

The Aubrapan: Revival of a lost invention

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Abstract

The Aubrapan is a new design of the melody (or soprano) pan developed in 1978 by Guyanese pan maker and panist Aubrey Bryan in the United Kingdom. In the Aubrapan the higher frequency notes are placed nearest to the rim of the pan in contrast to the center of the pan where most high notes are generally located. The lower octaves are placed directly opposite each other in order to facilitate a pendulum-like action of the arms – these ascend in whole tones. This concept facilitates easier and rapid playing of the chromatic scale in single and double note form. In this paper we describe the development of the Aubrapan and attempt to discover why the Aubrapan has not yet found a place among the steelpan family. To answer this and other questions, the experiences of the Aubrapan’s inventor will be noted and a comparison of the Aubrapan will be made with the conventional Trinidad and Tobago 4ths and 5ths soprano pan.

Introduction

The Aubrapan was created in 1978 and named after its inventor Aubrey Bryan who spent a year experimenting with various note layouts before finally choosing the layout in Figure 1. During the late 1970’s to middle 1980’s the Aubrapan was exhibited to several Heads of Music Departments in London schools. The pan has been played by leading panists Roy “Pele” Geddes and Godfrey Roberts and both thought highly of the invention. Frank Rollock, a former arranger of the London All Stars Steel Orchestra played the Aubrapan and was very excited about the invention, whilst a group of German panists from the Berlin Tin-Pan Alley Steel Orchestra played the instrument and had nothing but praise for it. The Aubrapan was also played by master pan-tuner Roland Harrygin and his assistants during a tour of the United Kingdom by the Casablanca Steel Orchestra. They were fascinated by this pan and praised Aubrey for his original work. Moreover, Aubrey was invited by the Crafts Council of England to exhibit his Aubrapan from June to August 1986.

The Aubrapan, in spite of receiving much accolade, was never promoted as an alternative design or a complement to the soprano family of steelpan. The only record of this instrument can be found in Bryan [1] and Grant [2]. There are two questions of interest. The first is why did the Aubrapan not find its place in the steelpan family and was the design of the Aubrapan flawed thus disqualifying it as an alternative. The first question will be answered in part by

noting the experiences of the Aubrapan’s inventor whilst an attempt to answer the second question will be made by comparing the Aubrapan to the traditional 4ths and 5ths Trinidad Tenor pan. However, before answering these questions a brief introduction on the steelpan is essential.

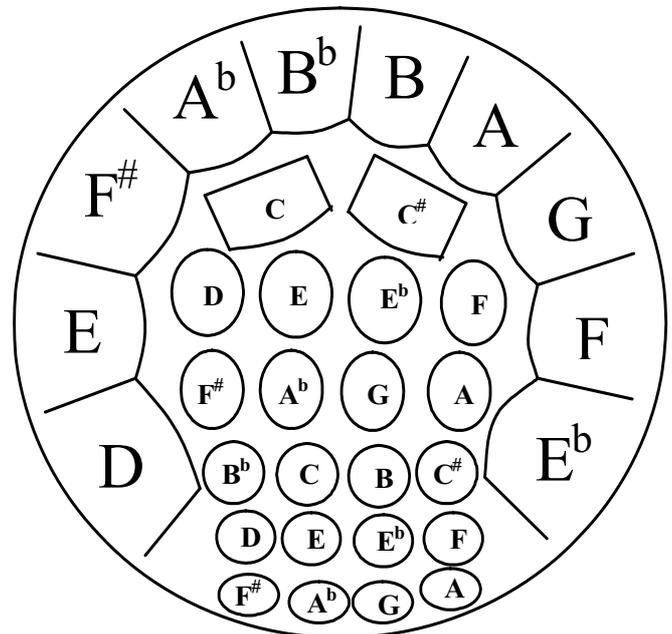


Figure 1: The Aubrapan note pattern

The Steelpan

The *steelpan* also known as the *Caribbean steel drum* or simply the *pan* is a tuned percussion instrument that originated in Trinidad and Tobago around the time of World War II. The music from this instrument has captivated millions worldwide such that there are steelbands all over Europe with Switzerland in 2005 accounting for at least 20 per cent of the world’s steelbands [3]. The Dutch police force has a steelband [4], so does the Nigerian Army [5] and the United States Navy [6]. There are steelbands in Japan, Australia, Kuwait, South Africa and over 300 steelbands in the United States and undoubtedly, the instrument is also popular in Trinidad and Tobago and throughout the Caribbean. The instrument initially evolved from several years of experimentation with various items, which included garbage pan tops, grease barrels, biscuit pans, paint tins as well as Oxford geometry pans. During World War II, the American Naval bases and the expanding oil industry in Trinidad provided a new raw material for trial – the 55-gallon (250 Litres) oil drum. The tops of these drums were larger making it possible to accommodate more notes. Today

the steelpan, efforts to standardise the note layout and shape of the instrument can only suffocate innovation. The process of evolution and refinement must take place before the instrument can attain any state of perfection, therefore innovation in all forms should be encouraged and rewarded.

After almost 30 years the Aubrapan has been removed from its dusty abode and revived. Figure 4 is a photograph of the first Aubrapan crafted by Aubrey Bryan. The next step is a qualitative comparison of the Aubrapan with the Trinidad and Tobago 4th's and 5th's soprano pan.

