Chapter Six: Tuning Theory and Terminology

											F
										Е	*
									D#/Eb	*	*
								D	*	*	15.850
							C#/Db	*	*	14.958	10.997
						C	*	*	14.121	10.382	1.180
					В	*	*	13.327	9.798	1.116	*
				A#/Bp	*	*	12.577	9.250	1.053	*	.790
			Α	*	*	11.870	8.732	.995	*	.744	*
		G#/Ab	*	*	11.202	8.244	.941	*	.702	*	9.424
	G	*	*	10.578	7.778	.886	*	.664	*	8.894	*
F#/G¤	*	*	9.982	7.343	.838	*	.625	*	8.396	*	*
*	*	9.424	6.930	.790	*	.590	*	7.925	*	*	0
		F#/Gp *	G * F#/Gp * *	G * * F#/GD * 9.982	A * G#/Ab * * G * * 10.578 F#/Gb * 9.982 7.343	A#/Bp * A * * G#/Ab * * 11.202 G * * 10.578 7.778 F#/Gp * 9.982 7.343 .838	B * A#/Bp * * A * * 11.870 G#/Ab * * 11.202 8.244 G * * 10.578 7.778 .886 F#/Gp * 9.982 7.343 .838 *	C B * * A#/Bb * * 12.577 A * * 11.870 8.732 G#/Ab * * 11.202 8.244 .941 G * * 10.578 7.778 .886 * F#/Gp * 9.982 7.343 .838 * .625	C#/Db * C * * * * 13.327 A#/Bb * * 12.577 9.250 A * * 11.870 8.732 .995 G#/Ab * * 11.202 8.244 .941 * G * * 10.578 7.778 .886 * .664 F#/Gp * * 9.982 7.343 .838 * .625 *	D * C#/Db * * * C * * 14.121 B * * 13.327 9.798 A#/Bb * * 12.577 9.250 1.053 A * * 11.870 8.732 .995 * G#/Ab * * 11.202 8.244 .941 * .702 G * 10.578 7.778 .886 * .664 * F#/Gb * 9.982 7.343 .838 * .625 * 8.396	D#/Eb * D#/Eb * D#/Eb * D#/Eb * D#/Eb * * D#/Eb * * D#/Eb * * * * * * * * *

^{*} The beat rates of these intervals are too fast to be useful.

6-14. Theoretical beat rates per second of all temperament octave intervals.

the lower note. Following the line to the right of G over to the C column, you will find that the theoretical beat rate is .886. Intervals marked with asterisks on the chart have beat rates too fast to be useful in tuning.

Illustration 6-15 lists all useful tuning intervals from illus. 6-14 in order of theoretical speed of beat rate. The left portion includes the fast beating intervals, including major thirds, minor thirds and sixths. The

Test Interval	Theoretic Per	Rounded Off		
	Maj. Thirds (4 Half Steps)	Sixths	Min. Thirds (3 Half Steps)	Beat Rate
F-A	6.93			7 –
F#-A#	7.34			7 +
G-B	7.78			8 –
F-D		7.93		8
Ap -C	8.24			8 +
F#-D#		8.40		8.5 –
A-C#	8.73			8.5 +
G-E		8.89		9 –
B _P -D	9.25			9 +
A2 -F		9.42		9.5 –
F-A>			9.42	9.5 –
B-D#	9.80			10 –
F#-A			9.98	10
C-E	10.38			10 +
G-Bb			10.58	10.5+
Db-F	11.00			11
G#-B			11.20	11 +
A-C			11.87	12 -
A#-C#			12.58	12.5
B-D			13.33	13 +
C-Ep			14.12	14 +
C#-E			14.96	15
D-F			15.85	16

	ning erval	Theoretical Beat Rate Per Five Seconds	Rounded Off Beat Rate		
Fifths	F-C	2.95	3 –		
	F#-C#	3.125	3 +		
	G-D	3.32	3.5 –		
	G#-D#	3.51	3.5		
	A-E	3.72	3.5 +		
	Bb -F	3.95	4 -		
	/F-Bb	3.95	4 -		
Fourths ₍	F#-B	4.19	4 +		
	G-C	4.43	4.5 -		
	G#-C#	4.71	4.5 +		
	A-D	4.98	5		
	A#-D#	5.27	5.5 –		
	B-E	5.58	5.5 +		
	C-F	5.90	6 –		

^{6-15.} Beat rates of tuning and test intervals in order of speed, including the fast-beating thirds and sixths (left) and slow-beating fourths and fifths (right).