

If a flute does not have a tuning slide, it will not have a barrel. If you do have a tuning slide, keep the two parts of it assembled (not as pictured above) and push the slide together completely when you are done playing. This helps to keep the sliding surfaces of the parts clean.

Some flute makers combine into one piece the first two, second two, or all three of the pieces shown in the bottom row of this photo.

The flute pictured above has cork on its tenons. Sometimes tenons are wrapped with thread. Take good care of your corked or thread-wrapped tenons, as they are relatively delicate and vulnerable. Be sure corks are always well greased. Put the pieces of the flute together with a gentle turning motion to reduce stress on the tenons.

If you are playing an old flute for the first time, make sure that it is in as good a condition for playing as possible.

## ADJUSTING THE TUNING SLIDE

Many flutes have a metal sleeve inside all or part of the barrel and headjoint that allows for easy adjustment of the overall length of the flute for tuning purposes. Most flute makers who include tuning slides design their instruments to play optimally with the tuning slide pulled out slightly. This allows you to adjust the overall pitch sharper (by pushing in the slide, shortening the flute) or flatter (by pulling out the slide, lengthening the flute) to match the pitch of other instruments. I recommend starting with your tuning slide pulled out slightly.

It is clear that when you shorten or lengthen the flute by adjusting the tuning slide you are raising or lowering all the notes of the flute. Not so obvious, but very important to know, is the fact that this pitch change is not uniform. The pitch of certain notes changes more than the pitch of others. For any given note, the closer the lowest uncovered tone hole is to the foot of the flute, the smaller the change in pitch.

Let's look at a real world example. On my flute, with the tuning slide closed (i.e. fully pushed in), the distance from the end of the headjoint cork to the center of the B3 hole is about 17 inches. This is the length of the vibrating air column that produces low E, B3 being the lowest uncovered tone hole. The distance from the end of the headjoint cork to the center of the T1 hole is about 9 inches. This is the length of the vibrating air column that produces C-sharp in the low register, T1 being the lowest uncovered tone hole. If I pull out the tuning slide by one-half inch, I increase the lengths of these two air columns to 17.5 inches and 9.5 inches, respectively. In the case of E, this is a lengthening of about 2.9%, while for C-sharp this is a lengthening of about 6.2%. It follows that pulling out the tuning slide by one-half inch will lower the pitch of the C-sharp (the higher note) quite a bit more than it will lower the pitch of the E (the lower note). If you pull your tuning slide out as far as it will safely go, you will experience this effect in its extreme.

Overall pitch is also affected by several other factors, including the position of your lower lip on the flute. I discuss this later in the chapter (see pp. 99-100). As you refine your embouchure, you may need to experiment with the position of your tuning slide. You will eventually find a position for it that works well most of the time. You can then fine-tune the instrument as required.

If you do not have a tuning slide, you can still pull the headjoint out somewhat. But you must be very careful that you don't pull it out so far that the joint becomes loose or wobbly. This distorts the shape of the bore and may put you in danger of having your flute fall apart while playing.

Once I played an old William Hall flute that had no tuning slide. I sometimes had to pull out the headjoint quite a bit to play in tune with other musicians. In 1980, using this flute, I was on a concert tour performing with the great fiddler Kevin Burke. He noticed that I liked to play with my eyes closed, tuning into the music and tuning out much of the outside world. Once, in the middle of a fast reel, Kevin let out a sudden blood-curdling scream that startled me so severely that I jumped and my flute came apart at the headjoint. Kevin would spring this trick on me whenever he thought I least expected it, and it always worked. I was an easy target.