)

SETTIMA MAGGIORE (MAJOR 7th)

Schema ritmico
Rhythmic scheme

Four rhythmic schemes labeled a, b, c, and d. Each scheme shows a sequence of notes on a staff with fingerings 1, 2, 3, 4 indicated above them. Scheme a) has notes on the 1st, 2nd, 3rd, and 4th lines. Scheme b) has notes on the 1st, 2nd, 3rd, and 4th lines. Scheme c) has notes on the 1st, 2nd, 3rd, and 4th lines. Scheme d) has notes on the 1st, 2nd, 3rd, and 4th lines.

Combinazioni del numero 4 da abbinare ai quattro valori
Combinations of the number 4 to apply to four note values

1 1 1 1 1 1	2 2 2 2 2 2	3 3 3 3 3 3	4 4 4 4 4 4
2 2 3 3 4 4	3 3 4 4 1 1	1 1 2 2 4 4	1 1 2 2 3 3
3 4 4 2 2 3	4 1 1 3 3 4	2 4 4 1 1 2	2 3 3 1 1 2
4 3 2 4 3 2	1 4 3 1 4 3	4 2 1 4 2 1	3 2 1 3 2 1

Example of a rhythmic scheme on a staff with fingerings 1, 2, 3, 4 indicated above the notes. The sequence ends with "ecc." (etcetera).

Example of a rhythmic scheme on a staff with fingerings 1, 2, 3, 4 indicated above the notes. The sequence ends with "ecc." (etcetera).

Esempi
Examples

Example a) showing a sequence of notes on a staff with fingerings 1, 2, 3, 4, 1, 2, 3, 4 indicated above them. The sequence ends with "ecc." (etcetera).

Example b) showing a sequence of notes on a staff with fingerings 2, 3, 4, 1, 2, 3, 4, 1 indicated above them. The sequence ends with "ecc." (etcetera).

Example c) showing a sequence of notes on a staff with fingerings 3, 4, 2, 1, 3, 4, 2, 1 indicated above them. The sequence ends with "ecc." (etcetera).

Example d) showing a sequence of notes on a staff with fingerings 4, 2, 1, 3, 4, 2, 1, 3 indicated above them. The sequence ends with "ecc." (etcetera).

7) Tremoli
Tremolos

The image displays a handwritten musical score for tremolos on a six-string guitar. It consists of eight systems, each with a musical staff and a corresponding diagram of the guitar's fretboard. The diagrams show the positions of the fingers (indicated by numbers 1-4) and the strings being played (indicated by dots on the strings).

The systems are as follows:

- System 1:** Musical staff with a tremolo symbol. Diagrams show fingerings for strings 9, 13, and 18.
- System 2:** Musical staff with a tremolo symbol. Diagrams show fingerings for strings 9, 13, 18, 7, 16, and 18.
- System 3:** Musical staff with a tremolo symbol. Diagrams show fingerings for strings 7 and 17.
- System 4:** Musical staff with a tremolo symbol. Diagrams show fingerings for strings 7, 17, 11, 12, 4, 13, and 6.
- System 5:** Musical staff with a tremolo symbol. Diagrams show fingerings for strings 11, 12, 4, 13, 6, and 17.
- System 6:** Musical staff with a tremolo symbol. Diagrams show fingerings for strings 5, 17, and 5.
- System 7:** Musical staff with a tremolo symbol. Diagrams show fingerings for strings 5, 17, and 5.
- System 8:** Musical staff with a tremolo symbol. Diagrams show fingerings for strings 5, 17, and 5.

This page contains eight systems of musical notation for guitar, each consisting of a bass clef staff and a corresponding guitar chord diagram. The diagrams use dots to represent frets and lines to represent strings. Numbers 4, 5, and 17 are used to indicate fingerings or positions. The notation includes various chord voicings and melodic lines across the systems.

System 1: Four diagrams showing chord voicings with fingerings 4, 5, and 17. The musical staff shows a sequence of notes in a bass clef.

System 2: Four diagrams showing chord voicings with fingerings 4, 5, and 17. The musical staff shows a sequence of notes in a bass clef.

System 3: Four diagrams showing chord voicings with fingerings 4, 5, and 17. The musical staff shows a sequence of notes in a bass clef.

System 4: Four diagrams showing chord voicings with fingerings 4, 5, and 17. The musical staff shows a sequence of notes in a bass clef.

System 5: Four diagrams showing chord voicings with fingerings 4, 5, and 17. The musical staff shows a sequence of notes in a bass clef.

System 6: Four diagrams showing chord voicings with fingerings 4, 5, and 17. The musical staff shows a sequence of notes in a bass clef.

System 7: Four diagrams showing chord voicings with fingerings 4, 5, and 17. The musical staff shows a sequence of notes in a bass clef.

System 8: Four diagrams showing chord voicings with fingerings 4, 5, and 17. The musical staff shows a sequence of notes in a bass clef.

The page contains six systems of musical notation, each consisting of a tablature staff and a bass clef staff. The tablature staves use numbers 0-5 to indicate fret positions, with some systems including additional markings like '12', '13', '17', '18', and '19'. The bass clef staves show the corresponding notes and accidentals (sharps and naturals) for each fret position. The notation is organized into six horizontal systems, each with four measures.

System 1: Tablature shows notes 4, 3, 203, and 4. Bass clef shows notes G, F, E, D.

