2.11 A Harrington set pitched about B.

by Patrick Lyons and Craig Fischer

Of the small number of Harrington sets extant, two made their way to Australia. The better known of these is the C set owned by Geoff Wooff, which was probably brought to Australia by Harrington himself in the 19th century. A set less well known, outside of Australia, is a B set that formerly belonged to Australian fiddle player Frank Heffernan. His playing was much in demand in the Irish community in Sydney in the 1950s and '60s. Frank never got the set going, perhaps because the original chanter was long gone, and he gave them to box player Kevin Doyle, originally from near Gort, County Galway. Kevin – who, at one stage, shared digs in Dublin with Joe Cooley – was a friend of Johnny Doran so, although unable to play the pipes himself, he was certainly familiar with them and knew the importance of such a rare set. Kevin, who is very much alive and playing, regards that his ownership of the set is on behalf of the Irish music community in Sydney.

The 'B' Harrington Set

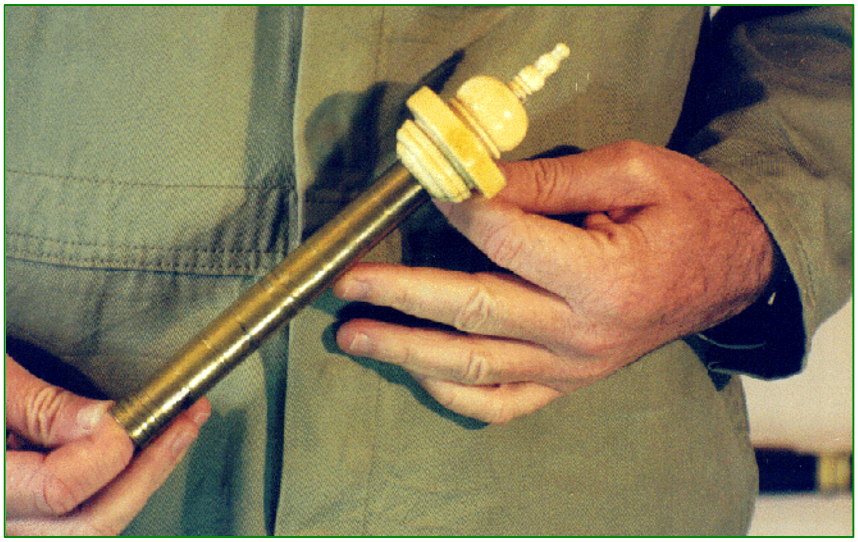
Enter the late Declan Affley (1939-1985). Declan was a Welsh-Irish singer and seaman who came to Sydney in 1960. Possessed of a superb singing voice, Declan quickly became well known in the Sydney folk scene of the time, and soon gave up the sea-life to concentrate on his music. Over the next ten years Declan had picked up fiddle playing and had become a regular player at sessions and dances. In the Sydney sessions he was in great musical company with the likes of Jimmy Philibin (box), Jimmy McBride (fiddle), and Mick Hand (flute). He became interested in playing the pipes, whence Kevin Doyle gave Declan custody of the Harrington set. The pipes became a passion for Declan. To get the set going he had to learn to make reeds, and he did it the hard way. Then he set about learning to play them, and despite being just about the only person in Australia playing union pipes at the time, he made very quick progress. On a visit to Ireland in 1972, he spent many hours with Dan O'Dowd learning the finer points of playing and reed-making. Dan also made a new chanter for the set. During this time Declan also learned what he could from other pipers, and he met and had an all-night session with Willie Clancy. Declan became a very good player on the pipes, accomplished at both chanter and regulators.

Mick McMahon with the pipes

Geoff Wooff restored the set in the early 1980s and replaced the chanter with one in the style of Harrington.

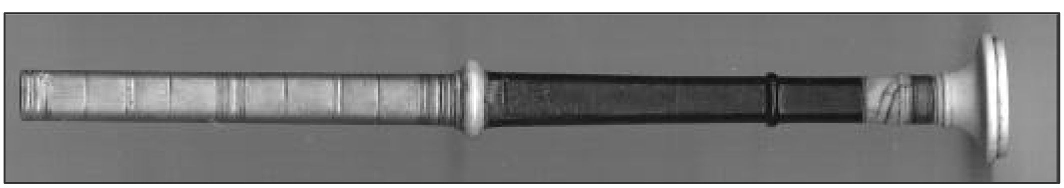
Upon Declan’s sudden death in 1985, the set went back to Kevin Doyle who passed them on to the keeping of singer and piper Mick McMahon.

