

# ELECTRONIC ORGAN CORNER

... by Douglas Marion

This is the second in a series of articles, staff written for THE TIBIA. Eventually the full electronic organ field will be embraced, especially in the line of entertainment organs. The future of theatre-type music lies largely in this direction since pipe organs are no longer being manufactured for this purpose. Your comments are needed urgently.

THE PREVIOUS ISSUE introduced the subject and idea of an electronic organ section for The TIBIA. In following up this introduction, it was felt that the next logical step was to review the field, to give some mention of the various makes and models, and indicate the scope of the industry. A letter has gone to each of the known manufacturers, and their descriptive materials provide the specific details used in this and the following article.

## Tone Generation

Methods of producing tones are quite different, but the resultant sounds are sometimes remarkably similar at one extreme, violently different at the opposite. The reasons for this are easily understood when the technical aspects are considered, sometime in the future. But let us consider for a moment several features that make a sound, a pipe-organ sound. One of the characteristic features of any blown instrument, or bowed string, is that it takes a recognizable time to develop the tone. The note builds up at a rate and in a manner that form parts of its identity. The qualities of decay are similarly important. Extraneous sounds, like the scraping of the violin bow or the hissing of air in a pipe, add their bits . . . these are missed in poor recordings and demand the high in *high fidelity*. One could go into considerable detail and still leave untouched many items in this complex category. But let it be understood clearly that if these electronic devices are to borrow the name *Organ*, they imply that it is their intention to imitate a pipe. And we have had enough experience already to know that it may require a real skill to achieve this similarity in some instruments. Others may provide a happy imitation much more easily. Here again, skill on the part of the performer, and indulgence on the part of the listener are essential. For these reasons, some bad publicity has appeared from those manufacturers who have substituted the magic of advertising copy for quality and research in their products.

The present market includes at least one maker with models extending into four manuals, the Allen Organ Company. Among the others, there is a whole group of spinet types, with a split keyboard in one of the several patterns. Tones may be generated by purely electronic circuits, by vibrating reeds, or by spinning cams or wheels. Other methods have been used and may be in use again, but they are not in commercial production in this country, according to our information.\* Some methods attempt to synthesize the tones out of their component parts. Others separate from the master pattern a color that suits their particular purposes. This is done in the same way that light is handled . . . either colored at its source or filtered to a color from a white source.

To the listener, the manner of production of tone is of academic interest. To the manufacturer, it may be fundamental philosophy. If one is to achieve great versatility and wide scope, one of the more complicated methods may be the only choice. Hammond carried the synthetic process to its commercial extreme, and Allen has chosen the opposite approach and developed it, probably, beyond that of any other manufacturer. Details are guarded secrets of the various manufacturers, but the general principles are neither new nor unique. Aside from tone colors, there are the matters of attack, decay, chorus effect, extraneous sounds, reverberation, and servicing, just to mention a few important considerations.

Tone color production is a fascinating field. This is neither more nor less applicable to the electronic field. But, being newer, the electronic experimenter has the advantage of what has gone before, together with a much more easily rearranged medium. Many workers have become engrossed in this aspect to the exclusion of all else.

\*"The Purchaser's Guide to the Music Industries;" published by The Music Trades, Steinway Building, New York City, 1958 edition.

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Prices on the Hammond line begin under a thousand dollars with this Chord Organ. Its three-octave manual plays single notes or chords, individual buttons control 96 different chords. Pedals sound the tonic and fifth of the chords



This is the largest electronic organ installation that has come to our attention. It was built by the Allen Organ Co. for the First Presbyterian Church at Stamford, Conn.

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(CONTINUED)

## Chord Organs

The chord organs which have an organ keyboard for the treble and buttons like an accordion for the accompaniment, begin the product scale. And even these are the simple evolutionary consequences of the Solovox and other earlier inventions. Ascending the scale, one need only watch the bass pedals to keep oriented; for the more elaborate the instrument, the greater bass complement it boasts. Split keyboards give way to full two-manual consoles. As consoles get bigger, the pattern is more familiarly organ, too, and stop tablets suggest in name and arrangement what is being imitated. In the largest electronic organs, such as the Allen four-manual, there is an electrical component to perform each of the principal organ functions. The price ranges are varied and start with a few hundred dollars, may approach one hundred thousand at the present upper limit.

Especially in the medium ranges, there are features that vie for popularity and sales. Of these, the percussion effect is surely the most frequently mentioned. It is probably the most appealing to the average purchaser. Beside the reasonably good imitations of known instruments, some manufacturers provide effects that are unique and peculiar to the type of tone generators used. So much work has been done in breaking down and analyzing of characteristic tones that it is possible to duplicate virtually any known sound. The cost and practicability are the significant limiting factors. The continuous improvement in recording and reproduction of recorded sound is going hand in hand with development of electronic instruments. The makers will produce what the public is willing to buy or demand.

A word about upkeep is in order. Generally speaking, electronics are simple to service and require very little. Mechanical features have been changed as field experience has shown the need. But the basic tone generating systems have stood the tests of time and hard usage. Deterioration is negligible, stability is excellent. The usual atmospheric conditions do not alter the qualities nor the operation. Many of these instruments are portable, and all but the largest are moved as easily as any large piece of furniture. At their best they produce tones which resemble true organ tones as closely as the finest high fidelity reproductions on good equipment resemble their sources.

The average electronic organ sold is not for a pipe-organ perfectionist. It leaves a great deal to be desired. The attack is violent as compared to a pipe, the decay correspondingly short. Perfect phasing is an inherent handicap when present. But from the standpoint of procurement, an electronic organ is easy to buy, easy to install, and it can bring into a home a world of entertainment and relaxation available in no other way. When the word organ is heard, common English usage already means *electronic* to more people than it does *pipe*.

Electronic organs are to be compared to pipe organs only in the ultimate goals or perfections sought. They have not, as a group, achieved any appreciable degree of successful imitation. But they do entertain, and they can do this very well.

The very small instruments are more or less a beginner's tool, or a budget limitation. Two companies now offer complete do-it-yourself kits for home construction, and a wide variety of models is available. As

to playing, the principles of operation are learned quickly, and the adult beginner, particularly, seems to appreciate his ability to play recognizable tunes early in his practice. Free lessons, actually included in the purchase price, are common features. These help sales spectacularly. Owners of the small models quickly become familiar with them and become enthusiastic boosters. If the owner outgrows the tonal and technical limitations of the small organ, he is an excellent prospect for one of the more pretentious models. He will know what he wants and be willing to sacrifice to get it, if necessary.



Wurlitzer now offers, among its broad line, this concert model No. 4800. It is typical of the larger two manual, self-contained units.

There is a wide selection of electronic organs. Tonally similar equipment is offered in a variety of cabinets. Auxiliary equipment extends the scope and customizes the installation. So compact is the small organ's basic components that there is room for such items as a phono turntable, FM tuner, or other small units. There might even be a model with a goldfish bowl, although one doubts that the goldfish would be included!

In the next article, it is hoped to list all the current makes, identify their chief characteristics, and to indicate their fields of usefulness. We say *hope* because of the tremendous growth in this market which brings new names and products almost overnight. We shall certainly consider all the major electronic organs and organ manufacturers.