

**B**ack in 1972 my friend Roger Hargraves rang me up and told me about a new LP he had just picked up from the import record shop in Sydney by a band from Ireland called Planxty. Listening to that recording the first time changed the whole way I thought about how music could be played and especially how folk songs and dance tunes could be accompanied.



Planxty had two members who played double strung instruments. Andy Irvine played mandolin and mandola while Donal Lunny played bouzouki and it was the sound of these instruments intertwining which was so captivating as much as anything else.

One thing led to another and eventually I had a go at building a bouzouki, armed with little else than a photo on a Planxty record cover and Irving Sloan's book on building classical guitars. I discovered that the process of building that first instrument was really as much if not more fun than actually playing it, so I made another, then a guitar, a mandolin and then ended up working with Jim Williams for a couple of years whose guitar building methodology still permeates my approach to building musical instruments.

Over the years the flat-backed Irish bouzouki, the cittern and octave mandolin have infiltrated themselves across the whole range of popular music. There can scarcely be an Irish or Scottish folk band without one and they regularly can be heard on lots of country and pop recordings as an extra tonal colour.

There is little standardization in shape, string length or tuning and while this is part of the instrument's charm it might have something to do with why so little has been written about them. This book tries to cover as much ground as possible, providing information and instructions on building two specific instruments of the bouzouki/cittern/octave mandolin family.

It will cover building both a flat-top/pin bridge long scale - 660mm (26") - bouzouki and an arch-top/floating bridge short scale - 560mm (22") - scale cittern, with enough theoretical background to enable the builder to expand on that to be able to create a range of double strung instruments. In effect, it will be a cookbook, with basic techniques that will be able to be 'mixed and matched'

There will, I hope, be enough for the first-time instrument maker to build a creditable instrument, as well as sufficient detail for the experienced guitar or mandolin maker to be able to branch out in a different direction.

The book pre-supposes some knowledge of timber and the use of woodworking tools. I am not going to tell you how to sharpen a chisel or set a scraper blade. Nor do I go into detail about timber milling and why you should use quarter sawn timber. There are enough specialist 'tone-wood' suppliers for the purchaser to be fairly certain of getting their raw material supplied in the right way.

The methods, tools and jigs are fairly 'low-tech', but do use a number of both stationary and hand-held power tools in addition to common woodworking and specialist lutherie tools. These are detailed in the section on tools and materials. This is not a book where every process is expected to be done only with handtools in some purist, romantic way, but neither are you expected to own a CNC router.

### The evolution of a family of instruments

The original citterns had two periods of popularity, firstly in Elizabethan times as instruments of popular music. They were double or triple strung with wire strings, usually with a re-entrant tuning (like a ukulele or 5 string banjo) because the wire making technologies of the day didn't allow wound strings. Anthony Baines, in *European & American Musical Instruments*, suggests that they were a "cheerful strumming or accompanying instrument on which the strings seldom break and are able to keep their tuning pretty well when the instrument is idle." Scale length was usually between 46-54cm (18-21"). They had a couple of unusual features in that the body often got thinner towards the end of the instrument where the strings were attached, and the cross-section of the neck was very asymmetrical, being much thicker on the treble side.



*A modern reproduction of a 16th century Italian cittern*

By the end of the 17th century they were out of fashion, except in Germany where they continued as a folk instrument, the waldzither. The middle of the 18th century saw the cittern's re-emergence as a much more robust instrument, which became known as the English guitar. They were briefly fashionable as a parlour instrument in England and France but survived in Portugal, becoming the guitarra, in which form they are an integral part of fado music. Whether the English guitar descended from some ancient Portuguese instrument, or English instruments travelled to Portugal is still debated.



*A Turkish balama saz with 17 frets to the octave*

Meanwhile at the other end of Europe and south-western Asia there developed another group of long-necked instruments which evolved into the modern Turkish baglama saz, the Bulgarian tamburitza and several other variants. The saz typically has the body carved from a single piece of wood, with a long neck with three courses of strings tuned g d a, sometimes with three wire strings per course including an octave string, very lightly strung and up to 17 frets to the octave. (No, I don't understand that either, but I have seen several.)



*A Greek four-course bouzouki*

Pre-20th century Greek bouzoukis were similarly built instruments, until around 100 years ago Greek makers were inspired by the Italian system of staved, bowl back mandolin and mandola construction (which of course goes back to lute building) and they added fixed metal frets instead of the tied on gut of the baglama saz. A tuning of Dad, or equivalent became the most common. A fourth course of strings was added in the 1950s (apparently by Manis Hiotis, a Greek tenor banjo player) and a CFad tuning became the norm. This is the top four strings of a guitar tuned down two semitones.