In 2000 we had a chance to borrow this set and record as many of its details as we could in the space of one week. We found a set which was only partly by Harrington, being the survivor of a litany of repairs – both expert and inexpert, but with still enough of its original character and components to testify to the refined skill of its maker. Analysing and comparing the bore details of this set with those of two other Harrington sets allowed us to shed a little more light on the work of this craftsman.

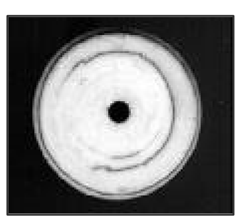


The characteristic Harrington style bass regulator top-cap

The parts that we believe to be original are all three regulators and all three drones. All other parts – the chanter, the main stock and sundry fittings, are replacements. The bass regulator once had an extension, now lost, and the current end cap on this regulator is not original but all of the other ivories are. Even though the signs of use and the passage of time are extensive, portions of the maker's name stamp are still visible on several of the pieces. It is interesting to note with close examination under good light, that there is a mixture of woods used in the original pieces. Some parts are definitely African Blackwood (*Dalbergia M.*) and some are a fine lustrous ebony or similar wood — woods which would fall together under the more vague description of 'Grenadilla'. The sound of the drones as we found them was unique and rich, lacking nothing, and the tone of the bass drone was particularly noteworthy.

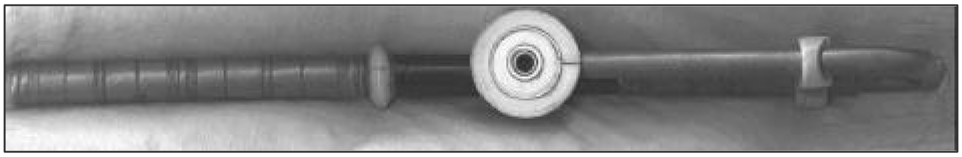


Sliding part of baritone drone



The end cap of the baritone drone

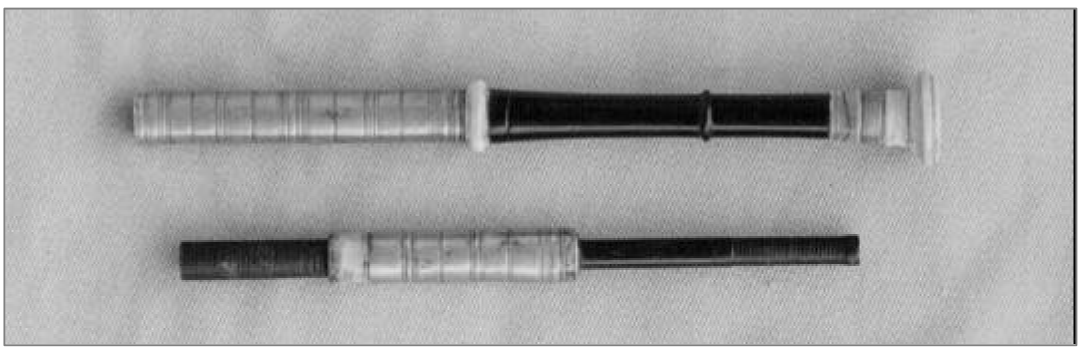
Ivory is much less stable than wood over time. The distortion of this cap is obvious as is cracking due to differential stresses. In the rest of this drone the wood is now much less elliptical and shrunken in cross-section than the ivory which fits over the end of it. This makes a difficult consideration for conservation – the ivory will continue to compress the wood over which it fits whilst at the same time being stressed by it.



Sliding part of bass drone showing the face of the sound-box

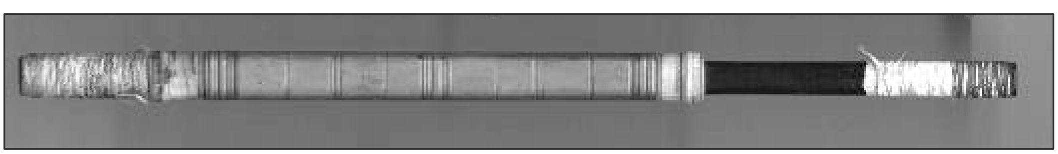
There is little hollowing inside the ivory sound-box – it is mostly an aesthetic flourish.