System 2: Tablature shows notes 4, 3, 3, 2. Bass clef shows notes G, F, E, D.

System 3: Tablature shows notes 4, 203, 2, 2. Bass clef shows notes G, F, E, D.

System 4: Tablature shows notes 4, 17, 3, 2. Bass clef shows notes G, F, E, D.

System 5: Tablature shows notes 2, 17, 17, 17. Bass clef shows notes G, F, E, D.

System 6: Tablature shows notes 11, 12, 1, 5, 17, 5, 18, 18, 18, 3, 18, 18, 18, 3, 18. Bass clef shows notes G, F, E, D.

This page contains eight staves of musical notation for guitar. Each staff consists of four measures. The notation includes a treble clef, a key signature of one sharp (F#), and a 4/4 time signature. The music features a consistent bass line with a low E string drone and a melody line on the upper strings. Above each measure, there are diagrams of the guitar fretboard showing fingerings for the notes in the melody line. The diagrams use numbers 1-4 for fingers and 'x' for muted strings. Some diagrams also include a '0' for an open string. The notation includes various note values (quarter, eighth, and sixteenth notes), rests, and slurs.

8) Serie di 24 suoni
Series of 24 sounds

8 bis) Serie di 7 suoni
Series of 7 sounds

Iniziando dal terzo suono

Beginning with the third sound

Four staves of musical notation in bass clef, labeled T, K, L, and M. Each staff shows a sequence of notes with slurs and accidentals. The notes are: T (F, G, A, B, C, D, E, F#), K (G, A, B, C, D, E, F#, G), L (A, B, C, D, E, F#, G, A), and M (B, C, D, E, F#, G, A, B). The sequence starts on the third sound (A) and proceeds through the series. The notation includes slurs, ties, and accidentals (sharps and naturals). The word "ecc." is written at the end of the M staff.

Iniziando dal primo suono e saltandone uno sino ad esaurimento della combinazione. Lo stesso saltando due, tre e quattro suoni.

Beginning with the first sound and leaping over the next until completion of the permutations of the series. The same, leaping over two, three and four sounds.

Esempi:

Examples:

Saltando un suono

Leaping over one sound

Four staves of musical notation in bass clef, labeled T, K, L, and M. Each staff shows a sequence of notes with slurs and accidentals. The notes are: T (F, G, A, B, C, D, E, F#), K (G, A, B, C, D, E, F#, G), L (A, B, C, D, E, F#, G, A), and M (B, C, D, E, F#, G, A, B). The sequence starts on the first sound (F) and leaps over one sound. The notation includes slurs, ties, and accidentals (sharps and naturals).

Saltando due suoni
Leaping over two sounds

The image shows four staves of musical notation, labeled T, K, L, and M. Each staff contains a sequence of notes with slurs and accents, demonstrating the technique of leaping over two sounds. The notes are written on a single staff, and the slurs indicate the leaps between notes. The accents are placed above the notes. The key signature is one sharp (F#).

ecc.

9) Timbri diversi di uno stesso suono ottenuti da diteggiatura
Different timbres of the same sound obtained by fingering

The image shows a musical score for a single staff with various fingering diagrams above the notes. The score includes dynamic markings like *p*, *mf*, and *mp*. The fingering diagrams consist of circles representing fingers (1-4) and dots representing strings (1-6). The diagrams are placed above the notes to indicate the specific fingering used for each note. The key signature is one sharp (F#).

Semi-oscillazioni e oscillazioni
Oscillations and half-oscillations

Four musical staves in bass clef illustrating oscillation techniques. Each staff shows a sequence of notes with wavy lines above them indicating the oscillation. The first staff shows a half-oscillation with a fermata. The second staff shows a full oscillation with a fermata. The third staff shows a half-oscillation with a fermata. The fourth staff shows a full oscillation with a fermata.

Combinazioni di vibrati e oscillazioni
Combinations of vibratos and oscillations

Four musical staves in bass clef illustrating combinations of vibrato and oscillation techniques. The first staff shows a half-oscillation with a fermata and a wavy line. The second staff shows a full oscillation with a fermata and a wavy line. The third staff shows a half-oscillation with a fermata and a wavy line. The fourth staff shows a full oscillation with a fermata and a wavy line.

Suono smorzato

The "smorzato" sound

Musical score for "Suono smorzato" (The "smorzato" sound). The score is written in bass clef with a 4/4 time signature. It consists of ten staves of music, each with dynamic markings and performance instructions.

The score begins with a *p* dynamic and includes markings for *pp*, *p*, *mp*, and *p*. It features several triplet markings (3) and a section marked "(ritmo ad libitum)". The key signature changes from one flat to two flats. The score concludes with a *p* dynamic and a final "(ritmo ad libitum)" instruction.

The notation includes various rhythmic values, including eighth and sixteenth notes, and rests. The piece ends with a final staff of music.

11) EFFETTI SPECIALI

Portamento. Acciacatura-portamento (di labbro).
 Acciacatura-portamento (da diteggiatura). Chiave pedale.

SPECIAL EFFECTS

Portamentos. Acciacatura-portamento (with the lips).
 Acciacatura-portamento (by fingerings). Pedal key.

