Research on the Innovation of Police Command Center in Urban Rail Transit

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Abstract: With the development and progress of society, urban rail transit has become the main means of urban people's walking, and the police command center of urban rail transit has gradually expanded, and the safety of urban rail transit has become more and more important. Urban rail transit adapts to the development of society, in order to ensure the safe operation of rail transit, we need to deeply innovate and study the function of the police command center of urban rail transit.

1. Introduction

Urban rail transit system as the main force of transportation, and urban rail transit has time-saving, labor-saving, energy-saving, environmental protection, large transport volume and green pollution-free transportation system. There are many types of urban rail transit, and the police command center of urban rail transit, as the control department of the traffic operation command of the city, can deploy the command center of each section according to the area and line. The police intelligent command center of urban rail transit, which integrates information, network supervision, communication and command, can quickly realize information linkage, better solve problems, help the public security department to obtain important information in the first time, control the scene, and the traffic information command department can obtain the relevant personnel information most conveniently.

2. Traffic Police Centre Profile

At present, with the development of our city and the progress of society, the rapid development of urban rail transit, more and more cities will put the construction and planning of urban rail transit on the agenda. The city traffic police command center, as the most important shunting command center of the traffic flow, can check and manage the operation of vehicles, people's passenger flow, equipment and so on through the large-screen linkage. With the continuous development of science and technology, the information construction of the city traffic police command center is becoming more and more perfect. For example, the information integration management of passenger information and the operation of rail transit will also be input to the police command center to form a system and become a perfect traffic information command platform [1](Figure 1,2).

Figure 1 Traffic police centre example 1

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Figure 2 Traffic police intelligent command centre

2.1. Composition of Traffic Police Centre System

The traffic police center is the production management system for directing, managing and coordinating the whole city's rail transit information system, mainly realizing the whole city network monitoring, coordinating command and making corresponding emergency plan measures, positioning the command center as the traffic data operation center. Traffic police industry is a work mobility, sudden, emergency industry, the first-line departments need to exchange information with the public security data center in real time, driving personnel, illegal handling, vehicle and other information timely and rapid inquiry to improve work efficiency.

With the rapid development of information technology, especially the promotion of 5G, people's means of obtaining information have undergone great changes, especially the demand for real-time information with strong demand for mobility. Mobile computing and wireless data technology based on 5G will bring new experience and unprecedented efficiency to traffic management. The whole mobile police communication scheme includes mobile police communication terminal and mobile police communication platform and terminal software system [2].

2.2. Functional scene of Traffic Command Centre

2.2.1 Mobile Police Terminal

CPU Qualcomm MSM86625 dual core 1.2G, storage 1G RAM +4GROM, display screen 5inch HD LCD Capacitor Screen (Resolution 480*800), Wireless Communication TD-LTE/TD-SCDMA/GSM (GPRS/EDGE), Camera 5-M pixel auto-focus HD with LED High Brightness Flash, GPS SirF3 Support A-GPS, Number According to interface Mini USB, ID card Special Encryption Module and Fingerprint Collection for the Second Generation Certificate of the Ministry of Public Security Third generation capacitive compression type in vivo fingerprint head.The use of these mobile police terminals has greatly improved efficiency.

2.2.2 Mobile Police Communication Platform and Terminal Software System

Terminal software and platform server software system, daily work: check all kinds of information that I need to deal with, such as case, police situation, notice, information inquiry: including national information inquiry and police platform information inquiry, personnel verification: personnel information verification, non-motor vehicle management: non-motor vehicle (battery car) information registration management, police support: emergency police emergency request nearby police support, audio and video forensics: law enforcement, patrol process audio and video recording system setup: system basic information settings.

2.2.3 Comprehensive Enquiries

Backstage automatic comparison of fugitives, from personnel to personnel association, associated driving license information, associated population information, associated drug-related personnel information, associated fugitive information, associated former offenders, associated vehicle from personnel association.

2.2.4 ID card fingerprint collection comparison

Including terminal ID data acquisition software and platform ID comparison server software and ID database. Data collection and comparison of identity cards.The Ministry of Public Security uses a special second generation card encryption module to read the name, address, date of birth, issuing authority, validity period and all information of photos of the second generation ID card.At the same time, it reserves the right to read the fingerprint data of the ID card, automatically store the records and upload the read ID card data in real time, automatically compare with the data of the three escapee database of the Ministry of Public Security, search and judge the same data content, and prompt the scene personnel. fingerprint data acquisition comparison pair, using the third generation capacitive press-type fingerprint module, extract the fingerprint image of the field personnel and generate the eigenvalue, store and upload the fingerprint image (eigenvalue) in real time, support the fingerprint comparison 1:1 and the fingerprint search 1: n.Printing and bank card use, including terminal printing and payment software and platform server software, on-site legal documents printing, support contact IC card, support contactless IC card, system implementation.