The drones in detail :



The tenor (smallest) drone

The smaller drones, baritone and tenor, are each made up of the customary two pieces. There is a *standing piece* into which the reed fits, and which fits into the stock, and a *sliding piece* containing a socket into which the reduced tenon end of the stand piece fits and slides, for tuning and tonal adjustments. There is no discernible tapering in the bores.



The standing piece of the baritone drone

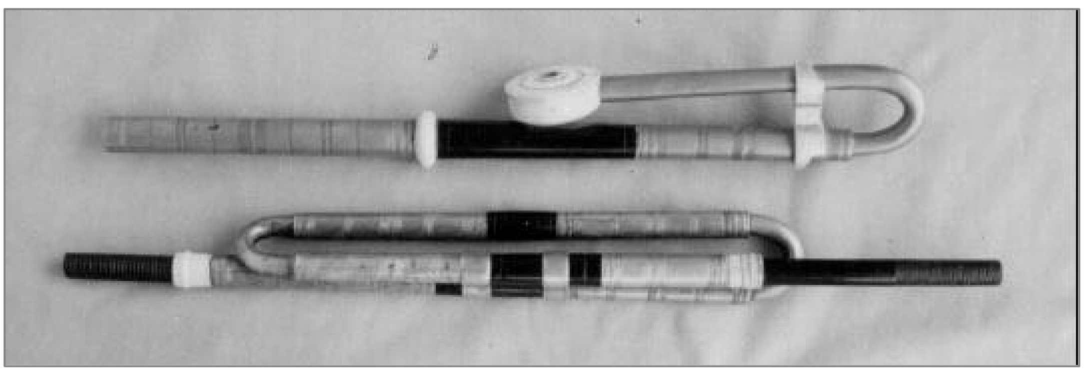
Section:	stand	socket	slide
Length of section	152mm	63mm	117mm
Bore	3.25mm	7.9mm	4.1mm

Schematic layout of tenor drone

Section:	stand	socket	slide
Length of section	312mm	97.5mm	203mm
Bore	4.42mm	11.6mm	5.4mm

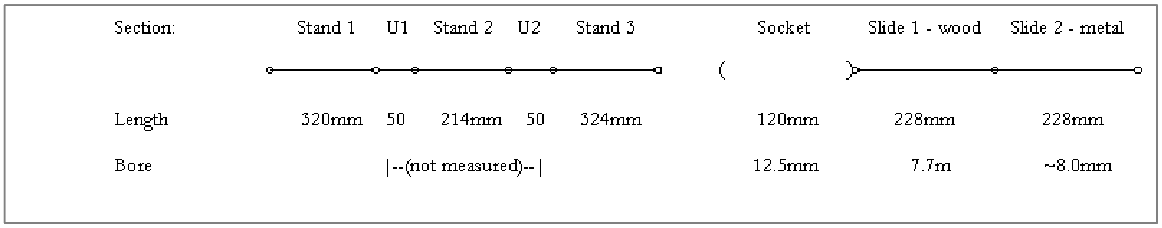
Layout of baritone drone

The bass drone is of the later type with a two-piece slide section. The outstanding length of the slide is reduced by having a second bore section made of tubing which is bent around to point back at the stock. The stand section is made up from the usual three wooden pieces with the aid of two metal U bends.



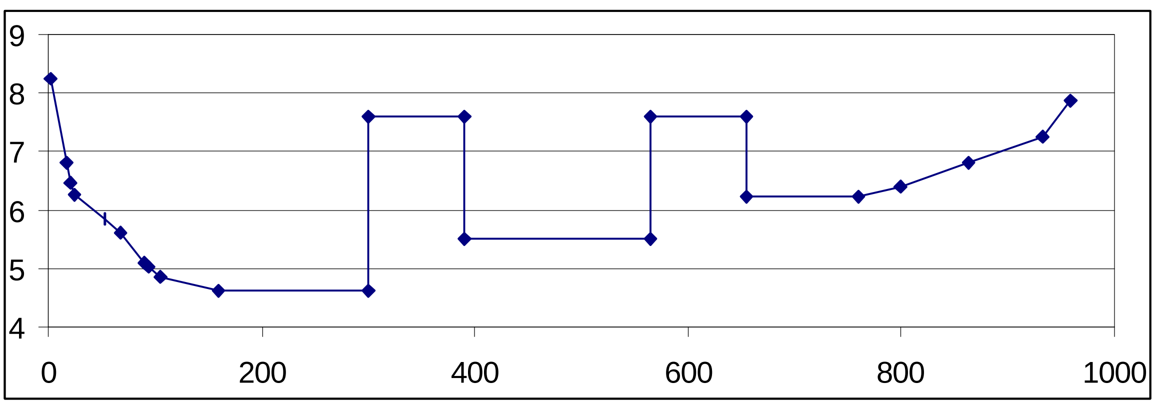
Both parts of the bass drone. The ferrules on the stand part are distinctively long. The innermost (left) U bend in the stand is made to a smaller radius than the outermost one. This helps with the disposition of all the drones and regulators when fitted into the stock.

