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THE DIGITAL AGE RECORDING TECHNOLOGY INNOVATION DEVELOPMENT OF CHINA

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ABSTRACT

From the original huge recording equipment, by now the recording work a person a computer can be completed, recording technology obtained the unprecedented development, usher in the digital age, comprehensive at present, with the progress of digital technology, digital recording technology is widely applied to many areas, this paper probes into the innovation and development of Chinese digital recording technology.

INTRODUCTION

From the cylinder phonograph invented by Thomas Edison, the digital recording technology is widely used at present, recording technology ushered in a new era, under the background of the digital age, the advanced recording equipment gradually replaced the traditional analog equipment, computer-based recording equipment, not only greatly improve the quality of the recording effect and, on the choice of recording is also more flexible, infiltration of recording technology, digital technology allows recording equipment is more and more light, recording technology also gradually perfect, recording technology obtained the unprecedented development, ushered in the digital age.

Recording technology briefly

The tape is in a medium material record sound marks, the recording is not only a technology, at the same time, is a kind of has close relationship with music acoustics art form, the combination of technology and art produced the recording. Recording work, therefore, is a work with dual content, its technical performance in the engineer is not only to understand and grasp the electro acoustics, indoor acoustics, music

acoustics knowledge, but also understand the psychological and physiological acoustics and language knowledge, only to master the knowledge, can only through the recording system, using different methods of recording technology, performance record and store the recording voice signal. Recording of artistic performance in the engineer in the process of recording can accurately grasp the intonation, rhythm, to understand art and music, so as to make recordings for natural beautiful sound quality. The engineer of the auditory aesthetic, artistic accomplishment directly affects the tuning effect, a method of recording, naturally, record, reproduce, the original site, make music performances as real as possible, make the listener telepresence and space, have a feeling of intimacy. For example, in a recorded piano trio, should not only recorded the cello, the violin, piano playing perfect timbre, and proper grasp of music and audio-visual audio-visual distribution width, if audio-visual width is too large, will make sound recording lose sense of reality, lose audio-visual beating integral feeling. For the need of sound art, the recording of another method is to use the necessary technical means to change the original true voice.

Recorded in some cases, the effect will be restricted by replay environment and recording equipment, so, in the process of recording, the engineer should not only clever processing and processing complete music performance, but also let the listener was not aware of processing and processing details,

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such as: symphony orchestra to play, in order to strengthen its shock effect, to improve its artistic expression, the maximum dynamic range is about 90 dB, for such a big contrast in the recording process on the strength of the process if you don't), and it is difficult to achieve the ideal effect, in the process of recording, the recording technician to without losing symphony due expressiveness, 45 ~ 50 dB will actually play dynamic range compression. Music, sound effects and inconsistent, in the process of recording, the engineer need to adopt different means of recording technology, in both processing and recording devices on art creation. Recording is, as it were, the combination of technology and art, he not only contains a number of technical content, also includes many artistic accomplishment, therefore, at the time of recording music art performance, the engineer must work to make the necessary technical means of recording processing, to meet the needs of the recording equipment replay. Actually, recording technology development up to now, its recording art performance sound effects or music and the scene to listen to there is a certain gap, in order to make the recording effect the performance of the true nature of the original works the sound effect when live performances, improve recording artistic quality, performance, enhance the recording work of aesthetic value, the engineer must to second the artistic creation of music works, using the recording technology equipment to improve the effect of sound recording arts, thus making the perfect, accord with the audience aesthetic value of the recording sound art.

The comparison of analog recording and digital recording

Digital recording means is the use of digital recording, storage, editing, broadcast voice, the voice sound processing technology. The voice of the digital recording a new processing method, with the development of multimedia technology and the development of digital signal processing technology, digital recording gradually formed. Are more widely application field of digital audio, at present, music production, recording and transmission main use digital audio. Compared with analog recording, digital recording the recorded voice signal there will be no noise, the biggest problem and analog recording tape recording caused by noise, especially all sorts of equipment after the processing of signal to noise ratio is reduced, the noise increased. Digital recording the sound quality good, mainly because binary digital signal is only 0, 1, two kinds of digital identification, digital state as long as it doesn't affect the 0, 1, whether the interference of the outside world how strong, eventually become sound quality excellent original signal can be recovery.