The Aubrapan vs the 4th's and 5th's Soprano pan

The Trinidad and Tobago 4th's and 5th's soprano pan is widely used and it's layout may long continue to be the de facto choice among tuners and panists. Hence, it is only appropriate to compare the Aubrapan to the 4th's and 5th's. Table 1 lists and compares some characteristics of each instrument.

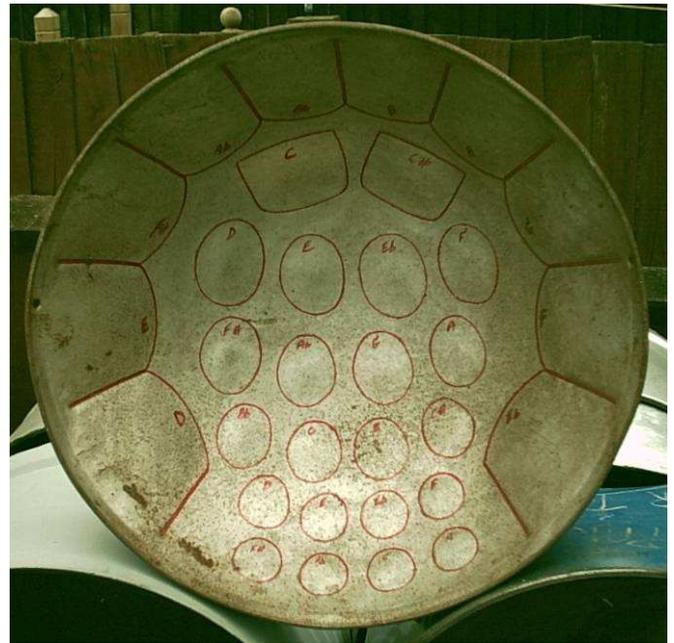


Figure 4: The First Aubrapan

Table 1: Comparison of Aubrapan with Trinidad and Tobago 4th's and 5th's Soprano pan

Trinidad 4 th 's and 5 th 's Soprano pan	Aubrapan
Both pans are currently produced by traditional handcrafting	
Usually has 29 notes but some makers have made soprano pans on larger platforms that can accommodate as many as 37 notes which span a 2 octave range	Currently has 32 notes
Note arrangement is based on the chromatic scale but the notes are arranged using the circle of fifths (or circle of fourths). The frequency ratio between notes in the anticlockwise direction is a perfect fifth (3:2) and the frequency ratio between adjacent notes in the clockwise direction is a perfect fourth (4:3). The notes are arranged into three rings (outer, middle and inner) with a musical range from C4 to E6. Most pans makers adopt the 4 th 's and 5 th 's note arrangement.	Note arrangement is also based on the chromatic scale but adjacent notes have a whole tone difference in frequency. Only other notes arranged in a semi-ring with inner notes in vertical lines. Musical range from C4 to A6. The Aubrapan is one of the first pans to adopt a note arrangement in which some of the notes are arranged linearly.
Each note is surrounded by notes with which it has a musical relationship. For instance, C4 on the outer ring is surrounded by notes F4, G4 and C5. The ratios C5:C4, G4:C4 and F4:C4 i.e. (2:1), (3:2) and (4:3) in order of merit of pleasantness to the human ear. When a single note is struck, there is sympathetic vibrations in neighbouring notes that are harmonically related. This modal coupling is in part responsible for the unique sound of the pan. Dissonant notes are far apart.	Notes in the Aubrapan are not in close proximity to notes with which there is consonance. Consider the location of middle C (rectangular note) in relation to its fourth, fifth and octave. Since notes that share consonant musical relationships are not close, modal coupling may be weak.
Shallow grooving around notes	Grooving is deeper than in 4 th 's and 5 th 's pan.
Layout makes the playing of harmonic dyads easy as notes that are musically related are adjacent. The playing of chord progressions is also easily facilitated.	Layout lends itself for the easy playing of musical scales.
Most makers of 4 th 's and 5 th 's pans usually tune three modes in the outer notes, one or two in the middle notes and one in each inner note. The modes in each note are usually tuned such that they are harmonically related. For instance, the pan maker will tune each outer note to have the first three modes with natural frequencies that are in the ratio 1:2:3. So middle C will have its first three frequencies approximately at 262Hz, 524Hz and 786Hz. Some tuners claim to tune a fourth mode. Higher modes are usually non-harmonic but contribute to the overall timbre of the instrument.	At present only the fundamental mode is believed to be tuned in each note of the Aubrapan.

Conclusion

The initial shelving of the Aubrapan can be attributed to the discouragement of its inventor after several efforts to promote his instrument proved unsuccessful. The comparison of the Aubrapan with the Trinidad 4th's and 5th's highlighted the strengths and weaknesses of the Aubrapan. However, no definitive conclusions can be made on the performance of the instrument from this comparison. The answer to whether or not the Aubrapan is fit to be promoted as an addition to the steelpan ensemble requires further investigation. At this stage, a mere qualitative comparison is insufficient. The next step will consider the acoustics of the Aubrapan.

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