2.3. Current Development of Urban Rail Transit

In recent years, our government has continuously increased the strength of infrastructure development, and the third and fourth tier cities will also start to build a rail transit system. Nowadays China is the most rapidly developing country of urban rail transit in the world. By the end of 2017, a total of 34 cities in China have opened urban rail transit and put into operation,165 urban rail transit lines have been opened, and the operating line length has reached 5033 km. Among them, the subway is 3884 km, accounting for 77.2%; the others are only urban rail transit operation line length of about 1149 km, accounting for 22.8%(Fig.3).

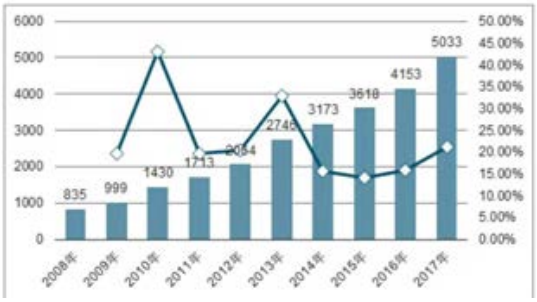

Figure 3 Development trend of urban rail transit mileage in China from 2008 to 2017

At present, China's urban rail transit is mainly subway. In addition, according to the needs of different urban development and the need to solve the problem of urban congestion, to build a transportation system that matches its urban traffic. China's railways grew significantly during the Eleventh Five-Year Plan period and maintained sustained growth during the 12th Five-Year Plan period. In 2008, investment in fixed assets exceeded 400 billion yuan, with China's first high-speed railway and Beijing-Tianjin inter-city railway opening to traffic.In 2009, railway investment exceeded 700 billion yuan, and railway investment increased by about 70 percent year-on-year, creating a record growth rate. By 2010, the number of high-speed railways operating in the country had exceeded 5,000 km. Until 2014, with the sustained development of our economy and the voice maturity of high-speed rail technology, the growth of investment in railway construction has increased significantly (Fig.4).

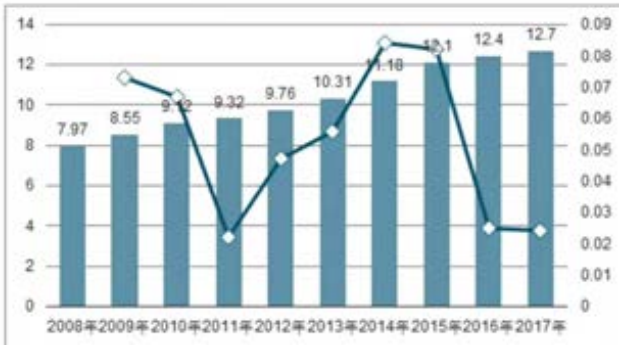

Figure 4 Trend of Railway Mileage Change in China from 2008 to 2017

3. Operation of Police Station Command Centre

With the development and improvement of urban rail transit, the work of the traffic police command center has become more cumbersome. In order to better complete a series of work, such as management, coordination and operation, the staff of the traffic police command center need to improve their professional quality, better grasp modern technology, and improve their information level. It is also necessary to improve the relevant infrastructure of the police command center to provide a good working environment for the command staff, and the improvement of these infrastructure is also good enough to build the traffic police command center [3].

3.1. Enhancing the Professional Skills of Police Station Officers

Learn to master the basic traffic investigation methods, improve their own traffic rules, traffic safety and other related professional knowledge.To develop the comprehensive ability of police station personnel, to develop the ability of police station personnel to use and access information, and to develop the ability of collective cooperation in conducting traffic investigation. Watch the relevant video and web pages, the relevant literature learning materials, fully understand the modern traffic management methods.

3.2. Infrastructure Improvement

Establishing and improving the infrastructure construction can greatly facilitate the traffic police command center to collect and integrate information, perfect the information platform construction, facilitate the work, and get the solution for the problems that arise in the first time.

4. Conclusion

In summary, the work of the city traffic police management command center plays an important role in the development of the city traffic operation, it can help the police staff to solve some public transport problems, and can strengthen the control of the city traffic information, so the police command center of each city should develop and study the local traffic line according to the development of the local city traffic, so that it can adapt to the local traffic development situation.

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