For unknown reasons, in the latter part of the 19th and early part of the 20th centuries there was a fashion for taking older one-piece bass drone slides and badly cutting and converting them to two-piece recurved slides. The metal used was often a short, cut down piece of trumpet and the results less than satisfactory from both the aesthetic and musical points of view. It failed to achieve what is probably the greatest advantage of the two-piece slide, namely that of allowing the complete length of the piece to be greater than wood alone would easily permit. That, in turn, allowed the total length of the stand to be reduced, and the drone made much more compact as well as acoustically different. A bass drone built to have a one-piece slide is a significantly different design to one with two pieces. This drone and all other known Harrington basses are original in the two-piece form, and the quality of the design and workmanship is first rate.



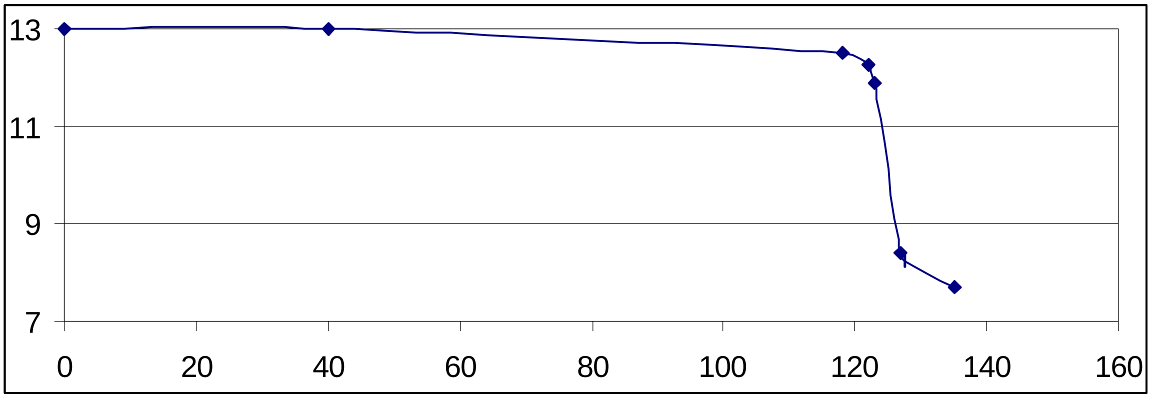
Schematic diagram of the bass drone. The exposed length of tuning tenon on 'stand 3' is equal to the difference between stand 3 and stand 2, 110mm.

Since we didn't dismantle the bass drone, we could not measure the bore of stand part 2 or the bends. The U bends appear typical, with an estimated bore of ~7.6mm. Some other bore diameters have been omitted from the schematic and plotted in the graph instead, because they are not simple cylinders. There is a large amount of tapering evident in the first and third wooden pieces of the stand. It is difficult to know whether this drone was originally made like this or modified at some later date. Until the opportunity arises to examine other bass drones by this maker, we can only report as we now find it – this one is very reliable in operation and sounds unusually smooth. The taper into the bore from the reed end happens at a different rate to the taper out in the third piece suggesting that whoever did taper these pieces had access to a suitable variety of reamers and was most likely a pipe maker.



Overall bore of the bass stand, units are mm. The diameters plotted between 300 and 570mm are estimated from the O.D. of the U bends and on typical values found in other basses. There may also be bore tapering between these sections.

Tapering is also evident in the part of the stand where the larger tuning socket bore progresses into the smaller bore of the wooden part. It is steeper than the tapers in the stand pieces, happening over a shorter distance and being more of an 'edge removal' in nature. It is undoubtedly original since it is common in old drones, and evidently done to reduce acoustic disturbances in a critical area where there would otherwise be a large step in bore diameter. An even greater step in diameter is usually found at the spot where the last part of the stand bore enters into the tuning socket but this is not quite as critical a location. In many other drones there is a slight rounding of the stand exit bore to remove any sharp edge at this point. In this drone with a tapered bore diameter out of the stand, there is less of a step into the tuning socket than normally found.



