

HARMONIC-BAYAN INSTRUMENTATION OF GORLIVKA FACTORY OF MUSICAL INSTRUMENTS

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Abstract. *The article sets out the prerequisites for starting an industrial music production in Gorlivka. The basic constructive types of harmonic-bayan assortment of Gorlivka factory of musical instruments are highlighted and characterized. The design and organological features of the children's orchestra set «Harmonica» are analyzed. The author's classification of Gorlivka harmonic-bayan instruments is offered. It is noted that the design and methodological principles of the formation and development of the structures of Gorlivka harmonic-bayan instrumentation complemented each other, that is, they conditioned its development in parallel motion.*

Keywords: *musical instrument factory, bayan, harmonica, structures, range, keyboard.*

Introduction. In modern musicology, a new research direction is clearly defined – Ukrainian industrial production of harmonic-bayan-accordion instruments. This direction is an important complement to traditional music science, which combines the three essential components of active music art: instrument – repertoire – performance.

One of the first to address the problem of studying the Ukrainian industrial production of harmonic-bayan instrumentation was E. O. Ivanov, who in the textbook «Harmonics, bayans, accordions / Spiritual and material aspects of functioning in the musical culture of Ukraine of the XIXth – XXth centuries» [1], characterizes the main harmonic-bayan assortment of Zhytomyr factory of musical instruments.

A. Y. Stashevsky and O. S. Reznik in the scholarly essay «The Glorious Way of Kreminna masters» [11], consider the bayan-accordion instruments of the Kreminna factory of musical instruments.

Paying attention to the scientific and practical importance of the works under consideration, it should be noted that there is no generalized scientific work in the Ukrainian musicology concerning the evolutionary development of models of harmonics and bayans of Gorlivka factory of musical instruments. The abovementioned problem led to the search for information fragments (periodicals, statistical annual reports, museums of the local lore, memories of Gorlivka enterprise employees), which would allow to demonstrate a complete picture of the historical development of the harmonic-bayan instrumentation of Gorlivka factory of musical instruments.

The task of this intelligence involves: to establish the preconditions for the beginning of industrial music production in Gorlivka, to reflect the historical process of development of harmonic-bayan instruments of Gorlivka production in view of its basic design types.

Research results. The history of the emergence and development of Gorlivka industrial music production dates back to the fifties of the last century. It was during these times that Donetsk Regional Executive Committee raised the question of the creation of a bayan music factory in Gorlivka. The management of the city industrial complex proposed the following algorithm to solve this problem: organizing theoretical and practical courses for future employees; space for a music factory; establishing cooperative deliveries of semi-finished products from Poltava factory; forming the composition of the heads of Gorlivka factory of musical instruments [3].

The general evolutionary development of Gorlivka harmonic-bayan instrument production covers the period 1955 – 1998. Given the existence of three separate ways of forming Gorlivka harmonic-bayan assortment, it is necessary to distinguish three stages of its structural and technological development, respectively.

The first stage (1955 – 1959) should be considered as a period of borrowing of design and technological thought and experience of Poltava masters, which was expressed in the emergence of a two-voiced bayan «Donbass 43x80-II» with loan mechanics.

The second stage in the history of Gorlivka harmonic-bayan instrument development (1960 – 1993) is determined by the period of the development and formation of its own musical assortment.

Reproducing the time sequence of the evolutionary development of Gorlivka harmonic-bayan instrument of the second stage, it should be noted that it contains four phases.

The first step (1960s) in the implementation of the plan to create their own bayan assortment was the release of bayan «Timbre 52x100-II», «Tenor 55x100-II» and «Tonica 58x100-II» [5; 8; 16]. These three varieties of new models have both a distinctive and unique feature. The distinctive feature is the different sound range of the melody sound, and the only is the generalized number of buttons of the keys of the basic bass-chord accompaniment [2].

In the period of the second phase (1970s), Gorlivka masters produced two more new models of bayan «Prometheus 58x100-II», «Ugolek 61x120-II» [7; 17]. Based on the analysis of the sound range of the melody sound and the bass-chord accompaniment of the five bayan models, it is not difficult to see the gradual dynamics of its increase, which indicates the desire of Gorlivka masters to work towards expanding the playing performance of the bayan instrument.

The third phase (1980s) of the development of the second stage of Gorlivka bayan production is characterized by the emergence of two new models of bayan «Lyra 52x100-II» and «Rainbow 58x100-II» [13; 14; 15]. In these two models, Gorlivka masters have used the traditional common range [2].

The fourth phase (late 1980s – 1990s) is characterized by the harmonic-bayan instrumentation of an experimental nature, the direction of which is determined by two factors: the introduction of a new design element in the left mechanics of the bayan instrumentation and the appearance of a qualitatively new reed pneumatic keyboard instruments for Gorlivka enterprise – diatonic harmonica. In the late 1980s, a new model of the two-voiced bayan «Miner 61x120-II» was developed in the experimental section of Gorlivka enterprise [2; 6]. The new design element for Gorlivka bayan production was the use of left mechanics without a loan. The experimental character of the bayan «Miner 61x120-II» is determined not only by the use of left mechanics without a loan, but also by the fact that its output has not been introduced into mass production [2]. An innovation for Gorlivka enterprise was the production in the first half of the 1990s of the two-voiced harmonica «Donchanka 25x25-II» [2; 9; 10].