Portamento

Portamento

● ■ ■ ● IDEM

2 3 4
0 0 19

9.3 13

11.12

5 17 19

1 BIS 4
0 0 13
17 19

Acciacatura-portamento, inferiore e superiore (di labbro)

Acciacatura-portamento above and below (with the lips)

11 12 4 4
6 18

10 4
9 18

15 4
9 18

10 4
9 13-14

3 4
0 0 4

1 BIS 20 B

5 13

17 3

5 13

2 4

p *f* *p* *f*

f *p* *f* *f* *fp*

p *f* *f* *p*

1 BIS ●●●●●
5 ●●●●● 13

100 ●●●●● 13
5 ●●●●● 17

20 A ●●●●● 13
100 ●●●●● 13
5 ●●●●● 17

fp ————— *f* *f* *fp* ————— *f*

Acciaccatura-portamento inferiore e superiore (da diteggiatura)
Acciaccatura-portamento above and below (by fingering)

10 ●●●●● 4
9 ●●●●● 14
6 ●●●●● 10

11 ●●●●● 13
10 ●●●●● 4
9 ●●●●● 10

12 ●●●●● 4
9 ●●●●● 13

10 ●●●●● 4
9 ●●●●● 13
6 ●●●●● 6

10 ●●●●● 4
9 ●●●●● 13
5 ●●●●● 5

9 ●●●●● 4
8 ●●●●● 4

1 ●●●●● 4
2 ●●●●● 4
3 ●●●●● 4
4 ●●●●● 4

12 ●●●●● 13

10 ●●●●● 13

3 ●●●●● 13

2 ●●●●● 13

1 bis ●●●●● 13
1 ●●●●● 1

1 bis ●●●●● 13
5 ●●●●● 13
1 ●●●●● 16

3 ●●●●● 19

3 ●●●●● 19

3 ●●●●● 19

20 A ●●●●● 13
17 ●●●●● 19

mf *p* *f* *f* *f* *p*

fp ————— *f*

IDEM

Chiave pedale

Pedal key

11-12

11-12

11-12

11-12

9 (oppure 11-10 10-9 9-13)

9 (idem)

9 (idem)

PARTE SECONDA
PART TWO

TAVOLA DEGLI ACCORDI OMOGENEI E CON DIFFERENTE TIMBRO
TABLE OF HOMOGENEOUS CHORDS AND CHORDS COMPRISING SOUNDS OF DIFFERENT TIMBRE

Accordi omogenei
Homogeneous chords

The image displays five rows of guitar chord diagrams, each representing a different chord. Each diagram consists of a six-string staff with dots indicating finger positions. Some diagrams include a symbol above them: a circle, a square, or a triangle, often accompanied by a number. The notes on the staff are labeled with numbers 1 through 18, representing different octaves of the same pitch class. The diagrams are arranged in a grid-like fashion across five rows and five columns.

Row 1: Circle symbol, notes 4, 9, 18, 13, 2, 11, 12, 15, 18, 13, 4, 13.

Row 2: Square symbol, notes 2, 10, 15, 18, 4, 17, 1, 6, 1, 20, 13, 4, 20, 13, 4, 18, 13, 4, 20, 13.

Row 3: Circle symbol, notes 9, 17, 13, 11, 12, 17, 18, 4, 11, 12, 15, 18, 4, 1, 5, 15, 1, 20, 13, 4, 13.

Row 4: Square symbol, notes 2, 5, 17, 12, 17, 1, 20, 13, 4, 1, 17, 18, 18, 18, 4, 5, 18, 13, 4, 5.

Row 5: Triangle symbol, notes 1, 17, 13, 17, 13, 4, 1, 1, 5, 18, 16, 17, 13, 13, 13, 13, 13.

11 12 4
10 9
7 17

11 12 4
10 9

12 4
6 17

1 20 B
13 13
5 13
6 15

11 12 4
5 17

11 12 4
M.P. 5 17

4 4
5 13

12 4

1 4
1 4

2 13
3 13
17

4 4
17

13 13
5

P.P. 2 5

2 2

A.P. 2 5

10 14
2 14
5 17

2 17
5 17

12 4
5 17

11 12 4
17

11 12 4
P.P. 17

1 20 B
13 13
5 17
17

4 4
17

4 4
5 18

4 4
17

2 17
3 17
b 17

Accordi con timbro differente

Chords comprising sounds of different timbre

The image displays a musical score for guitar, consisting of four systems of chords. Each system contains six chords, each represented by a diagram and a corresponding tablature. The diagrams use circles to represent notes and squares to represent frets. The tablature shows the fret numbers on the strings. The chords are labeled with numbers: 2, 5, 9, 11, 12, 17, 18, 10, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100. The score includes various accidentals and a 'M. Pr.' marking.

ESERCIZI
EXERCISES

1) Accordi omogenei
Homogeneous chords

Tre successioni di quattro accordi ciascuna
Three groups each comprising four chords

Schema ritmico
Rhythmic scheme

Numerazione di quattro valori
The numbering of four values

Combinazioni del numero 4 da abbinare ai quattro valori
Combinations of the number 4 to apply to four note values

Esempi
Examples

1 1 1 1 1 1	2 2 2 2 2 2	3 3 3 3 3 3	4 4 4 4 4 4
2 2 3 3 4 4	3 3 3 3 3 3	1 1 2 2 4 4	1 1 2 2 3 3
3 4 4 2 2 3	4 1 1 3 3 4	2 4 4 1 1 2	2 3 3 1 1 2
4 3 2 4 3 2	1 4 3 1 4 3	4 2 1 4 2 1	3 2 1 3 2 1

Esempi
Examples

a)

b)

c)

2) Accordi con timbro differente
Chords comprising sounds of different timbre

Serie di 7 accordi
Series of 7 chords

Articolazione della serie degli accordi
Articulation of the series of chords

PERMUTAZIONI : a) Iniziando dal secondo accordo, terzo, ecc.

