**Section 2 TUNING AND MAINTAINING THE UILLEANN PIPE CHANTER**

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Note of caution for learners:

*Where references in these notes are made to modifications such as tone hole filing/elongation, or any other intervention in the nature of irreversible alterations,* ***it is very strongly advised that such works are not recommended as straightforward solutions to tuning or other problems with existing sets of pipes.*** *Permanent alterations on non heritage instruments should only be done by experienced pipe makers, on instruments which have been exhaustively studied and found to need due rectification*

*Persons learning pipe making are encouraged to carry out experimentation on test chanters, drones and regulators as part of systematic study of modification and alteration activities.*

 *No liability is accepted by Na Píobairí Uilleann or its instructors for any problem, damage time or other wastage arising from any experimental processes undertaken as a result of using any of the suggestions in these notes.*

 ***Permanent alterations should never be undertaken on heritage instruments.***

*Best practice health and safety precautions and procedures should be adopted in the home or workshop setting at all times.*

**Chanter tuning maintenance**

Before any attempt can be made to play regulators, the chanter must first be considered in a number of respects.

1. Is the chanter reed too hard or too soft to blow for the regulators? Both must be in pressure balance, thus for example if the chanter is too hard to blow the regulators may be caused to over blow, squeak or jump the octave. If the chanter is too soft to blow regulator notes may not sound when the regulator keys are depressed.

2. Check to see what fingering is necessary to produce an in tune' back D' and C#, when only the top hand is holding the chanter. Often, keeping C natural' finger off will suffice, but it can vary with different chanters and reeds. Some experimentation is necessary to find what works best.

3. Do some practice to see if any leaks from faulty fingering are **tending** to occur when using hand chords on the regulators and playing high octave notes on the chanter. A good exercise to check leaky fingers on the chanter is as follows: -**Hold the chanter fully closed, sounding no note, fill the bag to pressure and attempt to depress all of the cross chords, in twos across, for example tenor and middle or middle and bass regulators. Listen to hear if any leaks or squeaks sound from the chanter. The player must then be more careful when using regulators to avoid these leaks as much as possible as otherwise the chanter may fail to reach the high octave. In general it can be said that chanter fingering may be modified a little, with perhaps the melody played more simply where difficult regulator work is being done.**

4. RECHECKING THE TUNING OF THE CHANTER. Check to see that the chanter is in good tune in both octaves, and is playing at the proper pitch. This must be done very carefully and the best result obtained before attempting to tune regulator notes; otherwise faults in chanter tuning will be made obvious when regulator playing is attempted.

To get the chanter in tune and pitch:

( a ) Use tape if necessary on the upper part of the note holes if any notes are too sharp. Cobblers wax, softened and inserted into the tone hole was traditionally used to reduce the area of the tone hole which was sounding sharp in relation to other notes of the scale. THE DISADVANTAGE OF TAPING OR USE OF WAX IN THE TONE HOLE IS THAT IF TOO MUCH IS CLOSED OFF THE NOTE WILL ONLY SOUND IN THE HIGH OCTAVE OR TEND TO EASILY JUMP TO THE HIGH OCTAVE EVEN AT MODERATE PRESSURE. ***See figure 1***

( b ) A piece of paper, a piece of yogurt carton, cardboard or the like or a piece of a rush inserted into the bottom of the chanter can be used to bring bottom ‘D’ into tune if it is sounding sharp. ***See figure 2***

 ( c ) If the chanter is playing too sharp it may be flattened overall and the scale brought into tune with a copper wire or similar, inserted into the bore, looped at the end to ensure that it is held in place. A thin stainless-steel rod or a rush may also be used. Sometimes the diameter of the wire or rod can make a significant difference as to tuning such some experimentation is needed before arriving at the most appropriate arrangement. Thick waxed thread wrapped around the wire/rod opposite or slightly above the tone hole being flattened can flatten the particular note to the required extent. ***See Figure 3***

( d ) Plasticine, ‘mala’ or blue/white tack attached to the wire/rod can also be used to flatten individual notes but be careful not to use too much on the rod may block a note hole too much, as it may be caused to squeak or jump the octave when playing the lower octave.