Analyzing Gorlivka bayan instrumentation of the second stage of development of this production, in particular the first three phases of it (bayans «Timbre 52x100-II», «Tenor 55x100-II», «Tonica 58x100-II», «Prometheus 58x100-II», «Ugolek 61x120-II», «Lira 52x100-II», «Rainbow 58x100-II»), it should be noted that in their development by local craftsmen used a single approach, which was expressed in several structural elements. First, all the abovementioned Gorlivka bayans are three-rowed, two-voiced straight deck instruments. Secondly, the abovementioned Gorlivka bayan instrumentation used a collapsible finger board with double-sided vent arrangement. Third, all eight bayan models use a loan left-hand mechanics.

The third stage (1973 – 1993) can be called the period of introduction and realization of innovative design ideas of the teacher of Kerch children's music school № 2 G. T. Statyvkyn. The main features of the new design vision of G. T. Statyvkyn were the need to create selected and selectively ready-made bayans with two interchangeable left half corps, that is, a separate arrangement of the mechanics of ready and selected keyboards.

According to the design work of G. T. Statyvkyn, Gorlivka factory produced the selected one-voiced bayan «Kid 37x36-I» and selectively ready-made two-voiced bayans with two interchangeable semi-housings «Octave 46x100/39-II», «Octave-2 49x100/48-II» and «Donbass-2 55x100/54-II» [12].

Ensuring the continuity of the internal unity of the innovative principle of initial learning of the bayan playing, in the early 1990s, G. T. Statyvkyn develops a new model of instruments, in particular, a new model of unanimous children's one-voiced selected bayan «Rodnichok 40x37-I». In 1991, in Kyiv at the Republican competition for the best musical instruments, the selected bayan «Rodnichok 40x37-I» was awarded the stimulated prize [4].

The development of a children's orchestral set «Harmonica», which included four instruments «Solo-1 17x10», «Solo-2 17x10», «Rhythm 10x10» and «Bass 8x8», became fundamentally new in the line of musical instruments of Gorlivka factory. Both differential and integrative design features inherent for each instrument of the children's orchestra set «Harmonica».

Harmonica «Solo-1 17x10» has an unusual system of placement of sounds on the right keyboard. The first row contains diatonic sounds: c, d, e, f, g, a, h; the second row – chromatic sounds: cis, dis, fis, gis, ais [4]. On the basis of the abovementioned system of arrangement of sounds on the right keyboard of the harmonica «Solo-1 17x10» it can be concluded that the system of arrangement of sounds, used by the designer, corresponds to the right keyboard of the accordion of the piano type, but

in the button variant. The range of sound of the melodic sound harmonica «Solo-1 17x10» – from «c» the first octave to the «e» of the second octave. The left harmonica keyboard «Solo-1 17x10» has two rows of bass-chord accompaniment. The first row contains the bass sounds: f, c, g, d, a; in the second row – major and minor chords. The innovativeness of the simultaneous combination of major-minor chords in one row was achieved by arranging sounds in the resonator of the accompaniment with quintiles without mediant tone [4].

For the harmonica «Solo-2 17x10» there are design features of the harmonica «Solo-1 17x10»: identical system of location of sounds on both the right and left keyboards. The distinctive feature of the harmonica «Solo-2 17x10» is the changed range of sound of the melody: from the «g» of a small octave to the «h» of the first octave [4].

The design decision of G. T. Statyvkina on the unusual arrangement of the system of sounds on the right keyboard, as well as the simultaneous combination of major-minor chords in one row of the left keyboard is substantiated by ergonomic and physiological data of preschool children: height and width of the thorax, length of arms and forearms. According to G. T. Statyvkina, this design solution has allowed to reduce the overall dimensions of the instruments and make them in accordance with the physiology of preschool children [4].

While designing the harmonics «Rhythm 10x10» and «Bass 8x8» G. T. Statyvkina also adhered to the above principle. Each of these models has its own sound placement system on both the right and left keyboards. The system of arrangement of sounds of the right keyboard of the harmonica «Rhythm 10x10» is formed by diatonic mediantes. The first row contains the following sounds: c, e, g, h, d; second row – h, d, f, a, c. The system of arrangement of sounds of the left selected keyboard of the harmonica «Rhythm 10x10» is also formed by diatonic mediantes, only in the mirror reflection. The range of the right harmonica keyboard «Rhythm 10x10» – from the «h» of a small octave to the «d» of the second octave, the range of the selected sound row – from the «h» of a large octave to the «d» of a small octave [4].

