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Some 'Key' Information

Cents

The octave is divided into 1200 cents. This means that each equal tempered semitone is 100 cents; a minor third is therefore 300 cents, for example. In quarter-tone music, each quarter-tone step is 50 cents and in eighth-tone music, each eighth-tone step is 25 cents. 19-div describes an octave divided into 19 equal steps of 63.16 cents (see below for further clarification).

n-division (or n-div, where 'n' is any number)

An octave division of theoretically equal steps (which in reality, on acoustic instruments, means more-or-less equal steps depending on context).

Trumpet Valves

On a conventional trumpet, the first valve (1V) is 2/12ths of the overall length of tubing and lowers the fundamental by 2 semitones; the second (2V) is 1/12th and lowers the fundamental by 1 semitone and the third (3V) is 3/12ths and lowers the fundamental by 3 semitones. There is a pattern of inaccuracy in all trumpets which is compensated for by using the valve-slide triggers attached to 1V and 3V (which are abbreviated as 1VS and 3VS).

Context

The author's hope that, in terms of playing both standard and microtonal pitches, the materials on this website will be helpful to trumpeters at any stage of their progress.

This is because a wide survey of fingerings has been made which has deliberately sought out non-standard solutions.

For players already experienced in the performance of quarter-tones (24-div) and who perhaps own a quarter-tone trumpet, it is hoped that the extensive microtonal structuring of the *24 Microtonal Studies* will offer welcome new challenges. The eighth-tone (48-div) and 19-div sections provide more ambitious continuation work for advanced players and potentially exciting new sonic possibilities for composers.

This website is also very much written for composers who wish to increase their understanding of the trumpet as a microtonal instrument.

It is hoped that its contents will:

- **establish and develop new technical standards in microtonal trumpet playing**
- **stimulate the creation of new microtonal music for the trumpet**
- **raise discussion about the continuing development of the instrument (and, potentially, other brass instruments)**
- **generate positive aspirations in all the above areas**

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Background

This study is the result of a collaboration, over a period of 6 years, between trumpeter Stephen Altoft and composer Donald Bousted. This began at the University of Huddersfield in 2000 but gained a new momentum when, for the academic year 2001-2, both were appointed by the Centre for New Instruments (CNMI) at London Guildhall University, Stephen as consultant for the brass project, Donald as composer-in-residence.

CNMI had developed, with former student and now freelance brass technician David Cowie, a trumpet with two set-ups: one for 12- and 24-div (standard tuning and quarter-tones) and one for 19-div. Stephen learnt to play this instrument and commented on its design while Donald started to write pieces for it. In fact, the first 11 of the *24 Microtonal Studies* were written at this time as was the multimedia piece *Slide* (for 24-div trumpet, text, and DVD written in collaboration with visual artist Gary O'Connor) and the first movement of *Verses* which provided first repertoire for 19-div trumpet (plus percussion). The influence of the CNMI project on the one described here was, therefore, fundamental.

It is important to acknowledge that CNMI was responsible for establishing many approaches which became an intrinsic part of The Microtonal Trumpet project. For example, CNMI had already established a preference for faux, or enharmonic notation for 19-div and this has been continued by the current authors.

CNMI directors Patrick Ozzard-Low and Lewis Jones remain highly committed to the notion of making and modifying instruments for microtonal music and their dedication to this cause has been, and continues to be, deeply inspirational.

Regarding the CNMI trumpet, however, there were a number of specific problems which were apparent in 2002 and which have since been unresolved. One was the simple fact that this prototype modified student model instrument was not of a high enough build quality to be used professionally and the other was that CNMI were using the instrument to test an electrically driven valve for which an effective technology is still yet to materialize. It was with the view to finding a workable, professionally viable but also reasonably priced, solution that the present authors started to make their own investigations, a quest which eventually led to the construction of the two, rotary valve mechanisms which are described on this site.

The success of these conversion kits led rapidly to a second phase of work between Stephen and Donald and the vast majority of the work documented on this website has resulted from their dogged and practical-minded collaboration since 2002: the trialling of the many fingerings and other technical considerations which are, or could be, relevant to the microtonal trumpet; the formation of fingering charts; the assessment of outcomes, particularly in relation to the rehearsal and performance of the *24 Microtonal Studies* (including the use of various technologies to verify results) and the development of a range of pedagogical approaches (including those for the standard, 3-valve trumpet).

