

## RANGES AND REGISTERS (Actual Sound)

Since authorities differ as to the actual physical possibilities of playing in the upper registers, the following chart makes no attempt to be definitive. The upper ranges and registers included are considered *practical* or *safe* for use in the following exercises in orchestration.

Piccolo

Flute

Alto Flute

Oboe

English Horn (Cor Anglais)

E♭ Clarinet

## THE INSTRUMENTS OF THE ORCHESTRA

### TRANSPPOSITION RATIOS

In order to produce the correct pitch to correspond with the rest of the orchestra, certain instrumental parts must be written higher or lower than the pitch or key in which the rest of the orchestra is playing.

In the chart below, the natural pitch of each of these transposing instruments is compared to middle C. To determine how much higher or lower to write the part for a specified instrument, find the interval listed for it on the transposition chart below.

C Piccolo

D♭ Piccolo

Alto Flute

English Horn

E♭ Clarinet

B♭ Clarinet

A Clarinet

E♭ Alto

B♭ Bass

B♭ Trumpet

Horn in F

Double Bass

Contra-Bassoon

B♭ Soprano Saxophone

E♭ Alto Saxophone

B♭ Tenor Saxophone

E♭ Baritone Saxophone

### TRANSPPOSITION CHART

If middle C is *lower* than the pitch tone (the tone in parentheses), the part for that instrument must be written *lower* than actual sound by the distance shown.

**B♭ Clarinet**

dark, weak, bright, shrill

**A Clarinet**

dark, weak, bright, shrill

**E♭ Alto Clarinet**

dark, bland, mellow, intense

**B♭ Bass Clarinet**

very deep, dark, heavy

**B♭ Soprano Saxophone**

ordinary, plaintive, shrill

**E♭ Alto Saxophone**

heavy, natural, stringent

**B♭ Tenor Saxophone**

heavy, natural, intense

**E♭ Baritone Sax.**

heavy, usable

**Bassoon**

rough, clear, piercing

**Contra Bassoon**

ponderous, heavy, grotesque

**B♭ Trumpet**

dull, clear, strident

**Horn**

dark, deep, natural, stringent

**B♭ Trombone**

dull, strong, intense

**Bass Trombone**

heavy, deep, powerful

**Tuba**

deep, natural, usable

**Violin**

deep, warm, bright

**Viola**

dark, warm, intense

**Cello**

dark, warm, intense

**Bass**

g<sup>low</sup>, heavy, natural

**Harp**

deep, natural, bright

**Timpani**

**Vibraphone**

**Xylophone**

(sounds octave higher)

**Chimes**

**Glockenspiel**

(sounds two octaves higher)

**Celesta**

g<sup>low</sup>