PERMUTATIONS: a) Beginning from the second chord, the third, etc.

Esempi
Examples

Iniziando dal secondo accordo
Beginning with the second chord

Iniziando dal terzo accordo
Beginning with the third chord

- b) Iniziando dal primo accordo e saltandone uno sino ad esaurimento della serie. Lo stesso saltandone due, tre, quattro.

Beginning with the first chord and leaping over one chord until completion of the combination. The same, leaping over two chords, three and four chords.

Saltando un accordo

Leaping over one chord

Two staves of musical notation. The top staff is marked with a 'T' and the bottom with a 'K'. Both staves show a sequence of chords with arrows indicating leaps between them, specifically skipping one chord in the sequence.

Saltando due accordi

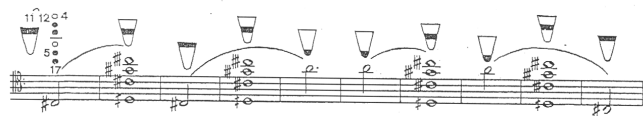
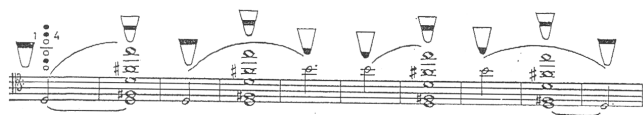
Leaping over two chords

Two staves of musical notation. The top staff is marked with a 'T' and the bottom with a 'K'. Both staves show a sequence of chords with arrows indicating leaps between them, specifically skipping two chords in the sequence. The notation ends with 'ecc.' on the bottom staff.

- 3) Collegamenti fra suoni singoli e un accordo

Linking single sounds to a chord

A single staff of musical notation showing a sequence of chords. Above each chord, a single note is shown with an arrow pointing down to the chord, illustrating the connection between individual sounds and the full chord.



3 4

A musical staff in treble clef with a key signature of one sharp (F#). The staff contains a sequence of notes: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4, C4. Above the staff, there are fingerings: '3' above G4, '4' above A4, and a slur over B4-C5-B4-A4-G4-F#4-E4-D4-C4 with a '4' above the slur.

1 1 1 2 4

A musical staff in treble clef with a key signature of one sharp (F#). The staff contains a sequence of notes: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4, C4. Above the staff, there are fingerings: '1' above G4, '1' above A4, '1' above B4, '2' above C5, and '4' above D4. A slur covers the notes from B4 to C4.

20 B
13
5

A musical staff in treble clef with a key signature of one sharp (F#). The staff contains a sequence of notes: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4, C4. Above the staff, there are fingerings: '20 B' above G4, '13' above A4, and '5' above B4. A slur covers the notes from B4 to C4.

1 bis 3
17

A musical staff in treble clef with a key signature of one sharp (F#). The staff contains a sequence of notes: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4, C4. Above the staff, there are fingerings: '1 bis 3' above G4, and '17' above A4. A slur covers the notes from B4 to C4.

4
17

A musical staff in treble clef with a key signature of one sharp (F#). The staff contains a sequence of notes: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4, C4. Above the staff, there are fingerings: '4' above G4, and '17' above A4. A slur covers the notes from B4 to C4.

4) EFFETTI SPECIALI
SPECIAL EFFECTS

Accordi smorzati

"Smorzato" chords

The musical score is organized into four systems, each containing three staves. Chord diagrams are placed above the staves, and dynamic markings are placed below them.

- System 1:**
 - Staff 1: Chord diagram (2, 3, 13, 17, b, #). Dynamics: *pp*.
 - Staff 2: Chord diagram (12, 4, 6, 17). Dynamics: *f*, *p*, *f*.
 - Staff 3: Chord diagram (12, 4, 17). Dynamics: *f*, *p*, *f*.
- System 2:**
 - Staff 1: Chord diagram (2, 4, 5, 13). Dynamics: *p*, *f*.
 - Staff 2: Chord diagram (1, 4, 9, 4, 13, 7). Dynamics: *p*, *ff*, *p*.
 - Staff 3: Chord diagram (1BIS, 13, 9, 13, 2, 15, 7). Dynamics: *ff*, *p*, *f*, *p*, *ff*.
- System 3:**
 - Staff 1: Chord diagram (1, 4, 6, 17). Dynamics: *p*.
 - Staff 2: Chord diagram (2, 5, 17). Dynamics: *f*, *pp*, *p*, *f*.
 - Staff 3: Chord diagram (1, 4, 20, 3, 10, 13, 17). Dynamics: *p*, *f*.
- System 4:**
 - Staff 1: Chord diagram (2, 3, 13, 17). Dynamics: *f*.
 - Staff 2: Chord diagram (12, 4, 17). Dynamics: *fp*, *f*, *p*.
 - Staff 3: Chord diagram (10, 13, 17) with a triangle symbol and "M. Pr." (Muted Percussion). Dynamics: *p*.

