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Editor
of
Theatre Organ

WORK OF A GENIUS IN A NOVEL FIELD

How John C. Deagan has labored to standardize pitch and to amplify the resources of the organ.

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Working quietly from year to year in his large factory on the north side of Chicago or in his laboratory in California, where he spends the winter months, is a man who has made most valuable contributions to the world of organ music in his own field. He has devoted his life to the invention and perfection of chimes, harps and other percussion stops, features without which no American organ of today is considered complete. John C. Deagan has done all this without blare of trumpets or — to make the figure more apropos — without the ringing of bells. But his contribution to the modern organ is none the less one of the important developments of this century, which has been marked by so many inventions which have revolutionized organ construction. There are few men whose achievements or whose personality are as interesting as that of Mr. Deagan, although we do not recall that he has ever appeared as a speaker at a convention of organists.

Deagan, enjoying a full measure of health and mental alertness, and a keen, inquiring mind, was from boyhood a musician of more than ordinary ability. His chosen instrument was the clarinet, and by diligent application he had at 20 earned an enviable reputation as an orchestra player and soloist.

An exceptional inquisitive mind, a studious and restless nature, with a penchant for thoroughness that brooked no defeat, prompted him to delve into the science of acoustics, and he became an ardent student of Helmholtz's "Doctrine of the Sensations of Tone", after having, at a very early age, attended at South Kensington, London, a series of lectures of musical sounds by that great scientist.

Experiments carried on during his leisure hours aroused his interest in the glockenspiel — a series of toy bells introduced in German orchestras by Mozart. He realized the need for additional tone color and innovation in ensemble playing. With the ordinary small tools at hand and but an imperfect knowledge of this forerunner of the line of percussions that later heralded the Deagan name he produced his first set of perfectly tuned "orchestra bells." As he was blessed with that rare adjunct — a perfect musical ear — these bells, though crude in workmanship, were in excellent tune and, introduced into the orchestra, were an instant success. Though the Deagan glockenspiel gained quick recognition, it was not then realized that here was a pioneer effort, in that at no time previously had there been any attempt to mount wood or metal bars in a hanging position on the exact node supplemented with resonators. Aided by previous research and analysis these tones were developed on a scientific, basic principle from which throughout the evolution of these instruments there has been no departure.

An ever-increasing demand for similar devices nearly half a century ago soon impelled Mr. Deagan to devote all of his time to manufacture and improvements and, never content with the mere commercial aspect of his efforts, he experimented with various metals and alloys until the crude forerunner became the perfected orchestra bells, Parsifal bells, celeste song bells, etc., in the hand-played instruments and the tonally similar organ percussions of today.

Next, a mere toy of foreign import — a series of roughly-tuned maple bars on ropes of straw and known to the music

trade as the "straw fiddle" — drew Deagan's attention. Recognizing its possibilities as an orchestra and stage instrument he made several trips to Africa and other tropical countries and tested various woods until he obtained a tone quality more to his liking. This he found in a hard tropical wood, accoustically brilliant, clear, durable and musical beyond anything attainable in the product of our forests. To augment the volume and amplify the quality he began experimenting, using resonators, an innovation not theretofore attempted. And here his knowledge of physics and his study of tone development came to his aid. The result was the modern xylophone.

After the development of the xylophone came the need for a deeper, richer, more resonant and mellow tone. Knowing something of the peculiar tone developed among African natives by means of wooden bars mounted over gourds, a long series of experiments (involving the use of thinner bars and larger adjustable resonators) and long application and perseverance, developed modern marimba harp. This is the best imitation of the true Italian harp tone ever devised for the organ. It has the same liquid, limpid quality, the same vibrant, penetrating tone and, like its forerunner, is capable of the most delightful runs and rapid arpeggios. The bars, thin, short and mounted by the suspended cord-and-post method, register much lower than the xylophone. The tone depends entirely on the resonator for its quality and augmentation, the bar itself, struck with padded mallet, being practically soundless, particularly in the lower register.