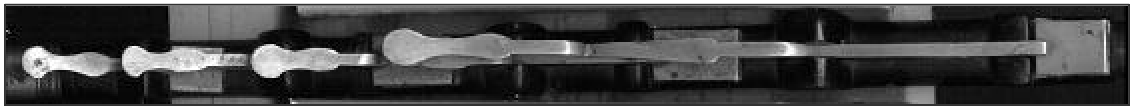
Plot of the tuning socket bore (mm), showing short range smoothing into the bore proper.

There are two aspects of steps in a mostly cylindrical bore to ponder. Firstly there is a small but constant airflow through a drone. Bore features which could give rise to turbulent flow effects capable of affecting the acoustics of the drone are therefore limited to ones with very sharp corners and might well be remedied with simple rounding and short range tapering.

Secondly, every change in bore diameter is a point of sound reflection. The larger or more rapid the change, the greater the amount of reflection. The most important bore step, the largest and the one which governs the base pitch, is of course the point where the drone exit meets free air. But as the number of reflection points inside the bore increases, the relation between them and the waveform produced rapidly becomes more complex. To simplify, we can say to a first approximation that the more sharp steps there are, the brighter will be the sound produced, since at least part of every re-reflection will produce extra 'blips' in the overall waveform.

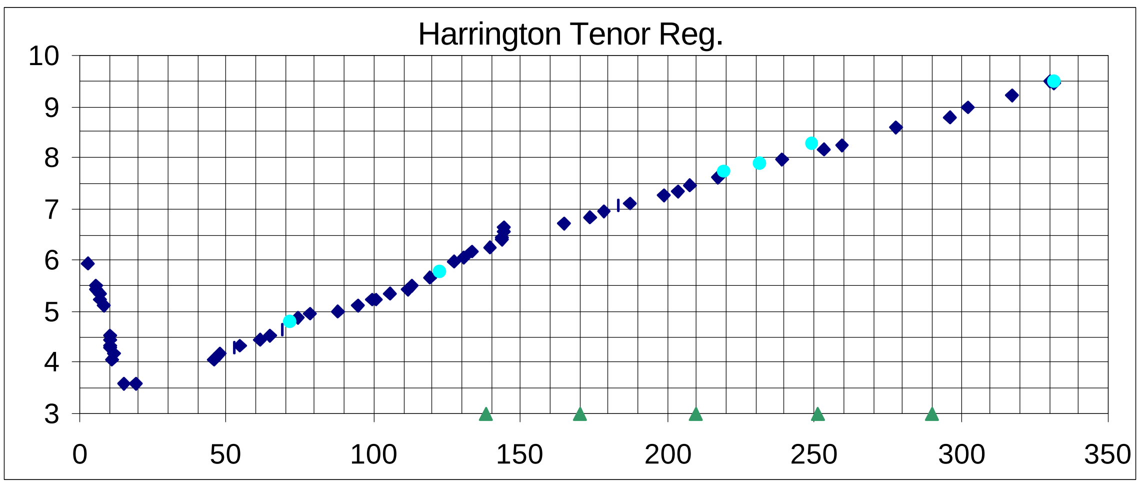
Bass drones on the Irish pipes typically have step changes in diameter between each successive piece in the stand. Some makers are known to have reamed smooth tapers between each of these, but we should bear in mind the situation for tuning slides on other types of pipes and drones, where square shoulders at the steps are desirable, in order to generate a bright and complex tone.

The regulators.