Accordo smorzato sovrapposto ritmicamente ad un suono singolo continuato
 "Smorzato" chords superimposed rhythmically on a single continuous sound

The musical score consists of four systems, each with three measures. Above each measure is a chord diagram showing fingerings on strings 1-4. The notes for each system are as follows:

- System 1:**
 - Measure 1: Chord diagram 11 12 4 (strings 1-4). Notes: B \flat (1), B \flat (2), D \flat (3), F \flat (4). Dynamics: *mf p*.
 - Measure 2: Chord diagram 5 0 4 (strings 1-4). Notes: D \sharp (1), D \sharp (2), F \sharp (3), A \sharp (4). Dynamics: *pp*.
 - Measure 3: Chord diagram 11 12 4 (strings 1-4). Notes: D \sharp (1), D \sharp (2), F \sharp (3), A \sharp (4). Dynamics: *pp*.
- System 2:**
 - Measure 1: Chord diagram 5 0 13 (strings 1-4). Notes: D \sharp (1), D \sharp (2), F \sharp (3), A \sharp (4). Dynamics: *pp*.
 - Measure 2: Chord diagram 12 4 (strings 1-4). Notes: D \sharp (1), D \sharp (2), F \sharp (3), A \sharp (4). Dynamics: *f p < f p*.
 - Measure 3: Chord diagram 5 0 17 (strings 1-4). Notes: D \sharp (1), D \sharp (2), F \sharp (3), A \sharp (4). Dynamics: *pp*.
- System 3:**
 - Measure 1: Chord diagram 17 (strings 1-4). Notes: D \sharp (1), D \sharp (2), F \sharp (3), A \sharp (4). Dynamics: *f*.
 - Measure 2: Chord diagram 4 13 (strings 1-4). Notes: D \sharp (1), D \sharp (2), F \sharp (3), A \sharp (4). Dynamics: *p*.
 - Measure 3: Chord diagram 10 9 4 (strings 1-4). Notes: D \sharp (1), D \sharp (2), F \sharp (3), A \sharp (4). Dynamics: *p*.
- System 4:**
 - Measure 1: Chord diagram 17 4 (strings 1-4). Notes: D \sharp (1), D \sharp (2), F \sharp (3), A \sharp (4). Dynamics: *f*.
 - Measure 2: Chord diagram 4 13 (strings 1-4). Notes: D \sharp (1), D \sharp (2), F \sharp (3), A \sharp (4). Dynamics: *mf*.
 - Measure 3: Chord diagram 3 4 (strings 1-4). Notes: D \sharp (1), D \sharp (2), F \sharp (3), A \sharp (4). Dynamics: *p*.

Additional markings include "ecc." and "(idem)" above the first two systems, and various dynamic markings (*mf*, *pp*, *f*, *p*) and accents throughout.

Trilli fra due accordi
Trills between chords

Handwritten musical score for the first system. It consists of three measures. Above each measure is a chord diagram for a 4-string guitar. The first measure has a chord diagram with notes 4, 13, and 5, and a trill marked 'tr 5'. The second measure has a chord diagram with notes 4 and 11, and a trill marked 'tr 11'. The third measure has a chord diagram with notes 4 and 20, and a trill marked 'tr 20B'. Dynamics include *p*, *f*, and *p=f*. The piece is in 4/4 time.

Handwritten musical score for the second system. It consists of three measures. Above each measure is a chord diagram for a 4-string guitar. The first measure has a chord diagram with notes 4 and 17, and a trill marked 'tr 17'. The second measure has a chord diagram with notes 4, 5, and 18, and a trill marked 'tr 18'. The third measure has a chord diagram with notes 4 and 17, and a trill marked 'tr 17'. Dynamics include *f*, *p*, and *f*. The piece is in 4/4 time.

Handwritten musical score for the third system. It consists of three measures. Above each measure is a chord diagram for a 4-string guitar. The first measure has a chord diagram with notes 2, 5, and 17, and a trill marked 'tr 17'. The second measure has a chord diagram with notes 4 and 10, and a trill marked 'tr 10'. The third measure has a chord diagram with notes 13, 13, and 20, and a trill marked 'tr 20'. Dynamics include *mp*, *f*, and *ff*. The piece is in 4/4 time.

Handwritten musical score for the fourth system. It consists of three measures. Above each measure is a chord diagram for a 4-string guitar. The first measure has a chord diagram with notes 4, 5, and 18, and a trill marked 'tr 18'. The second measure has a chord diagram with notes 4, 7, and 17, and a trill marked 'tr 17'. The third measure has a chord diagram with notes 13, 13, and 20, and a trill marked 'tr 20B'. Dynamics include *p*, *f*, and *p=f*. The piece is in 4/4 time.

Trillo fra due accordi combinato all'esecuzione contemporanea di altri suoni estranei agli accordi
Trills between two chords combined with the performance of other sounds foreign to the chords

4
5
18 2 1-bis ecc.
17 9 5 20B ecc.