Dissemination

As well as developing the kind of pedagogical approaches which have resulted in the 'manual' type endeavor which has become this website, there has also been a conscious effort to create interest around the project and encourage the composition of new music in a wide range of styles. This began at CNMI in 2002 with an open call for works for the CNMI trumpet, a number of which were later played by Bruce Nockles at CNMI's Summer Show Performance Day.

In 2004, Stephen and Donald toured a lecture-demonstration (and a recital in some venues) of the project to a number of UK universities and music colleges in an attempt to encourage

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young and established composers to contribute to the project. This lecture-demonstration has since been given elsewhere in the UK and also in Germany and, following the launch of this site, the authors are keen to have the opportunity to present an up-to-date demonstration of their work by invitation (see Lectures).

Additionally, Stephen has begun to commission short pieces in 19-div, called *The Yasser Collection* which aims to give composers the opportunity to 'try out' 19-div in the form of a two-page composition. A considerable amount of new repertoire has now materialized and all of this is listed in the Repertoire List. Composers who would like to discuss the possibility of contributing to *The Yasser Collection* or other projects should email us at: yasser@microtonaltrumpet.com

There was, of course, a considerable amount of existing repertoire for microtonal trumpet before we started this project and we have attempted to draw as much of this together as possible in the Repertoire List. This most certainly isn't comprehensive (although we have written very widely to composers, performers and music information centres internationally in search of this information): we would welcome additions from composers themselves or their publishers. Please email us at: rep@microtonaltrumpet.com

Precedent

There is one precedent to this study for the trumpet which is Don Ellis's *Quarter-Tones: a Text with Musical Examples, Exercises and Etudes*. Don Ellis did much to encourage and inspire microtonal trumpet playing through his commissioning of a 4-valve quarter-tone trumpet from the American brass maker Holton and, at one time, the complete trumpet section of his jazz orchestra (The Don Ellis Orchestra) used the instrument. His work did much to establish the quarter-tone trumpet in jazz, a tradition which continues today. *Quarter-Tones*, however, is now out of print and our enquiries suggest that it is unlikely to be reprinted in the near future. This is unfortunate because, whilst there has been a noticeable increase in scores which require microtones on the trumpet there is a conspicuous lack of materials designed to encourage their accurate performance. We hope, by means of this website, to redress this issue to some degree.

Why 19-div?

One point needs to be addressed because it has already been asked by many people who have encountered the project up to now: why 19-div? While quarter-tones are commonly used and eighth-tones are increasingly encountered more frequently, 19 seems to be rather an arbitrary number. Why not 15, 18 (third-tones) or any other number?

Well, why not indeed! It would be very exciting and valuable to explore these other divisions. However, the task of learning a number of divisions quickly or simultaneously is an unrealistic goal for the performer given the necessity to train the ear and develop reading and technical fluency.

The re-learning experience for the player is so fundamental that at times it feels like starting the instrument again.

So for the time being, it seems sensible to concentrate on only a few tunings and to consider them thoroughly.

In fact, there are several good reasons to concentrate on 19-div rather than other tunings. As it was explained above, the authors didn't so much choose 19-div as have it imposed upon them as an established objective of CNMI (CNMI had, before the trumpet, already de-

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signed and built 2, 19-div tenor recorders). But the reason for CNMI's choice was far from arbitrary; it was because this tuning system has an ancient history (uniquely shared with 31-div, for which there is also significant microtonal repertoire) in that it developed from a species of meantone temperament expanded around a cycle of meantone fifths until very near closure occurs. (If that seems confusing, don't worry – all is explained in due course.)

For this reason we will introduce 19-div in the context of this historical progression. It is worth noting, however, that from a general tuning perspective, 19-div adheres more closely to certain important just intervals than 12-div equal temperament. It also suits the brass sound very well as we hope you will agree and discover for yourself.

Other divisions do offer different strengths and opportunities of their own. For those inclined to take a different path, the instructions given for the conversion kits can easily be adapted to other divisions.

The authors very much hope that trumpet players and composers enjoy exploring and developing the modest resources on this site. We would sincerely like to hear your feedback and welcome contributions, views, photographs etc.. Above all, good luck – we hope you will have as much pleasure from reading about our project as we have had compiling it!

Stephen Altoft and Donald Bousted
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