Currently, the main recording of the method is divided into two categories, one is in the same period the recording, one kind is multi-track recording, recording the same period refers to the music playing or singing for double track, stereo or recorded will be required to play or sing together for multichannel program recording method. Multi-track recording refers to pick up sound, separate from the recording shows for late mixing, mixing into a multichannel or stereo mixing into double channel of stereo recording method. When recording, due to the same period directly recorded early and later stereo recording work together to complete, so, the key problems in the process of recording is picked up by the

quality of the sound source. In general, recorded directly from the stereo sound pickup means there are two main types, one is more microphone pickup, a way is to use an advocate complementary microphone sound pickup. Multi-track recording is also divided into two ways, one is staging multi-track recording way, a way of multi-track recording is the same period. Multi-track recording the same period is in a space, will need to recording sound source or goes over the same period, after the recording, for later processing. In order to achieve the ideal effect. And staging multi-track recording is recorded by group or one by one to record music voice, then later art processing, mix, referred to as a multichannel or dual channel works. In the eighty s and early ninety s, the domestic and foreign many recording engineer in recording program is the pursuit of reality, in order to reproduce the original sound as much as possible, as the goal, therefore, in that period, the same way multi-track recording the same period and more popular, especially large music recording, but also makes every effort to restore the sound, to produce the most can reflect true colors show. Therefore, to accurately position the whole all sound source advocate complementary pickup way of recording technology is the most popular at the time.

Many famous record companies are actively explore and research the location of the main receiver put way, tried to strike a perfect balance of music in the music scene, to achieve the perfect sound effect. Since the 21st century, along with the advance of digital technology, people pursuit of beauty and great changes have taken place, with the help of the power of the modern science and technology, people can create more and more rich images and sound, continuously improve the standard of perfection. Audio recordings, meanwhile, way of thinking and innovation, recording technology and methods is also gradually perfect and mature, the audio recording is the purpose of more effective changes recorded by the voice of the sound source, to make more perfect and meet people's aesthetic needs work. Even in big music recording, has also changed the traditional method of recording, abandoned the microphone recording mode, the artistic processing all to post-production. Abroad, a few years ago they abandoned the Lord microphone recording mode, multipoint audio sound pickup method is used to record large orchestra music, large music recording, in almost every musical instrument microphone is put before, the processing of each sound source, grasp, the balance of the whole music is done under the late careful calibration, all art processing to post-production, in order to more perfectly restore music scene.

This kind of treatment method, cannot leave computer strong processing power, audio workstations must focus on all the processing units, effects plug-ins, and then, careful revision and compensation by recording the source, by recording the source of noise to a minimum, this is completely unthinkable in the past. Compared with the traditional way of recording, digital recording audio workstation as the center, technical indicators are greatly improved, the most obvious change is the signal-to-noise ratio, the previous simulation equipment signal-to-noise ratio between 50 ~ 70 dB, now, using the digital technology, signal to noise ratio up to 90 ~ 110 dB. In addition, the frequency response, distortion, dynamic range, and other voice features on the technical indicators, digital technology has a significant improvement, sound recordings as

signal quality was a great upgrade. In addition, the application of computer centered digital recording technology, also greatly reduces the production cost of sound recording, at present, the professional recording threshold, decrease of medium and small studio is very common, easy to operate, low cost and simple portable, digital recording equipment system gradually take the place of the high cost of analog devices now use software can operate many equipment, which reduce the production costs, saved a large amount of raw materials such as tape, and reduced the energy consumption and pollution, reduce equipment investment, protecting the environment. And analog recording is made, the engineer need to take care of processing equipment, the production process of the intensity of labor is very big, the engineer energy is limited, it's hard to artistic creation on the energy into sounds. And digital recording is easy to operate, can be real-time editing, processing, under the background of digital recording, the recording technician labor intensity is greatly reduced, have more energy into the art of the late processing.

