Characteristics and Countermeasures of Radio and Television Technology Maintenance in the New Era (Postprint)

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Abstract

The advent of a new era has brought development opportunities for all industries. As people' s quality of life improves, new demands have been placed on television news programs. This paper analyzes the characteristics of broadcast television technology maintenance work and proposes several countermeasures for its deficiencies, hoping to promote the stable development of the television news industry to the greatest extent possible through technical maintenance.

Full Text

Preamble

Characteristics and Countermeasures of Radio and Television Technology Maintenance in the New Era

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Abstract: The advent of the new era has brought opportunities for development across all industries. As people' s quality of life improves, new demands have been placed on television news programs. This paper analyzes the characteristics of radio and television technology maintenance work and proposes several countermeasures for existing deficiencies, hoping to promote the stable development of the television news industry through effective technical maintenance.

Keywords: New Era; Radio and Television; Technology Maintenance; Characteristics and Countermeasures

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Radio and television programs have become an integral part of people' s daily lives. To improve broadcast quality and enhance innovation, technical means must be employed throughout the program production process. Given the complexity of television technology maintenance, every aspect must be properly managed to ensure sustainable development in the new era. Furthermore, staff must continuously acquire maintenance expertise to address problems during news program recording, thereby ensuring television news programs evolve toward automation and modernization. This is particularly crucial as audience demand for news programs continues to grow [2].

1. Characteristics of Radio and Television Technology Maintenance in the New Era

1.1 Extensive Broadcast Time and Frequency

A prominent characteristic of radio and television technology maintenance in the new era is the substantial broadcast time and frequency. With rapid social development, audience demand for television programs increases annually. Unlike other program types, radio and television have a long development history, requiring maintenance staff to enhance their capabilities to reduce maintenance difficulties and support industry growth [1]. Channel numbers continue to multiply, with the notable feature that programming now runs nearly 24 hours a day. This not only satisfies audience demand but also improves ratings and expands the viewer base.

1.2 Diversified Transmission Methods

In addition to extensive broadcast time, transmission methods have become increasingly diversified. In today' s rapidly evolving information technology landscape, the application of scientific information technology has injected new vitality into the broadcasting industry. To keep pace with development, broadcasters must utilize computer networks and other platforms to assist their work, making news programs more modernized and better meeting audience demands. Technical personnel must continuously summarize experience and intensify innovation efforts, using computers and other equipment scientifically to ensure accurate and efficient program broadcasting. Traditional single-channel broadcasting methods can no longer meet modern economic development needs or audience expectations, making it imperative for broadcasters to employ modern technical means to ensure diversified program transmission and control methods

[3]. Additionally, establishing a new broadcasting system can enhance program recording effects and strengthen overall program quality.

1.3 Large Information Transmission Volume

Radio and television technology maintenance faces unique challenges, including notably large information transmission volumes. Traditional program production suffered from backward technical means that prevented timely information delivery. To meet new era requirements, the television news industry must intensify technological research and employ advanced methods to increase transmission speed and achieve real-time information delivery, effectively resolving previous delays [4]. Broadcast information transmission speed is often subject to external interference such as climate conditions. Therefore, improving operating systems is essential to enhance program novelty and attract larger audiences.

1.4 Computer Network Assistance

Related data indicate that radio and television technology maintenance work faces several challenges requiring multi-faceted management approaches. To ensure equipment and system security, broadcasters must conduct in-depth fault analysis and diagnosis. Staff must continuously study maintenance technology, as problems frequently occur during program recording. Only with proper maintenance knowledge can television news programs develop toward automation and modernization. In an era of increasing audience demand, effectively utilizing computer networks and online platforms to assist news program production is essential for truly modernizing and technologizing broadcasting systems.

2. Countermeasures for Radio and Television Technology Maintenance in the New Era

2.1 Understanding Equipment Operating Principles

To meet broadcasting industry development needs, maintenance must be organized according to these characteristics. First, staff must understand equipment operating principles. Without such knowledge, numerous faults may occur during recording, compromising program quality. Therefore, comprehensive mastery of broadcasting technology equipment principles is essential [5]. Potential safety hazards must be addressed promptly to prevent equipment failures and ensure smooth program recording. Staff should employ technical means to identify hidden dangers that cannot be detected visually, enabling timely intervention. Regular equipment inspection and maintenance are necessary to ensure normal operation and provide diverse, high-quality programming that enhances audience quality of life. When necessary, emergency measures may be employed to address equipment issues, contributing to improved maintenance quality.