The demand for distant chime or church bell effects in band and orchestra compositions prompted the developing of so-called cathedral chimes, and a series of experiments disclosed the fact

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that because of its composite character and its inherent multiplicity of partials or overtones the true chime tone could be produced with tubes of drawn bell metal, scientifically varied in length, diameter and wall thickness.

With the application of the chime stop to the organ came the need for educating organists on its character, for many of the less discerning were want to play this colorful stop entirely too fast and more than one tone at a time.

Until the development of the entire line was well toward completion the many innovations in tonal effect had found a big outlet through the stage and for ensemble use in bands and orchestras. An outstanding example was that of the organ builders, who soon recognized in the solemn, dignified and stately tone of the newly-perfected cathedral chimes an ideal adjunct and promptly added a chime stop to their church organs. The question of pitch had ever been in a chaotic state and when more than three decades ago the piano and organ manufacturers adopted A-435 as the standard international pitch, as a protest against the high or concert pitch of between A-454 and A-461 in vogue up to that time, Mr. Deagan, feeling that in the interests of uniformity and brilliancy a slightly higher pitch than A-435 was imperative, spared neither time nor expense in bringing about the adoption for orchestra and band of the Stuttgart standard—the pitch of the latter days of Beethoven—A-440. Appearing before the convention of the American Federation of Musicians, of which organization he was a charter member, Deagan, through his influence among the more prominent musicians, was able to induce that organization to adopt his view and pronounce as standard the pitch now universally used. To such an extent was the federation with him that it is a matter of record that in enforcing their edict, fines were levied in some localities on members failing to live up to the pitch requirements. When the organ became the beautiful theatre instrument that it is today, its builders fell into line, with the result that due to Mr. Deagan's effort, out of chaos and confusion has come a universal pitch, A-440, that meets every requirement of the musical world today.

Effective beyond every other influence in settling the mooted question of pitch was the Deaganometer—a device invented by Deagan whereby musicians are enabled to determine by both eye and ear the exact pitch they are using. Appreciation of this accurate pitch measure and the help it has been to large sym-

phony orchestras has been expressed in personal letters and autographed photographs by such luminaries in the world of music as Frederick Stock, Walter Damrosch, Bodansky, Stransky, Sousa, Stokowski, Victor Herbert, Polacco, Paster-nack, Fred Innes, Percy Grainger and numerous others.

The demand in symphony orchestras for a celesta effect led to the development of a metal bar percussion which many years ago he produced successfully and to which he gave the name harp- celesta. Accurately tuned resonators augment the tone of the bars. The tone is of a liquid sweetness that has made this instrument by far the most popular organ stop (excepting possibly cathedral chimes) of all the musical percussions. A fact not generally appreciated, but which organ builders were quick to recognize, is that though percussion instruments were devised originally to meet the demand for tone color and innovation in ensemble playing, their maximum musical capacity is best appreciated in the beautiful blending and pointed tone effects they add to the organ pipes and because of the nicety with which mallets of exactly the right density throughout the register are provided for each tone of the scale. It has been Mr. Deagan's privilege to see the phenomenal expansion of the organ during more recent years and to realize that no organ is considered complete without its chimes and harp.

Deagan's travels having given him an insight into the use of carillon music as a community institution, he felt that far greater perfection was necessary to meet the more exacting musical demands of the American public; that carilloneurs should be chosen for their musicianship, rather than their physical strength. To that end he omitted from his considerations the cast bell type and spent a gen-

erous fortune developing massive, scientifically proportioned, composite-toned bell metal tubes that are a giant out-of-door edition of the Deagan cathedral organ tubes which are tuned to minute accuracy and are played from the organ console by the regular organist, who is thus enabled to blend belfry chime music right into the church services.

For bringing such music easily within the reach of every community and for pioneer effort the world owes a debt of gratitude to J. C. Deagan, the master builder of musical percussion instruments, whose untiring zeal in the pursuit of ideals has bestowed on the world a legacy.

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