TUNING UP

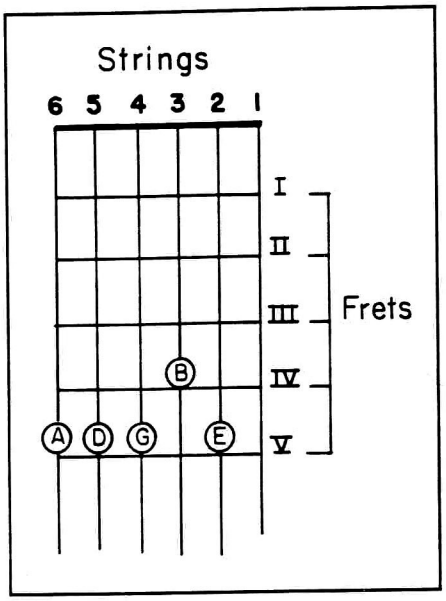
BY GLENN WEISER

Learning how to tune the guitar properly should be a priority for every beginning player. Being in tune is essential to the enjoyment of the music you play (it's been recorded that Mozart would actually experience nausea whenever he heard an out-of-tune instrument), and it's also important to the development of your musical ear. Think of the poor conductor who grew up playing a piano that was a quarter tone flat, so that he developed a rare case of erroneous perfect pitch. He said that the instruments in the orchestra always sounded a quarter tone sharp to him, and that he had to make a mental adjustment to compensate for it.

There are a variety of methods and devices for tuning the guitar. The method I teach is the time-honored one of matching a fretted lower string to the adjacent higher open string (see illustration). To tune your guitar, lightly strike a high E tuning fork against a hard surface and quickly press the ball of the fork to your guitar soundboard, holding the fork upright by the handle. The tuning fork gives you a reference tone; at least one string has to be tuned to the correct pitch before you can tune the others.

Listen to the tuning fork and tighten or slacken the first string until it matches the pitch of the fork. If you have trouble with this, try singing first the fork's note and then the string's note. You should be able to tell which of the two is higher or lower by feeling the sound move up or down in your throat.

With the first string at the right pitch, you'll be ready to tune the others. Put your finger on the fifth fret of the second string and pluck the string. Is the second string higher or lower than the first? If this is obvious, raise or lower the second string until it is close to the pitch of the first string. If you

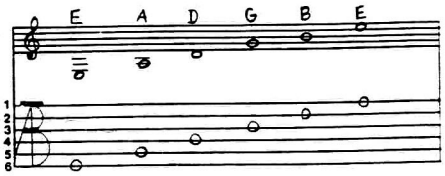


can't hear which of the two strings is higher, try the singing method again. As an alternative, you can also experiment with sliding your finger up or down the second string, comparing the two strings with the finger at different frets. If the two strings sound closer together when the second string is fretted below the fifth fret, the second string must be lowered; if the two strings sound closer together when you fret the second string above the fifth fret, the second string must be raised.

When you have the two strings relatively close in pitch, press the fifth fret of the second string again and play both strings. If the two strings are near enough in pitch to each other, you'll hear a pulsation. This effect is created by the way the sound waves of the strings overlap. The slower the pulsation, the closer the strings are in pitch. When the strings are perfectly in tune, the pulsation will disappear.

Once you've tuned the first pair of strings, repeat the process with the rest, with one important exception: you have to fret the third string at the fourth fret to tune it to the second string. All the others are fretted at the fifth fret to match the adjacent higher string.

When all the strings are correctly tuned, the pitches of the strings will be as follows: the sixth string is E, the fifth is A, the fourth is D, the third is G, the second is B, and the first is E (two octaves higher than the E on the sixth string). Here's how these notes look in music notation:



This is known as standard tuning and also as 4-3-4 tuning, based on the intervals of the guitar's four highest strings (the guitar originally had only four strings when it first appeared in the 15th century). According to an article by Anne Macaulay in the journal *Lindesfarne Letter* (#14), this tuning could very well date back to at least 1450 B.C. (the first evidence of the Greek cithara) or even earlier to Stonehenge-era Britain. Macaulay argues persuasively that the guitar inherited its tuning from the seven-string cithara.

It's also worth mentioning that there are other tunings besides standard tuning, called open tunings because the guitar is sometimes tuned to a major or minor chord. As many as 18 open tunings are used in South America alone; here and in Europe, the most common are open D (from the lowest string to the highest, the notes are D A D F# A D), open G (DGDGBD), open C (CGCGCE), DADGAD, DGDGBE, and dropped-D (with the sixth string lowered to D—DADGBE). ■