

Looking after the Clarinet (Jan 2023)

Cleaning the instrument

- Once a month leave the mouthpiece standing upside-down in mouthwash (or white vinegar) for 30 seconds and then wash out with soapy water - this will clear away any calcium deposits that have built up (take care to avoid wetting the cork on the tenon too much).
- If dust or fluff does gather on the instrument then gently brush it away with an (unused) shaving brush or small (10-20 mm) width unused paint brush.
- Occasionally polish the keys to prolong the life of the plating. Use a silver cleaning cloth (for silver plated keys) or a brass cleaning cloth (for nickel plated keys).
- Once a month use a precision screwdriver (if you feel competent) to gently check none of the screws are working loose.
- If the pads become sticky use (Yamaha) pad cleaning papers to clean the pads: - dab a little Methylated spirits onto the paper with a cotton bud, place the paper under the key pad, hold the key lightly closed and pull the paper through; once that the pad is clean place a sheet of (Yamaha) powder paper under the pad, hold the key lightly closed, and pull the paper through.

Some players find that their instrument tarnishes quickly – this can sometimes be the result of leaving the instrument out of its case for long periods of time (particularly if it is left in direct sunlight) but sometimes it seems to be caused by the breath or sweat of the player (in the same way some people have problems wearing certain jewellery). Tarnishing does not prevent the instrument playing properly – a player will be able to remove tarnish from most of the clarinet with a silver cloth (for silver plating) or brass cloth (for nickel plating); inaccessible areas can only be cleaned by a repairer when the instrument is serviced.

Preventing water problems

All woodwind instruments have problems caused by the condensation from the player's breath but the clarinet is particularly vulnerable to water collecting in tone-holes.

The physics of condensation

The air that the player blows into a woodwind instrument contains a great deal of water vapour. The temperature of this air is approximately 37 degrees Celsius whereas the temperature of the instrument (even when warmed up to room temperature) is approximately 20 degrees Celsius, therefore the water vapour in the player's breath condensates on the inner surface of the instrument, which is cool compared to the temperature of the air entering the instrument. The condensation is concentrated at the top of the bore where the player's breath first makes contact with the instrument - in the mouthpiece, the barrel, and the top section of the upper joint. The condensation in the bore forms equally over the inner surface at the top of the bore and gradually gravity forces the microscopic droplets of condensation to run down the sides of the bore to meet at the base of the bore where a rivulet of condensation forms.

Provided the instrument has been warmed up correctly (so condensation in the instrument is kept to a minimum) and is held correctly (see below) the rivulet that forms at the base of the bore will run down the length of the bore without entering any tone-holes, and will drip out the end of the instrument.

Why condensation is a particular problem for Clarinet players

All woodwind players have to cope with water caused by condensation but it is a particularly serious problem for Clarinet players for a number of reasons.

Firstly, Clarinet players often 'warm up' their instrument incorrectly - by blowing into it - this creates *excessive* condensation at the top of the bore which can either run directly into tone-holes on the upper side of the bore (1st trill, 2nd trill, A, Ab, 1st ring key) or *overload* the rivulet that forms at the base of the bore so that it floods into tone-holes nearer the lower side of the bore (3rd trill, 4th trill, C#/G#). The clarinet should be warmed up by holding the mouthpiece, barrel and top-joint for several minutes before playing.

Secondly, the Clarinet is actually quite difficult to physically warm up; the barrel and the top-joint have thick walls (compared to a flute for instance) so they need to be held in the player's (warm) hands for quite a while in order to become warm and prevent *excessive* condensation forming at the top of the bore when the player starts to play the instrument.

Thirdly, the acoustic design of the Clarinet means that the rivulet that forms at the base of the bore actually runs into or very near certain tone-holes. The rivulet would run into the speaker key tone-hole and the thumb tone-hole but manufacturers fit metal sleeves to these tone-holes that extend into the bore so the rivulet runs around the tone-holes and not into them. The rivulet will naturally run very close to the C#/G# tone-hole but this tone-hole is not fitted with an extended metal sleeve (presumably because it would be detrimental to the tuning of the note) so the rivulet (*if overloaded*) can flood into this tone-hole.

As well as warming up the instrument correctly the player can minimise water problems by paying attention to how they are holding the instrument when not playing it.