4
7
17 2 1-2 1-bis 19
13 5 2 20B ecc.

f *p* *ppp* *f* *f* *p* *f* *f* *p* *f*

Glissando fra due accordi

Glissando between two chords

(idem) (idem)

11 12 4 11 12 4 11 12 4

6 7 15 18

(idem) (idem) (idem)

11 12 4 11 12 4 11 12 4

7 17 4 5 16 18

(idem) (idem) (idem)

p *ppp* *p* *ppp* *p* *ppp*

5) Diteggiature albaritorie

Alcatory fingerings

4
5
17

4
5
17

1 13 4 19

1 4 5

4
5
17

9 4 5

9 4 5 6 7 18

1 13 4 19

5 15

9 4 5

9 4 5 6 7 18

NOTA DI INFORMAZIONE ACUSTICA

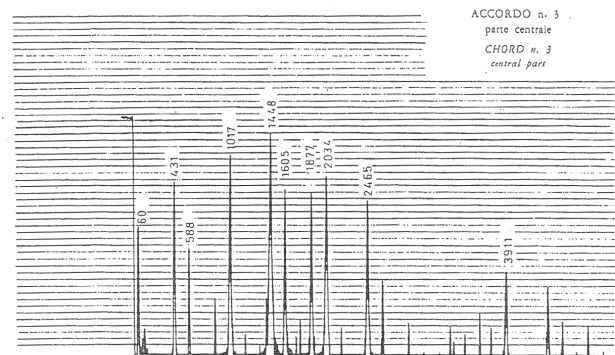
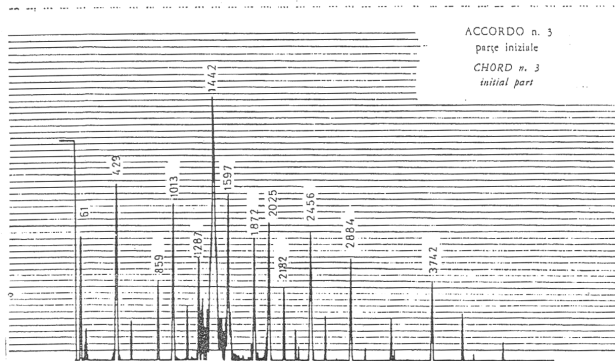
NOTE ON ACOUSTICS

Per dare una idea della reale complessità armonica di un accordo emesso da uno strumento a legno, e della sintesi effettiva che ne può trarre l'orecchio umano — agli effetti dell'uso pratico strumentale — viene esposto quanto segue.

La complessità armonica di un accordo emesso simultaneamente da uno strumento a legno si può dedurre dall'audiogramma di un amalgama sonoro emesso da un oboe, qui sotto riportato. Audiogramma nel quale risulta che questo tipo di accordi è generalmente composto da un tono fondamentale e da diverse decine di toni parziali, di volume sensibilmente diverso.

The following information is given so as to provide some idea of the real harmonic complexity of woodwind sounds and of the way the human ear makes a synthesis of such complex sound phenomena.

The harmonic complexity of a woodwind chord can be deduced from the following audiogram of a combination of sounds produced by the oboe. This audiogram reveals that this type of chord consists of a fundamental tone and some dozens of partial tones of very varied volume.



La sintesi che l'orecchio umano può trarre da tale complessità armonica, è indicata dalla notazione musicale dell'accordo stesso, secondo la classificazione da noi effettuata prima dell'analisi elettronica di esso.



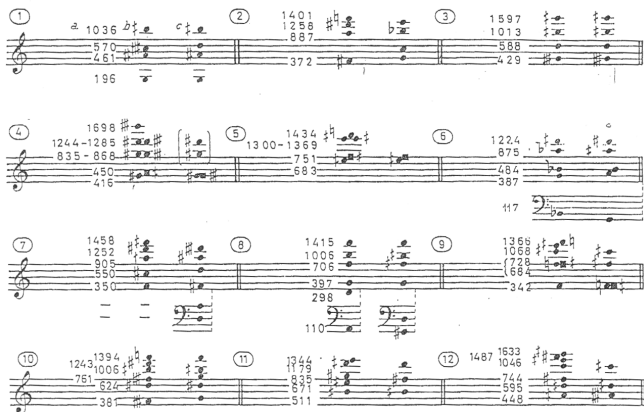
Se osserviamo nel grafico il numero di vibrazioni corrispondente al suono che le note raffigurano (429 = sol \sharp , 588 = Re \natural , 1013 = Si \sharp , 1597 = Sol \sharp) si potrà rilevare che queste note stesse corrispondono ai quattro toni parziali dell'amalgama sonoro che hanno maggior volume, come ci mostra l'indice analitico stesso. Ecco perché soltanto questi quattro suoni risultano evidenziati, mentre gli altri — compreso, in questo caso, il fondamentale — rimangono attenuati all'ascolto. Ecco anche perché gli accordi emessi dagli strumenti a legno — semplici nella sintesi musicale che ne facciamo, ma assai complessi nella loro natura — hanno un timbro così originale e affascinante.

Per esemplificare più ampiamente quanto è stato detto daremo ora un prospetto analitico di 12 accordi, emessi da un oboe, ordinato come segue: a) numero delle vibrazioni dei suoni di un accordo risultanti di maggior volume all'analisi elettronica; b) loro corrispondente notazione musicale; c) classificazione dell'accordo stesso — effettuata ad orecchio — precedente l'analisi elettronica. Nel confrontare le due classificazioni — l'una scientifica (a-b), l'altra empirica (c) — si potranno rilevare naturalmente alcune divergenze nello stabilire l'altezza di certi suoni. Divergenze del resto inevitabili ogniqualvolta si voglia confrontare il prodotto « musicale » di uno strumento o di una voce, con l'analisi elettronica del medesimo (1).