This not only greatly improved the recording program creativity, also greatly improve the quality of the recordings. Can say, the arrival of the digital era, not only reduce the labor intensity of the engineer, reducing the costs of the tape, also greatly improve the quality of the recording and promoted the development of the cause of the recording. However, from another point of view, due to the low-cost digital recording equipment, less investment, professional recording threshold low, result in some medium and small studio, recording programs are of variable quality problem, especially in music creation, single, repetitive works of mass production, the recording work quality the good and bad are intermingled, significantly reduce the good works, works of creative, it is also widely used high technology and equipment, bring the negative impact of Recordings.

The digitalage recording technology innovation development of China

With audio workstation as the core of computer recording equipment, not only greatly reduces the cost of recording, has greatly improved the recording quality. Recording the choice of the form of more flexible, the recording work of making ideas also great changes have taken place, the professional audio technology, aesthetic level also put forward higher requirements. First of all, the recording technician aesthetic ability must be high, the engineer must understand the subject of music works, type, can select the appropriate recording method, according to the demand of the subject matter at the same time, the engineer also very skillful, through multipoint recording work, must be conducted in the late stage of recording a personalized art processing, if the engineer technology is not strong, the aesthetic ability is not strong, difficult to second art works, making the popular work of art. With the advent of the era of digital, convenient operation, low cost and simple portable, digital recording equipment system gradually replaced the high cost of analog devices, recording devices are getting smaller, more and more sophisticated, more portable, such as listening to the speaker, USB digital microphone, recording accuracy has reached the professional standard, recording more convenient, higher quality. Sound is the art of space, update the recording equipment, improve the

quality of the recording, for recording the voice of the workers make a better all-round space, in the coming days, the perfect development of multichannel recording technology is the inevitable trend for the future development of digital recording. Not only in the movie true multichannel recordings, made in music, digital TV, etc, will also be true of multichannel. At present, the United States has to realize digital multichannel TV, analog TV already all stop in the United States. Digital television although have been broadcast in China, the 2008 Olympic Games live also implements multichannel sound production, however, on the production and broadcast end realize multichannel surround is not really complete multichannel playing, only the set-top box at the receiving end through the dolby decoder, family receiver also achieve multichannel playback at the same time, to complete the full implementation of multichannel. In the coming days, the multichannel sound pickup, recording technology will become more popular, the Chinese made in music, digital TV, etc., will realize the real multichannel playback, true multichannel will be more and more near to us.

Rapid development of sampling technology, not only greatly enriched the sample material, also increased the workers, the choice of recording program provides great convenience for creation of production and, under the impetus of the technology development, with the continuous integration of recording technology and art, the recording work will be more abundant. The arrival of the digital age, the use of computer, simplifies the process of recording, reduce the cost of the recording, improve the quality of the post-processing; The use of multichannel recording, make the dimensional feeling of music had the very big promotion. However, we should also recognize that digital recording technology has its advantages, at the same time, also often accompanied by disadvantages. Amen. Easy operation, lower barrier lead to variable quality of music works, under the background of digital, many recording music works lack of artistic expression, and so on. Again, the popularity of audio editing and production of software, has affected people's creativity, at the same time, also make people lazy to think, has affected people judge the ability of high quality sound, lead to many similar works.

These negative effects, however, is not able to stop the advance of digital recording technology development, along with the advance of technology, digital recording will have larger development space, digital recording era of comprehensive, will make the recording work content more rich, more personalized and creativity, recording workers a long way to go. The arrival of the digital age, the use of computer, simplifies the process of recording, reduce the cost of the recording, improve the quality of the post-processing; The use of multichannel recording, make the dimensional feeling of music had the very big promotion. Audio workstation as the core of computer recording equipment, gradually replacing the high cost of simulation equipment, with the continuous integration of recording technology and art, the recording work will be more rich, China will usher in a new era of the recording.

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