In performance, when the clarinet player is not actually playing for a period of time, the instrument should be held in the same position as it is played - vertically at an incline - this keeps the instrument warm and allows the rivulet to keep to its normal path. If the clarinet is rested horizontally (on the player's lap) the rivulet stops running down the base of the bore and there is a chance that water will enter a tone-hole. If the clarinet is put on a stand by the player's feet for any length of time the instrument will grow cold and excessive condensation will occur when the player starts using the instrument again (unless the player has re-warmed the clarinet in their hands).

When practising, the clarinet player should avoid tilting the instrument forwards - this can happen particularly when practising at home and turning over pages of sheet music - the player leans forward to turn the pages whilst holding the clarinet, this tilts the clarinet forward so there is a chance the rivulet at the base of the bore will deviate from its usual path and flood into a tone-hole.

Correcting water problems

Unfortunately once a clarinet has started having water problems (i.e. water regularly collects in one or more tone-holes) it is very difficult for the player to remedy this problem themselves. For whatever reason, the rivulet that runs along the base of the bore has established a path that leads into the tone-holes rather than avoiding them. A repairer can reset the path of the rivulet by cleaning the bore of the barrel and stripping down the top-joint and cleaning the bore and tone-holes (oiling the bore and tone-holes if it is a wooden instrument) then re-assembling the top-joint and playing the instrument to re-establish the correct path, then storing the instrument in the playing position overnight so the bore dries and the re-established path is fixed.

Clarinet stands

Some players find the chore of assembling and dis-assembling the Clarinet can prevent them practicing. If the Clarinet is placed on a stand after playing it can be left assembled and it will drain properly (although it is vulnerable to being knocked over). If the stand is to be kept at home, buy the largest one available because this will be the most stable; if the stand needs to be used at performances as well as at home, then a smaller stand that fits inside the case, case cover, or perhaps the bell, might be better. Children might be better off placing the instrument under their bed (remove the bell and rest the instrument with the holes pointing upwards), the instrument won't drain effectively but it might be played more often and it won't get knocked over.

Cases and case covers

Clarinets are easily damaged and an instrument case that holds the Clarinet securely is essential. The keys will be bent if the instrument can move in the case while being carried. Nothing else should be kept in the case unless there is a specific compartment for it (or it can fit in the bell). Clarinet case covers are useful if you need to carry a stand or sheet music.

Servicing the instrument

The instrument should be serviced regularly to ensure it is operating correctly. The pads, corks, and felts on the instrument (and also the adhesives which keeps these items in place) deteriorate over time. On older or poorer quality instruments the mechanism itself starts to wear and keys can become loose or jammed. Usually such deterioration is gradual and the player subconsciously compensates by blowing harder and pressing harder on the keys. Without servicing the deterioration continues - the quality of tone diminishes, the instrument becomes less responsive, and the tuning becomes unreliable; the deterioration continues until something major goes wrong and the instrument becomes unplayable and in need of considerable repair.

As a general guide to the frequency of servicing - if you have one main woodwind instrument and you are under grade 5 (or have been playing less than 5 years) you should have the instrument serviced approximately every two years, if you are above grade 5 (or have been playing more than 5 years) then you should have the instrument serviced approximately once a year. If you have more than one main woodwind instrument then each instrument probably gets used less often so you can go longer between services. If you are doing exams on the instrument it is best to at least have the instrument checked a couple of months before the exams so that you know it is working reliably when you go into the exam; players often blame themselves for the poor sound they produce when actually the instrument is at fault. The first indication that a Clarinet needs servicing is usually when the player starts having problems playing across the break (from throat Bb to B or C).

Adjusting to your instrument if it has just been serviced:

When an instrument is overdue a service you (the player) must compensate for the instrument's various problems. You have probably developed habits of pressing harder on the keys, blowing harder, and manipulating your embouchure as necessary to help tune the notes. You may not even have been aware that you were doing these things. Once the instrument has been serviced you need to stop compensating for the problems you were having with the instrument - therefore you need to break the habits you have developed.

The easiest way to do this is to spend the first 10 minutes of the next two or three practices working on (easy) scales and arpeggios only; use a light finger pressure and a light breath pressure and try to play softly. If you do not practice scales and arpeggios then practice some easy pieces of music so you can concentrate on your finger pressure and breath pressure rather than the notes.

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