The synthesis the human ear produces from this complex sound is shown below in musical notation, the chord as written being classified aurally before the electronic analysis took place.

We can observe that these notes correspond to the four partial tones which are of greatest volume (429 = G \sharp , 588 = D natural, 1013 = B \sharp and 1597 = G \sharp). This is why these four tones are heard, while others, including the fundamental, remain subdued to the ear. This is also why woodwind chords (though audibly comparatively simple, but in reality of a very complex nature) have such an original and fascinating timbre.

To demonstrate the above more fully, an analysis of 12 oboe chords is given below, using the following order in each case: a) the Herz frequencies (i.e. vibrations per second) of the loudest sounds of chords, determined electronically; b) their corresponding musical notation, and c) components of the chord as determined by ear before the electronic analysis. In comparing the results of these two types of chordal analysis — the one scientific (a and b), the other empiric (c) — certain small differences will be observed. These differences are of course inevitable when one compares the « musical » impression of a voice or instrument with its electronic analysis (1).

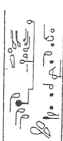
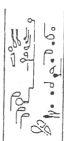
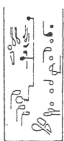
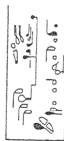
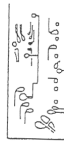
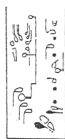
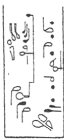
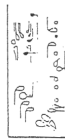
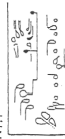
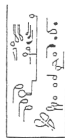
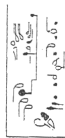
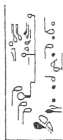
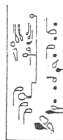
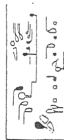


(1) Gli audiogrammi dell'analisi elettronica dei dodici accordi di cui a pag. 66 abbiamo riportato un esempio (accordo N. 3) sono stati eseguiti presso l'Istituto Nazionale Elettronico di Torino diretto dal Prof. Gino Sacerdote.

(1) The audiograms of the analysis of the twelve chords—an example of which is shown at pag. 66—have been carried out at the Istituto Nazionale Elettronico di Turin directed by Prof. Gino Sacerdote.

The image displays a musical score for a string quartet, consisting of 16 systems of staves. Each system contains four staves, representing the first, second, third, and fourth strings. The notation includes rhythmic values, stems, and beams. Above several systems, there are trapezoidal markings containing the letters 'f', 's', and 'p', which likely denote dynamic or articulation instructions. The score is organized into four groups of four systems each.

f = Mezzo forte = half forte





Handwritten musical notation on a staff, including a treble clef, a key signature of one sharp (F#), and several measures of music with notes and rests.

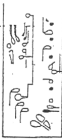
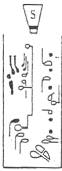
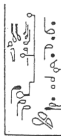
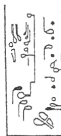
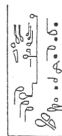
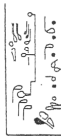
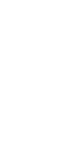
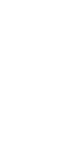
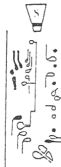
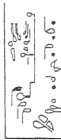
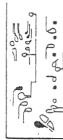
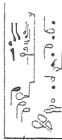
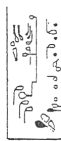
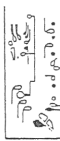
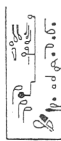
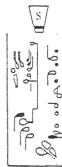
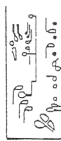
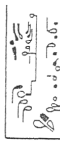
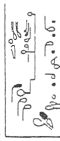
Handwritten musical notation on a staff, including a treble clef, a key signature of one sharp (F#), and several measures of music with notes and rests.



Handwritten musical notation on a staff, including a treble clef, a key signature of one sharp (F#), and several measures of music with notes and rests.



Handwritten musical notation on a staff, including a treble clef, a key signature of one sharp (F#), and several measures of music with notes and rests.





Handwritten musical notation on a staff.

Handwritten musical notation on a staff.

Handwritten musical notation on a staff.

Handwritten musical notation on a staff with a triangle symbol above it.

Handwritten musical notation on a staff.

Handwritten musical notation on a staff.

Handwritten musical notation on a staff.

Handwritten musical notation on a staff.



Handwritten musical notation on a staff.

Handwritten musical notation on a staff with a triangle symbol above it.

Handwritten musical notation on a staff.

Handwritten musical notation on a staff.

Handwritten musical notation on a staff.

Handwritten musical notation on a staff.

Handwritten musical notation on a staff.

Handwritten musical notation on a staff.



Handwritten musical notation on a staff.

Handwritten musical notation on a staff with a triangle symbol above it.

Handwritten musical notation on a staff with a triangle symbol above it.

Handwritten musical notation on a staff with a triangle symbol above it.

Handwritten musical notation on a staff.

Handwritten musical notation on a staff.

Handwritten musical notation on a staff.

Handwritten musical notation on a staff with a triangle symbol above it.

The image displays musical notation for Example 4a, consisting of two rows of staves. Each staff contains a sequence of notes with various fingerings and breathings indicated by symbols above the notes. The notation is arranged in a grid-like fashion, with two rows of staves. The first row contains 8 staves, and the second row contains 3 staves. Each staff shows a sequence of notes with fingerings and breathings indicated by symbols above the notes.

