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Synthesised Sound

Recently, several manufacturers have developed synthesisers that are activated from the strings of a guitar rather than the keys of a piano. The Roland GR700 uses standard guitar strings. Complex sound information is picked up by a hexaphonic (six-sound) input and sent to the synthesiser where the non-guitar parameters are added. A more exotic approach to the same technique is the SynthAxe, a 6809-controlled synthesiser. The SynthAxe, a development prototype, picks up sound data from an electrical connection between the string and the fret. Sensors at the top of the neck pick up bending and sliding variations. A second set of strings and a small keyboard are used to further enhance the sound

immediate visual guide, is a system that pre-dates electronics by several centuries, and cannot accommodate all the new notations required for electronic music.

For many microcomputer owners, understanding stave notation or MCL will be the key to getting the most from MIDI. For students in schools and colleges, a major obstacle is the present character of music education. For most music students, the accepted area of study is still firmly based in European classical music. The majority of classical musicians and teachers identify electronic music with the more avant-garde or radical composers of the last two decades, and, to an extent, with contemporary pop music. Neither of these fields is accepted as being on a par with classical music. In fact, some classicists would even question whether they were 'music' at all.

It seems unlikely, therefore, that MIDI's educational potential will be much explored in the mainstream music curriculum, especially since computing skills are required in addition to musical electronics. There can be few computer science courses with sound-proofing facilities that are adequate for a class of MIDI synthesiser players. If MIDI proves to be popular in such an environment, a simple solution such as the use of headphones will be required. But, as most MIDI units are designed to interface with one or more synthesisers, several signals would be required to deal with this. Even at a basic level, MIDI use in education implies the development of computer music studio facilities, and it would seem to require an active involvement by computer science students as well as by music pupils.

For live performances, MIDI is primarily a means of integrating a number of synthesisers, sequencers and drum machines into a single controllable system. The most worrying possibility for musicians who use extensive sequencing in their performances is a loss of synchronisation between units, and a resultant musical breakdown. Performers as well known as the Thompson Twins and Howard Jones have been known to run tapes of their studio-recorded backing tracks while 'performing live', rather than take the risk. In theory at least, multi-synthesiser groups should have more trouble-free performances thanks to MIDI.

One feature of this advance is that such groups will no longer have the appearance of being 'multi-synthesiser'. Since the early 1970s, a synthesiser has generally been thought of as a keyboard instrument, with a number of parameter control knobs and sliders set in a fascia above the keys. But if one keyboard synthesiser is using MIDI to control a second or third, then there is no longer any necessity to have more keyboards than the one on the master instrument. As MIDI use becomes more general, so more 'synthesiser modules' are appearing on the market. These are simply the sound-generating and sequencing units that were formerly part of keyboard instruments. As these modules have little or no *visual* interest, there is no need for them to be present on stage.

There is another development that pre-dates MIDI, but which is likely to gain more attention as the number of keyboards diminish. This is the possibility of having electronic sound synthesis controlled by string-playing data from guitars, and by breath and mouth control data from wind instruments. Compared to the mechanical action of simply depressing a note on a keyboard, plucking a string or vibrating a reed involves more complex acoustic information being transmitted to the instrument in question. If this information is digitally encoded and transmitted via MIDI to an