As is the nature of such things, musical tourists started bringing Greek bouzoukis back home from holidays and Irish musicians started experimenting with them. Andy Irvine remembers a session in Galway in 1966 where Johnny Moynihan, with whom Andy played in Sweeney's Men, with a Greek bouzouki and joining in. Andy remembers the instrument as being a horrible, out of tune thing and Johnny was told strongly to go somewhere else with it. Shortly afterwards Moynihan purchased from John Pearse a flat backed bouzouki that had been commissioned from luthier John Bailey, which had ended up being flat-backed because Bailey (according to Pearse) didn't know how to make a bowl back.

Moynihan strung the instrument with unison strings and used a GDad tuning which he and Irvine had been using on mandolins. Andy ended up with a Greek instrument himself and when Donal Lunny visited his flat a year or so later Donal ended up going home with it after playing it for some hours upside down. He re-strung it left-handed with unison strings and adopted the GDad tuning as well.

As anyone who has ever played one knows, the bowl back of the Greek instrument makes it quite hard to play standing up, and in 1970 Donal commissioned luthier Peter Abnett to make another flat backed version which has become the best known instrument of its type.

This brief history is mostly from Andy's recollections, along with a letter John Pearse wrote to the *American Lutherie* following an article I had written on the Irish bouzouki, and various interviews that have been published over the years. There is doubtless some detail lost in the mists of time, but in any case, Johnny Moynihan, John Pearse, Donal Lunny and Andy Irvine have all had a vital role in the instrument's development.

In 1973 English luthier Stefan Sobell created a five course instrument which he dubbed a cittern. As I mentioned previously, the original cittern was first popular in Elizabethan times, and then had a revival in the late eighteenth century from whence it evolved into the Portuguese guitarra, a short scale 6 course instrument with a floating bridge used as an accompaniment for singing. Sobell's design owes a lot to the Portuguese instrument combined with a Martin arch-top guitar from the '30s so he decided to call his creations a cittern. These modern citterns are usually a shorter scale - 530-610mm (21-24") - than bouzoukis and a range of tunings are commonly used although commonly utilising 5ths between courses.



*Johnny Moynihan around 1967, with what may well be the very first Irish bouzouki*

Greek bouzoukis typically have a scale length of 660-685mm (26-27"), which makes for a big stretch for those playing melody lines in lower positions, and so shorter scale versions of the Irish bouzouki have been built as well, usually in the 530-560mm (21-22") range, similar to a tenor banjo. These are usually known as octave mandolins. Also common in European mandolin orchestras is the octave mandola, tuned an octave below a mandolin, but with a short scale, often around 400mm (16"). This is the same scale length as the Gibson mandola usually tuned CGda'. Several of the American mandolin manufacturers also made octave mandolin style instruments in addition to the more common mandolin orchestra instruments of mandolin, mandola and mando-cello, but they were never very popular although quite a number of mando-cellos have ended up being recycled with octave mandolin/bouzouki tuning.

## Nomenclature

There is ongoing discussion about what to call this family of instruments, but there now seems to be a slowly forming consensus that long scale (24"/600mm and up) four course instruments are 'bouzoukis', short scale (21 -22"/530-560mm) four course instruments are 'octave mandolins' and short scale five course models are 'citterns'. A long scale five course gets called whatever the maker wants to call it, though 'five course bouzouki' or 'long scale cittern' is common.

One small complication is that in Europe, 'octave mandolins' are often referred to as 'octave mandolas', and what is called a mandola on the US is referred to as a 'tenor mandola' in Europe.

## Tunings

Along with the range of scale lengths and numbers of strings, there are also a bewildering number of tunings used. For four course instruments the most common are GDad and GDae (an octave down from a mandolin) with ADad or AEae also used. With five course instruments GDaea' or GDadg are frequently used along with others like GDgdg. These five course tunings add the extra course as higher strings, but there is also the approach of adding a lower fifth course tuned to D or even C. Adding a string at these lower pitches requires a longer scale length, at least 610mm (24") for reasons of string gauge and tension.

The next chapter on designing a bouzouki or cittern will explore string tensions and finding the appropriate strings for a particular tuning.

## Measurements in this book

While most of the world uses the metric system these days, America is still resolutely fixed to the old Imperial system of feet and inches. I tend to use both, often for measuring different things. Most of the measurements will be in metric because it is just simpler to use most of the time, but there are things that I have always thought of in Imperial for one reason or another and the Imperial measurement will be there for a reason. Scale lengths I think of in inches, but metric equivalents will be given.

In some areas, such as building truss-rods for the instruments neck, I use 3/16" steel rod - which is not the same as 5mm- and 10-32 threadcutting dies and nuts, because these are the components which are readily available from suppliers. For measuring string action -the height of the string above the frets - I use 64ths of an inch because that was the way I was taught by Jim Williams over 20 years ago, and it is a good increment to work in though 1000ths of an inch is equally useful. (For those interested, a 64th of an inch is about .4mm) Plain steel and bronze wound strings are usually sold with the diameter of the strings measured in 1000ths of an inch. There is, however, a metric-imperial conversion chart as Appendix 1.



*A 26"-660mm scale flat-top bouzouki*