TAVOLA GENERALE DELLE DITEGGIATURE A QUARTI DI TONO IN PROGRESSIONE TIMBRICA. DAL TIMBRO CHIARO APERTO AL TIMBRO SEMPRE PIÙ SCURO CHIUSO

GENERAL CHART OF QUARTER TONE FINGERINGS IN TIMBRIC PROGRESSION RANGING FROM A BRIGHT, OPEN TONE COLOUR TO A DARK, CLOSED COLOUR

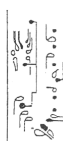
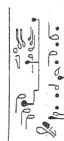
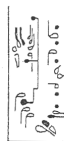
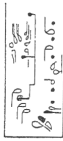
N.B. La maggior o minore spinta d'aria puo, in alcuni casi, influire leggermente sul timbro e l'intonazione.

(O) = Le chiavi e i fori tra le parentesi si usano ad libitum.
D. = Usare i denti in sostituzione della pressione delle labbra.

N.B. In certain cases, the timbre and pitch may be slightly influenced by an increase or decrease of air pressure.

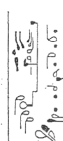
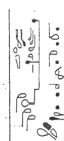
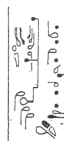
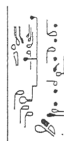
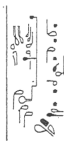
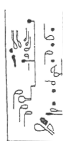
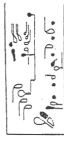
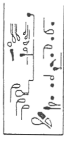
(O) = Keys and finger-holes in parentheses may be used ad lib.
D. = Use the teeth on the reed, rather than the lips.

The image displays musical notation for Example 4b, consisting of two rows of staves. Each staff contains a sequence of notes with various fingerings and breathings indicated by symbols above the notes. The notation is arranged in a grid-like fashion, with two rows of staves. The first row contains 4 staves, and the second row contains 4 staves. Each staff shows a sequence of notes with fingerings and breathings indicated by symbols above the notes.



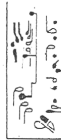
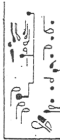
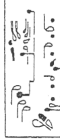
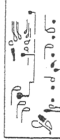
(Inizio scala per quarti di tono)

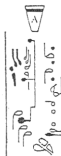
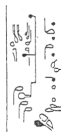
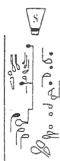
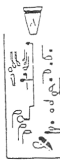
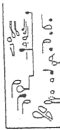
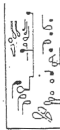
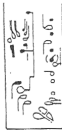
(Beginning of the Quarter Tone Scale)



Per ottenere questo timbro è necessario chiudere la chiave * con sughero od altro.

To obtain this timbre, the key * must be stopped with cork or some other material.







Handwritten musical notation on a staff with a treble clef and a key signature of one sharp (F#). The notation consists of a series of notes and rests, with some notes beamed together. The notes are mostly quarter and eighth notes.

Handwritten musical notation on a staff with a treble clef and a key signature of one sharp (F#). The notation consists of a series of notes and rests, with some notes beamed together. The notes are mostly quarter and eighth notes.



Handwritten musical notation on a staff with a treble clef and a key signature of one sharp (F#). The notation consists of a series of notes and rests, with some notes beamed together. The notes are mostly quarter and eighth notes.

Handwritten musical notation on a staff with a treble clef and a key signature of one sharp (F#). The notation consists of a series of notes and rests, with some notes beamed together. The notes are mostly quarter and eighth notes.

Handwritten musical notation on a staff with a treble clef and a key signature of one sharp (F#). The notation consists of a series of notes and rests, with some notes beamed together. The notes are mostly quarter and eighth notes.



Handwritten musical notation on a staff with a treble clef and a key signature of one sharp. The notation includes a series of notes and rests, with a small trapezoidal symbol above the staff.



Handwritten musical notation on a staff with a treble clef and a key signature of one sharp. The notation includes a series of notes and rests, with a small trapezoidal symbol above the staff.



Handwritten musical notation on a staff with a treble clef and a key signature of one sharp. The notation includes a series of notes and rests, with a small trapezoidal symbol above the staff.



Handwritten musical notation on a staff, consisting of a sequence of notes and rests.

Handwritten musical notation on a staff, consisting of a sequence of notes and rests.

Handwritten musical notation on a staff, consisting of a sequence of notes and rests.

Handwritten musical notation on a staff, consisting of a sequence of notes and rests.

Handwritten musical notation on a staff, consisting of a sequence of notes and rests.

Handwritten musical notation on a staff, consisting of a sequence of notes and rests.

Handwritten musical notation on a staff, consisting of a sequence of notes and rests.

Handwritten musical notation on a staff, consisting of a sequence of notes and rests.

Handwritten musical notation on a staff, consisting of a sequence of notes and rests.



Handwritten musical notation on a staff, consisting of a sequence of notes and rests.

Handwritten musical notation on a staff, consisting of a sequence of notes and rests.

Handwritten musical notation on a staff, consisting of a sequence of notes and rests.

Handwritten musical notation on a staff, consisting of a sequence of notes and rests.

Handwritten musical notation on a staff, consisting of a sequence of notes and rests.

Handwritten musical notation on a staff, consisting of a sequence of notes and rests.

Handwritten musical notation on a staff, consisting of a sequence of notes and rests.

Handwritten musical notation on a staff, consisting of a sequence of notes and rests.