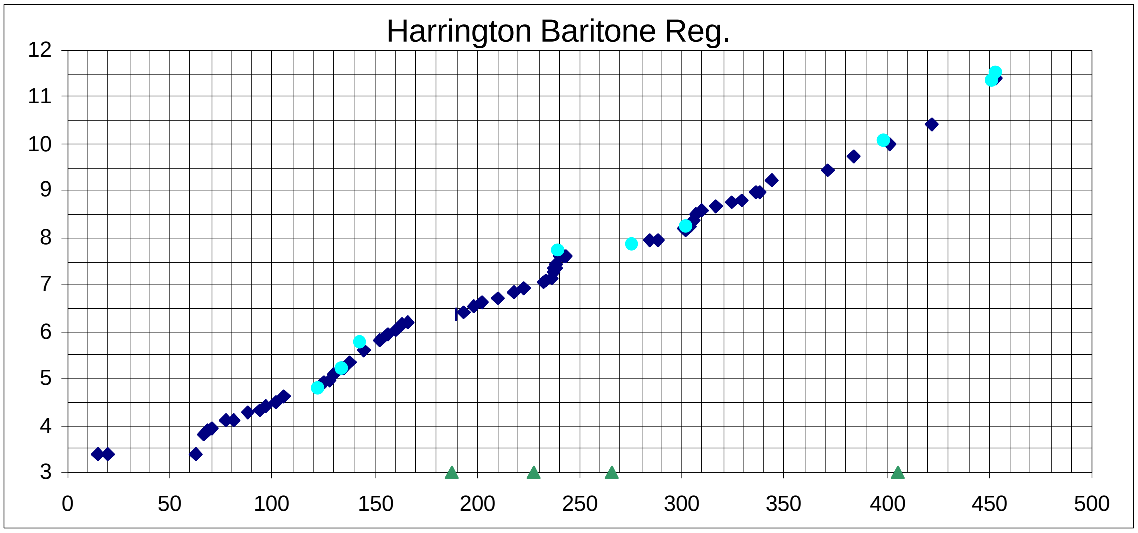


The keywork on the regulators, although well worn, demonstrates Harrington's elegant style

The bores of the regulators were measured with top hat gauges and a small number of T gauges to test for ellipticity. In the following four charts, the main values are plotted in dark blue squares and the T gauge values in light blue circles. Tone hole positions are marked on the length axes with triangles.

