A Steel Drum Project

I guess truth be known, I am a person with too many hobbies, a kind of jack of all trades hobby related. Although I like to think I have mastered a few, again the truth is that that they have mainly mastered me…or at least taught me a thing or two as we go along, which can work out ok, as I like to learn.

So my hobbies are Astronomy where I’ve built my own observatory, designed the electronics, written the control programs, dealt with frustrating night time weather and occasionally taken a picture of a galaxy. Then there’s the bee keeping, wood turning on my lathe, building a Baroque Lute, I’d better stop there.

My latest project came into being because having lots of spare time, I decide to Join Maggs Atwell’s Silver Seas Steel Pan Band. I play (!) a steel drum and occasionally I manage to play in tune and in time with fellow band members. It’s great fun and we rehearse at St Catwg’s on Fridays, 6 til 7 pm. New members are welcome… In order to practice in between the Friday sessions, I had the idea of building a drum simulator. It’s a prototype, evolving as it goes along.

A close up of a drum

AI-generated content may be incorrect.The picture here is the real steel drum that I play and chose to simulate. The simulator idea came to me as a low cost option for creating a drum which also combined some of my other hobbies such as electronics (where I can blow up almost any electrical circuit) and programming (where I suppose I did have some formal training about 50 years ago).

You can see it has ten notes on its sides and seven in the bottom. As I’m not much good at metalwork (my former 11 year old pupils in an Oxfordshire school which shall remain nameless, will attest to this…), I decided to make the simulator out of plywood. A crazy idea I hear you say, as quite rightly if you hit a piece of plywood with a drumstick, it makes a non-musical dull thud.

So this is where the electronics and computer programming bit comes in. For those who are into the programming / electronics, I’ve included a brief ‘techy appendix’ at the end which explains the design and computing process. Before I describe how the electronics bit works, I’ll explain a A wood pieces on a table

AI-generated content may be incorrect.bit about the wooden ‘drum’ simulator construction. I needed the simulator to have the notes approximately the same size as the real drum and also to be in the same general position, so when I practice a tune I can hit all the right notes….the Morecambe & Wise sketch always comes back to me when I’m practicing….So here is what I built from plywood, it’s upside down, in the early stages of construction in my garage. I traced around the panels of the real drum with tracing paper, transferred that shape onto the plywood and cut it out on a bandsaw. Each of the note panels (there are ten as on the original drum), are held in place with a mild steel right angle bracket bent to shape. I was amazed that it worked so well. All the tins/ jars etc in the pic are used as weights to hold the panels roughly in place to facilitate positioning, before screwing down.

A white square with a circular design on it

AI-generated content may be incorrect.As usual I didn’t think things through before taking the plunge, so as I was doing the woodwork, I was frantically thinking about how I’d make the electrical connections I’d need from the (wooden) drum pads to the microcontroller which would produce the sounds. I am sure you will know that wood is not known for its ability to conduct electricity (but if the voltage is high enough….). So anyway, I came up with a plan which involved bacofoil and glue (more later). The next picture shows the drum evolving and the seven notes for the bottom of the drum are trial fitted. Just so you can really understand that I was a great student of Heath Robinson, the notes at the bottom of the drum rest on a base which I somehow had to attach to the side notes, so I used….string – garden twine seemed to work nicely and will probably last at least a week or so…..Perhaps my woodworking skills are on a par with the metalwork… fixed some sides to the drum which were some old planks I had left over from an old astronomy observatory and then at least I could sit the drum on a flat surface whilst I thought about electronics…..