

When an instrument is in rather decent condition but has some problems, generally it does not need a 'Complete Overhaul.' Rather, we refurbish or 'Play Condition' the instrument so it is fully functioning as when it was new.

There can be a large difference among repair shops what that means exactly, so it is best for the customer to make their expectations clear so everyone is on the same page. Sometimes those expectations can be very expensive or very difficult to achieve, and that is why communication is key.



My choice in repairs will always default to, 'As good as I can make the instrument, within reason'. For instance, I don't re-plate. I don't have the equipment for that nor do I wish to risk my health or the environment using such chemicals.

Regardless, that is something usually prohibitively expensive and certainly not for most student instruments.

But I do feel that if the keys can be improved by appropriate buffing, then that is what should be done. And it isn't just for cosmetic reasons. The process of buffing and removing the buffing compound will dislodge any dirt and grime so there is much better response in the action.



Dents should be raised, even though to remove all traces of a dent it is often very expensive. I remove the dents to a point where they are much less noticeable, but within an appropriate budget for that particular quality level of instrument.



I look for problems even if they aren't apparent. The more I examine the instrument and handle the parts, the more likely I am to detect loosely-cemented corks or springs that are about to break.

I put the instrument together and take it apart, making certain everything fits as it should. I've seen plenty of damage from sections coming loose and falling off during a parade!



No matter what, when an instrument is successfully Play Conditioned, it should be done to a level that, with normal playing, the instrument should be relatively trouble-free for at least a year.



My Play Condition for this particular Flute:

After examining carefully, I removed all the keys from the body, then dipped the body in a special tarnish cleaner. After drying thoroughly, I inserted specially-sized Flute mandrels into each section and with a rawhide hammer, gently tapped the dents to level. Then, using an expansion tool on the lower tenon section, carefully fit to the socket of the foot joint so it was snug.

I noticed a spring that didn't look right. It had been bent so many times that it was loose and not dependable. I removed the old one and fit a new spring wire in place, trimming it to the correct size to properly engage the key.

All the pads were in excellent condition, so there was no need to replace any. However, I did clean each pad after buffing the keys. I also buffed the body.

Handling the trill key assembly, I noticed that the trill corks seems rather loose. I've made plenty of corks over the years and there is a bit of labor involved, so I was pleased these were still somewhat attached. I removed them and glued them back in position. They should be perfectly fine and give years of additional service.

Key Oil- Now, at this time a lot of people get carried away with the use of Key Oil. I don't believe it belongs in Care Kits, nor that anyone except your Professional Repair Technician ever apply Key Oil. It is more likely that such oil will cause many more problems than it will prevent. Oil attracts dirt. It is as simple as that. Plus, if you use one of those huge containers that are sold in the Music Store, it is very likely that it will be splashed all over the instrument and onto the pads, which will ruin them.

How do I use Key Oil? I put a few drops on the paper towel that is underneath the instrument parts and then touch my finger tip into the towel. That applies just the right amount to my fingers, and then I handle all the key rods, cleaning them with my fingertips/oil, and roll the rods on the dry paper towel section. That leaves the slightest coating/glaze of Key Oil on the rods. That's all you need!

I NEVER apply Key Oil to the keys/screws/rods when they are still mounted on the instrument, only when disassembled. The reality is that either a key fits or it doesn't fit. Trying to use Key Oil to make a key work smoother is a temporary fix at best. A correct repair will just burnish/straighten the key/rod/screw so it fits properly.

I reassembled the Flute, checking the action as I proceeded. Then I made any adjustments that were needed by eye and using a 'leak light', which is a small light tube placed inside the instrument. Even the smallest leak, or gap between the pad and seat, is apparent. If something doesn't look quite right I also use 'feeler papers' to make certain the pads all seat in combination at the correct time.

I pay special attention to the 'Thumb Bb' action to make certain it engages its partner key properly. I check the opening of the G# key because it often gets bent due to the level extending out from the Flute body. I check the 'Low Eb' because that key is often bent so the pad clearance is not sufficient for clear tone when opened. I know the trouble spots, so I double-check them!

There are a few other details that I check. I like to remove the head cork, whether it seems all right or not. It is rare that I find one that moves as it should or in the correct position. More often, they are too loose, but sometimes they are so tight they don't move at all. This particular instrument had a cork that was in the wrong place and was so stuck it was not very easy to remove.

Finally, after coaxing it out I found the inner plate was not against the cork so it definitely would not adjust properly. I tightened the plate and re-installed, setting it to 'normal' specifications. (Typically, using the other end of a cleaning rod and inserting it into the head, the slight groove should be centered on the lip-plate hole) The head cork is made to adjust for a reason, but often it is never moved.

If you find your instrument is 'always too flat/too sharp' and you are playing with proper air support, you just might consider a slight adjustment to the head cork instead of always pulling out the head joint itself (which will only 'cure' a sharp instrument, not one that is playing flat). A knowledgeable teacher will assist with the proper adjustment.

I also check one other part of the head joint, and that is the underside of the hole through the lip-plate. Often students, when cleaning out the moisture after playing, will improperly slide a metal cleaning rod up inside without covering the end with the swab cloth. It can hit the edge of the hole and nick it. It can make a difference! So I use a very small/fine file and make certain there are no ridges and that the proper 'undercut' is maintained.

Finally, it is time for me to actually PLAY the instrument! I go up and down the chromatic scale, checking for clear tone and even playing/tension on the keys, within the tolerances of the particular flute.

With this Armstrong model, there are always going to be some variations compared to a Professional Hand-Made one, but it should still just feel and sound 'right'. If it doesn't, I check the areas of the instrument for a problem. This Flute played quite well the first time, but I still felt the 'Low C' wasn't quite as strong as it should be.

I took another look at the key and gave it a slight nudge. I played it again and it played GREAT! The Flute was finished and ready to be wiped down again and placed in the case.