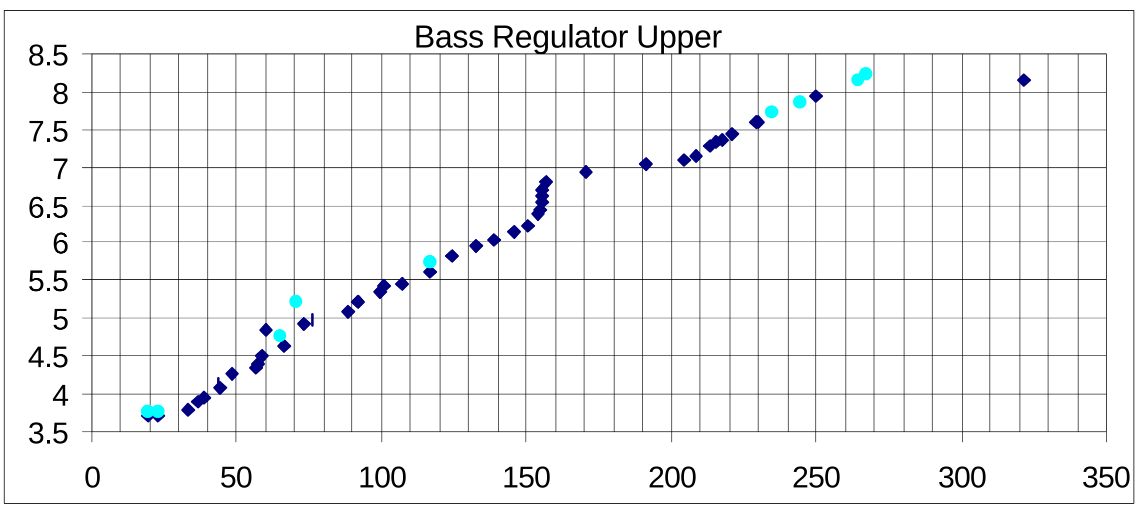


Total length of the tenor regulator is 332mm

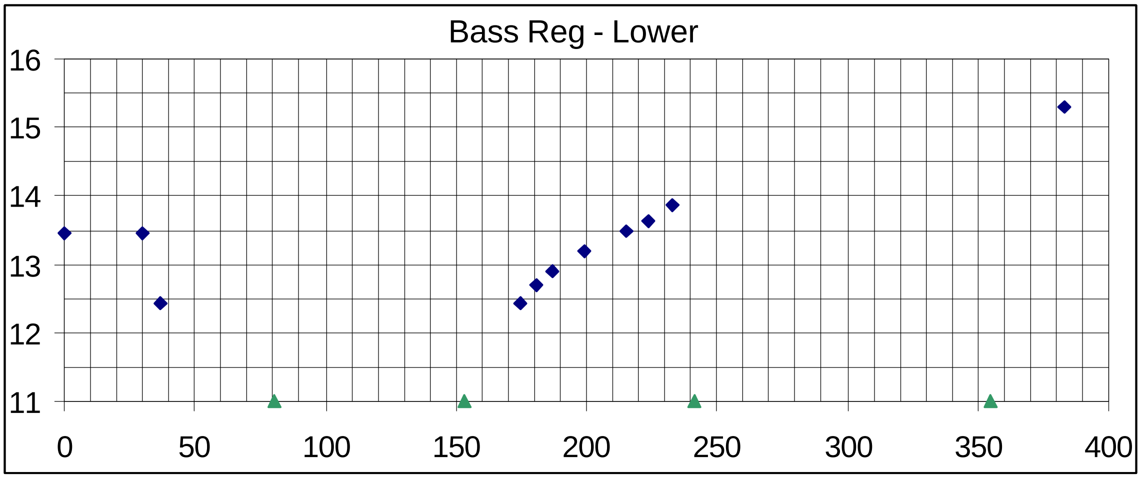


Total length of the baritone regulator is 456mm.

The bass regulator is made of two pieces, upper and lower, which fit together via a simple tenon and socket.



Total length of the bass regulator upper piece is 397mm. The large 'chunk' at around 7mm diameter seems deliberate.



Total length of the bass reg lower piece is 384mm. Nearly half of the bore is cylindrical after a plain socket for the first 37mm into which the tenon on the upper half of the bass regulator fits.

Detail of the baritone regulator cap and pin.

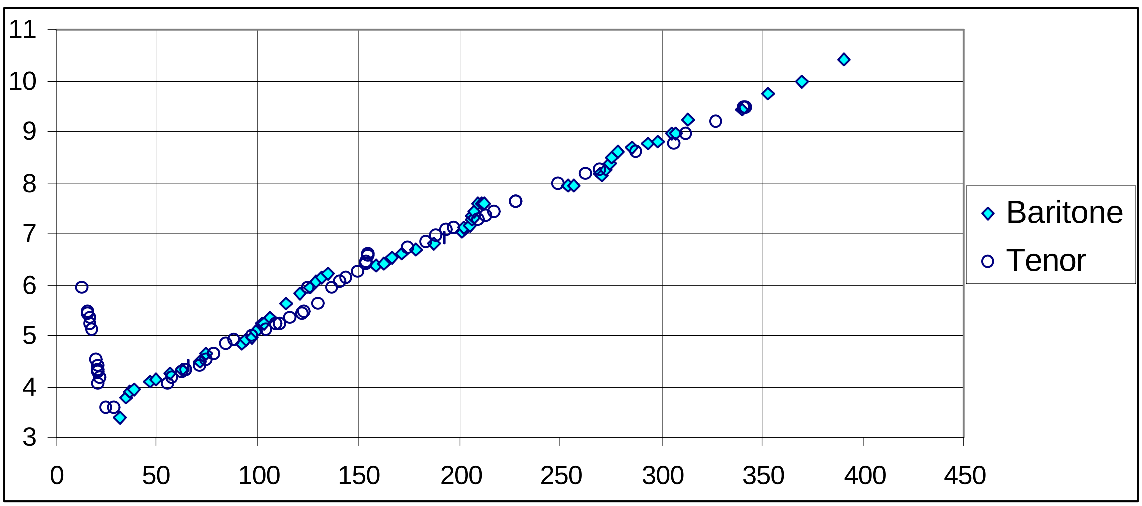
The list of pipes made by Harrington which survive is pitifully brief :

- The best complete set is that belonging to Geoff Woof, pitched in C.
- Kevin Rowsome has a complete set pitched in C# which, like this B set, has had a long life with many and varied repairs.
- The Talty family own a set pitched in B but the chanter is not thought to be by Harrington.
- Barry O'Neill owns a Harrington chanter, which was cut down and re-reamed at some time in the distant past in an attempt to turn it into a wide bore D chanter. The original pitch of this one is not known.