DISADVANTAGE: blue/white tack may lodge and get stuck within the bore and may be difficult/IMPOSSIBLE to remove.

ADVANTAGE: With blue/white tack on the rod, when it is kept to one side of the rod, it may give some adjustment when the rod is slightly turned or moved within the bore. If it is moved too close to the note hole it may cause a squeak or gurgle. Varying the shape of the piece of blue/white tack may also help with fine tuning REMEMBER: any obstruction within the bore tend to affect the pitch of everything below that point to some extent.

Where a chanter note is persistently too flat such as indicated when a variety of different reeds sound flat in the low octave) it may have to be filed into tune by elongating it towards the chanter top. THIS IS A JOB FOR THE EXPERT PIPE MAKER AND WOULD ONLY BE DONE AFTER A GOOD DEAL OF CONSIDERATION OF THE PROBLEM AND EXPERIMENTATION WITH DIFFERENT REEDS AND OPTIONS.

**FINAL CHECKING ON CHANTER TUNING**

A final check on chanter tuning should be done with the tenor drone tuned to an open ‘A in the lower octave, checking the continuously sounding drone against the scale of notes and then deciding if the chanter is intoning or sounding in good tune on all notes.

There will be some slight differences in tuning depending on whether particular close or open fingering is used.

High octave tuning of the chanter can also vary with fingering and playing pressure to some extent. In some cases, notes may be blown possibly up to about 10 cents sharper on the higher octave. An example would be a high E which might be slightly flat but with increased pressure it could be “blown” into tune. In this case and with the high octave pressure generally, the drones should to be able to remain steady under the slightly increased pressure without wavering but being able to rise ever so slightly in pitch.

With chanter in some cases the high ‘B' and ‘C' may rise to be slightly sharper, and the drones may similarly also go up ever so slightly in pitch and so the instrument remains in agreement with itself. What must be detected however is whether the chanter reed is significantly sharper in the high octave due to the staple being too large or whether there is a tuning problem in the chanter itself or otherwise with the reed. A redesigned staple with different internal diameter, length, eye openness and distance of insertion into the reed head may solve the problem. The reed head width, the overall reed length and even the form of assembly of the reed may all make a difference in achieving an in-tune chanter. A NEW CHANTER SHOULD BE DEMONSTRATED BY THE MAKER AS BEING IN TUNE AND BEING PLAYABLE AND ACHIEVING THE ESSENTIAL PERFORMANCE REQUIREMENTS OF BEING PLAYABLE WITHOUT GRATING, GROWLING OR JARRING ON ANY NOTE. A chanter going out of tune has to be nursed back into playing order by the piper however, avoid being too hasty in attempting to bring a chanter into tune. Be patient with the reed and learn to understand the differences which playing environments can cause on the chanter and pipes tuning generally.

5. The chanter in its top should not be excessively tight to turn. It may need to be turned slightly in its direction to facilitate fingering. It may need to be adjusted or changed from time to time to suit changed hand or wrist positions adopted for regulator playing. Equally, the chanter top should not be too loose, as the chanter could fall out and the reed could be broken or damage to the chanter itself caused. Pipers playing in varying conditions should regularly check all bindings to avoid accidents in sessions or on stage.

When all of these tasks are done fully the regulators also should be examined from time to time for (a) Tunability, (b) Playability and (c) Overall balance.

IT IS GOOD PIPING MAINTENANCE PRACTICE TO ALWAYS CHECK THE REGULATORS ALONG WITH THE REST OF THE SET PRIOR TO A SESSION OR MORE PARTICULARLY BEFORE A CONCERT OR RECITAL.