2.2 Mastering Various Equipment Failures

Alongside understanding operating principles, staff must master various types of equipment failures. Given maintenance characteristics such as extensive broadcast time, high frequency, and diversified transmission methods, understanding equipment failures is crucial for effective resolution. First, staff should inspect equipment to ensure proper condition [6]. A comprehensive management system should be established to standardize equipment operation among all personnel, reducing recording disruptions caused by operational errors. Second, failure causes must be thoroughly analyzed to reduce recurrence frequency, creating favorable conditions for subsequent recording. During failure analysis, personnel should maintain detailed data records to implement appropriate measures and enhance overall management levels.

2.3 Developing Feasible Emergency Plans

Daily maintenance work requires feasible emergency plans to ensure smooth program recording. Emergency protocols are particularly important during adverse weather conditions that affect broadcasting. Research shows many recording interruptions result from equipment quality issues. To address this, management systems should be established to ensure proper equipment use and reduce problem occurrence during recording, thereby improving program quality. Broadcasting equipment should be stored in appropriate environments, as poor conditions can cause various degrees of damage. Minimizing economic losses through proper storage is crucial. Additionally, detailed emergency measures must be established, as television equipment systems are complex and maintenance is challenging. Only through fundamental emergency preparedness can recording proceed smoothly.

2.4 Strengthening Maintenance Talent Team Building

Radio and television technology maintenance is inherently complex, requiring comprehensive maintenance plans based on its characteristics. First, maintenance talent team building must be strengthened. Talent teams are critical for television development, as program production requires substantial human resources. Enhancing technician training can improve ratings and meet audience demand, allowing people to enjoy news programs during leisure time [7]. Second, broadcasting personnel must emphasize technological innovation, which is vital for modern industry development. Problems arising during recording must be addressed effectively to ensure stable equipment operation and inject vitality into industry development. Furthermore, cultivating professional ethics among technical personnel is essential, as low moral standards can negatively impact development and program quality. Comprehensive quality cultivation ensures staff capabilities meet production demands, creating greater profit margins and program novelty that satisfies audience needs.

2.5 Improving Maintenance Management Systems

To meet maintenance requirements, corresponding management systems must be improved. Leaders should maintain existing management systems, promptly adjusting deficiencies and employing advanced technology to enhance system management, thereby reducing staff pressure and ensuring stable equipment operation. Clear regulations should be established to guide all personnel, preventing unnecessary problems and ensuring orderly program recording. Responsibilities should be clearly defined, with incentive mechanisms established to reward outstanding performance with promotion opportunities while addressing underperformance fairly. This motivates staff participation in equipment maintenance management. Additionally, television stations should establish specialized technical teams and strengthen inter-departmental communication to effectively implement maintenance work, continuously summarize experience, and improve equipment efficiency to lay a solid foundation for future program recording.

2.6 Establishing an Effective Operation Management Framework

To promote broadcasting industry development, an effective operation management framework must be established. Traditional single management methods cannot meet modern industry needs given the comprehensive nature of television technology maintenance. An effective framework ensures equipment safety and stability, requiring analysis of network construction based on actual station conditions to support modern, intelligent, sustainable development. As industry competition intensifies, continuous innovation is needed to ensure the framework' s scientific rationality. In-depth audience research ensures programs align with modern aesthetic concepts, improving customer satisfaction. When necessary, a network management and dispatch center can be established to meet audience needs [8]. Furthermore, to maximize benefits, broadcasting staff should establish performance indicators, strengthen operational management, comprehensively control complaint rates, and fully utilize customer segments to facilitate smooth technology maintenance.

2.7 Improving Television Program Broadcast Quality

Previous factors have caused low maintenance efficiency. Therefore, feasible solutions must be developed to address existing problems and improve program broadcast quality. First, online platforms can expand program reach, increasing viewership and creating favorable conditions for future recording. Second, internal staff must continuously innovate and summarize experience, promptly optimizing program production deficiencies. Active interaction with audiences helps understand their true needs, enabling adjustments to satisfy audience demands. Maintenance personnel should also enhance their skills and innovate maintenance concepts to ensure equipment quality and provide a solid foundation for program recording. Maintenance managers must keep pace with the

times, emphasizing potential risk management to ensure technology maintenance develops in an ideal direction.

Conclusion

In summary, radio and television technology maintenance in the new era is crucial for industry development. Ensuring equipment and system security requires multi-faceted management, in-depth fault analysis and diagnosis, and comprehensive measures to guarantee smooth broadcasting operations.

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Note: Figure translations are in progress. See original paper for figures.