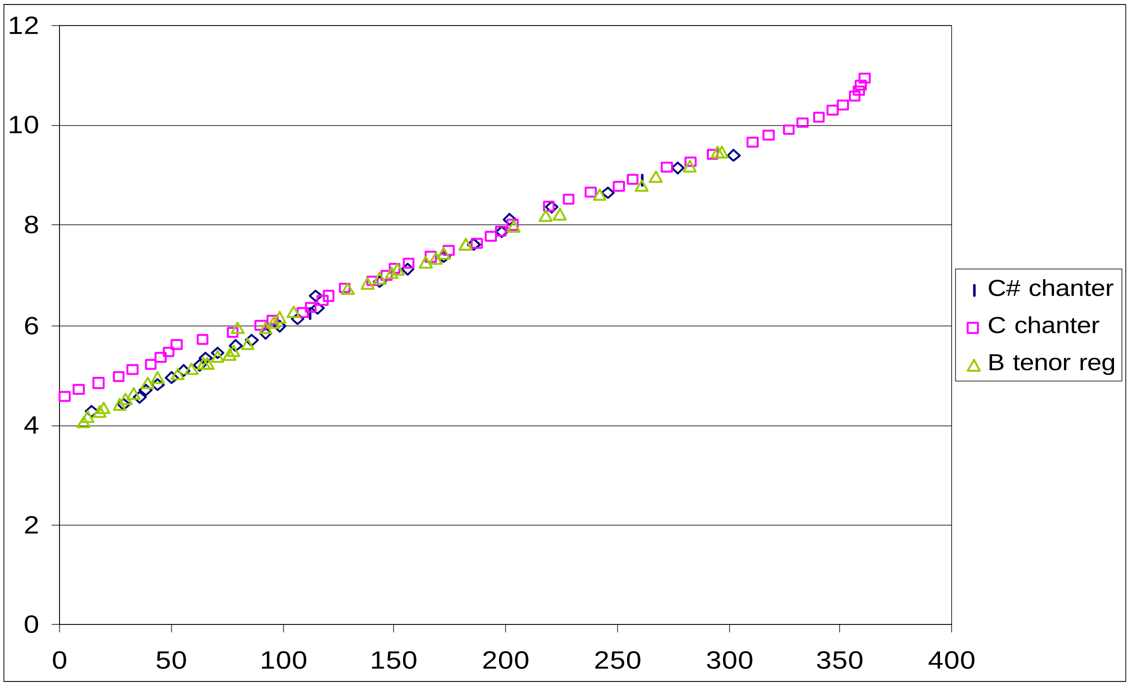
- Ronan Browne has the body of a Harrington set pitched in B, which he uses with other chanters. It has good tonal qualities and is widely admired.
- Patrick D'Arcy recently reported *(ref 1)* a Harrington B set which turned up some time ago, but the whereabouts of this are currently unknown.
- The set detailed here.

which gives a total of five bodies but only two chanters in working order. There are rumours of one or two more.

Kevin Rowsome and Geoff Wooff were kind enough to measure and provide the dimensions of their Harrington chanters, and when these are compared to the bore dimensions of the regulators in this B set there are some interesting details to be gleaned. First of all it is instructive to overlay the graphs of the tenor baritone and bass regulators.



For this plot, the baritone reg. bore diameters have been shifted up 20mm. It shows how both bores are constructed from the same basic tool set with various local changes made to optimise the different notes. In the next chart, the bores of the Harrington C and C# chanters are overlaid with the bore of the tenor regulator from the B set. The C# data has been omitted beyond 300mm since there is considerable damage in that area, and the diameters have been shifted for the plot upwards by 30mm. The C chanter data has been shifted upwards by 50mm. Moving various chanter bore data around on a plot like this is a simple and effective method for comparing them and attempting to discover what tools were used on different instruments.



It seems that the C# chanter and the B regulators have a great deal in common, too much to have been made by different makers or tool sets. The C chanter appears to add in another tool in the first 140mm. Since the provenance of the instruments compared is so diverse, we can reasonably assert that these two main sections show us Harrington's basic reamer set, although more than two tools could have been responsible for the common sections of both chanters and the three regulators. Comparisons like this can also guide us in interpreting and replicating other examples of Harrington's work, as more data becomes available.

The conclusions drawn here are illuminating although they rest on the comparisons of only three pieces from different pipes by the same maker. Sets made by Dennis Harrington are rare, but the more common sets by makers such as Coyne and Egan are no less threatened by wear, dissipation and well-intentioned bad repairs. We think this highlights the need for detailed recording of as many different sets that still exist as possible. It was fascinating for one of us as a maker (Craig) to watch the other as a player (Patrick) having a first opportunity to examine such fine old pipes up close. Doing so allowed both of us to move a little closer to the heart of the musical culture that adopted and refined this type of instrument. As we hope that these considerations show, we cannot afford to lose any more information about the old sets and we have much to gain as makers and players by studying them.

Many thanks to Mick for the loan of the pipes, and to Kevin and Geoff for the data.

Reference. http://www.concentric.net/~pdarcy/page5/page5f.shtml#iaincameron