The system of arrangement of sounds of the right keyboard of the harmonica «Bass 8x8» is formed by successive diatonic tetrachords. The first row contains sounds: c, d, e, f; second row – g, a, h, c. The system of arrangement of sounds of the left selected keyboard of the harmonica «Bass 8x8» is also formed on diatonic tetrachords, but in the mirror reflection. The range of the right harmonica keyboard «Bass 8x8» – from «c» a small octave to «c» the first octave; the range of the selected sound row is two-voiced: on the one side of the resonator – from «c» a large octave to «c» a small octave, on the other side of the resonator – from «c» a small octave to «c» the first octave [4].

Therefore, the differential design features of the children's set of orchestral harmonics are: systems of placement of sounds on the right keyboard (harmonica «Solo-1 17x10» on the principle of accordion keyboard of the piano type in the button version; harmonica «Rhythm 10x10» – on diatonic mediantes; harmonica «Bass 8x8» – for diatonic tetrachords); systems of placement of sounds on the left keyboard (harmonica «Solo-1 17x10» with bass-chord accompaniment and simultaneous combination of major-minor chords in one row; harmonica «Rhythm 10x10» on diatonic mediantes; harmonica «Bass 8x8» by diatonic tetrachords.

Integrative design features of the children's set of orchestral harmonics were: identical systems of location of sounds on both the right and left keyboards of the harmonica «Solo-1 17x10» and «Solo-2 17x10»; the principle of mirroring the system of arrangement of sounds of the right keyboard on the left selected keyboard in harmonica «Rhythm 10x10» and «Bass 8x8».

Conclusions. The considered Gorlivka harmonic-bayan instrumentation determines its integrative unification into the general classification: bayans with ready bass-chord accompaniment («Donbass 43x80-II», «Timbre 52x100-II», «Tenor 55x100-II», «Tonica 58x100-II», «Prometheus 58x100-II», «Ugolek 61x120-II», «Lyra 52x100-II», «Rainbow 58x100-II», «Miner 61x120-II»); teenage selectively ready-made bayans with two interchangeable left semi-housing by the design of G. T. Statyvkina («Octave 46x100/39-II», «Octave-2 49x100/48-II», «Donbass-2 55x100/54-II»); children's selected bayans by the design of G. T. Statyvkina («Kid 37x36-I», «Rodnichok 40x37-I»); diatonic harmonica for solo and ensemble performance («Donchanka 25x25-II»); children's orchestra set «Harmonica» by the design of G. T. Statyvkina («Solo-1 17x10», «Solo-2 17x10», «Rhythm 10x10», «Bass 8x8»).

The historical and evolutionary development of the harmonic and bayan designs of Gorlivka industrial production took place in the aspect of three design and methodological principles: borrowing of the design and technological thought of Poltava masters, development and production of bayan instruments by accumulating their own experience and realization of the design and methodological design of

G. T. Statyvkyn. The three principles abovementioned underlie the periodization of the historical and evolutionary development of the designs of harmonics and bayans of Gorlivka industrial production. The first stage (1955 – 1959) should include the specialization of Gorlivka production on the manufacturing of two-voiced bayan «Donbass 43x80-II», which design and organological properties and features are borrowed from Poltava bayan production. The second stage (1960 – 1993) is related to the approval of its own bayan assortment, which in its development has passed four inter-dialectical phases: the first phase (1960s) – bayans «Timbre 52x100-II», «Tenor 55x100-II», «Tonica 58x100-II», characterized by the differential range of melody and an integrative set of bass-chord accompaniment; the second phase (1970s) – bayans «Prometheus 58x100-II», «Ugolek 61x120-II» – with extended playing performance qualities; the third phase (1980s) – bayans «Lyra 52x100-II», «Rainbow 58x100-II» with a traditional range; the fourth phase (late 1980s – 1990s.) – bayan «Miner 61x120-II» with a new design and organological element in the left mechanics and two-voiced harmonica «Donchanka 25x25-II» – an innovation of Gorlivka production. The third stage (1973 – 1993) in the history of the development of Gorlivka harmonic-bayan instrumentation reflects the design-methodological opinion of G. T. Statyvkyn which was concretized in three groups of musical instrumentation: the first group – children’s one-voiced selected bayans «Kid 37x36-I» and «Rodnichok 40x37-I»; the second group – teenage selected ready-made bayans with two interchangeable left semi-housing «Octave 46x100/39-II», «Octave-2 49x100/48-II», «Donbass-2 55x100/54-II»; the third group – the children’s orchestra set «Harmonica» («Solo-1 17x10», «Solo-2 17x10», «Rhythm 10x10», «Bass 8x8»). Based on a step-by-step analysis of the historical and evolutionary development of desing of Gorlivka harmonic-bayan instrumentation, it should be noted that from the beginning to the end of the third stage, the second stage continued to co-exist (1960 – 1973 – 1993), the time interval is consistent with the principle of layering. All three abovementioned design and methodological principles of forming and development of structures of Gorlivka harmonic-bayan instrumentation complemented each other, that is, they conditioned its development in parallel motion.

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