On Skills in Radio and Television Technical Maintenance: Postprint

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Abstract

The extensive application and development of Internet technology have posed considerable challenges to the advancement of broadcast television, rendering the strengthening of operational safety in broadcast television work particularly critical, thereby necessitating the scientific implementation of broadcast television maintenance activities. This paper first expounds upon the essential functions and maintenance characteristics of broadcast television, and subsequently conducts a detailed exploration of technical maintenance issues and the methodologies and techniques for broadcast television maintenance.

Full Text

Introduction

The widespread application and development of internet technologies have posed significant challenges to the broadcasting industry, making it critical to strengthen the safe operation of broadcast television. This necessitates a more scientific approach to broadcast television maintenance. This paper first elaborates on the important functions and maintenance characteristics of broadcast television, then provides a detailed exploration of technical maintenance issues and methodological techniques.

1. Important Functions and Maintenance Characteristics of Broadcast Television

1.1 Important Functions of Broadcast Television

With continuous development, broadcast television technology has improved markedly. Its propaganda function stands out prominently—as a medium, its most fundamental role is news and information dissemination, characterized by rapid speed, intuitiveness, and authenticity, representing important advantages

over other media. Broadcast television also serves as a powerful tool for implementing the ruling party's and government's policies and guidelines, possessing strong public opinion functions that promote advanced ideas and ethical standards. Its public opinion supervision function is equally notable, exposing violations of social norms and unethical behavior through investigative reporting. Furthermore, broadcast television fulfills an important educational function by disseminating ideological and ethical education as well as scientific and cultural knowledge through edutainment. It can also issue temporary announcements, ensuring timely and real-time distribution of major news regardless of environmental or seasonal factors [1]. Although the rapid development of network technologies in recent years has significantly impacted broadcast television, its positive role in daily life remains evident.

1.2 Characteristics of Broadcast Television Maintenance

Responsibility. Broadcast television maintenance work exhibits distinct features, with responsibility being paramount. The work can be tedious, demanding high levels of patience and accountability from technical staff. Only by maintaining full engagement can personnel effectively resolve actual faults. A lack of responsibility among maintenance staff inevitably leads to severe consequences, jeopardizing normal program broadcasting. Since maintenance involves numerous components requiring careful attention to every detail, a strong sense of responsibility ensures smooth implementation and guarantees maintenance quality.

Predictability. Technical maintenance requires staff to anticipate equipment and system failures, enabling preventive preparation and strengthening fault prevention to ensure normal program broadcasting [2]. In practice, maintenance personnel must analyze and eliminate factors that could disrupt operations, safeguarding uninterrupted transmission.

Collectivity. Broadcast television maintenance involves extensive content that cannot be completed rapidly by individual effort alone. The broadcast television system operates continuously, and equipment may malfunction due to various factors, requiring participation from the entire maintenance team to solve problems. Thus, the collectivist nature of technical maintenance work is particularly prominent.

2. Technical Maintenance Problems and Methodological Techniques

2.1 Analysis of Technical Maintenance Problems

Broadcast television maintenance encounters numerous challenges. Broadband transmission failures are particularly common. Power supply is critical in broadband transmission—faults in power supply equipment can cause signal interruption, while broadband signal congestion may lead to delivery system collapse.

Hardware burnout and short circuits in signal lines can also disrupt transmission, all affecting broadcast safety. Two-way network maintenance presents another frequent issue. As users install networks according to their needs, competition for space is inevitable, resulting in wasted space and maintenance costs. Additionally, fiber optic transmission faces challenges, including space constraints affecting wiring and the complexity of transitioning from fiber to wireless, despite residents' demand for stable signals. These represent key issues in broadcast television maintenance.

2.2 Maintenance Methods and Techniques

Scientific application of broadcast television maintenance methods and techniques helps ensure safe program broadcasting. Based on practical experience, several recommendations are proposed:

First, strengthen specialized operations by technical maintenance personnel. Equipment maintenance constitutes a crucial component of broadcast control technology. Maintenance staff should develop detailed learning and training plans to master broadcast control techniques and improve their skills. They must actively learn and think critically, while management should supervise equipment personnel and strengthen emergency drills. Developing emergency response plans for safety incidents ensures staff understand broadcast signal sources and transmission equipment operation methods [3]. Cultivating staff's holistic perspective and sense of responsibility, with strict adherence to regulations, creates favorable conditions for safe broadcasting.

Second, maintain comprehensive documentation. Maintenance personnel should record their work activities to provide theoretical support for subsequent operations. They must learn not only from books but also understand the working principles of various broadcast television equipment. Humble learning from senior colleagues helps master maintenance characteristics of different devices. By analyzing and summarizing fault resolution methods from fundamental principles, staff can lay a solid foundation for future work. During maintenance, personnel should emphasize targeted application of techniques to avoid creating new faults while fostering innovative thinking to improve maintenance standards.

Third, strengthen scientific daily maintenance. Maintenance techniques require emphasis on routine management. With rapid broadcast television development and increasing maintenance demands, technical proficiency must continuously improve. Scientific implementation of daily maintenance is essential, requiring management improvement and enhanced maintenance efforts to meet broadcast television management needs. Maintenance staff must fulfill their duties responsibly, implementing rotating shift systems and strengthening inspection and testing to ensure smooth broadcasting during major holidays. Institutional implementation should clarify responsibilities and division of labor, with enhanced inspections of broadcast television rooms and equipment to maintain

cleanliness.

Fourth, establish regular inspection systems. In maintenance work, personnel should address equipment failures based on root causes. Regular inspection plans should be implemented at daily, weekly, and monthly intervals, with different inspection levels covering distinct content. Daily inspections focus on basic equipment checks, weekly inspections emphasize equipment cleaning, and monthly inspections examine equipment switches and components. During inspections, staff must maintain proper attitudes, ensure pre-operation check quality, and follow appropriate procedures with targeted focus.

Fifth, ensure scientific equipment maintenance. Broadcast television maintenance requires professionalism, so technical staff must guarantee standardized and professional repair work. The principle of "safety first, prevention first" should be fully implemented. Technicians should follow work processes to complete maintenance tasks, promptly report issues to relevant departments, and conduct re-inspections to prevent potential problems. This approach strengthens technical content in inspections and repairs, advancing toward specialization and refinement.

Conclusion

In the current development environment, broadcast television maintenance requirements are increasingly demanding. Technical maintenance personnel must improve their professional competence to meet practical requirements and ensure safe program broadcasting. This theoretical study of broadcast television maintenance has proposed several measures, hoping to facilitate smooth maintenance implementation and guarantee safe broadcasting.

References

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