

# Traffic Organization and Traffic Safety in the Construction of Municipal Road Engineering

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**Abstract:** The article is to start with the national road traffic accidents in, respectively from the human, vehicle, road and environment four aspects analysis the influence of municipal road construction in the traffic accident the main reason, and for municipal road engineering construction in the process of traffic flow and traffic management characteristics and difficulties, and puts forward the prevent and reduce the occurrence of traffic accidents in the municipal road engineering construction process, corresponding measures ensuring traffic safety.

**Keywords:** Municipal Engineering; Construction; Traffic organization; Traffic safety

## 1. Introduction

Road traffic accident is a serious problem facing all countries. China is so, with the development of social economy, our country road mileage increasing year by year, motor vehicle retains the quantity increases unceasingly, the road traffic accidents occur frequently. According to the public security traffic management department, the number of traffic accidents has risen from 290 thousand in 1986 to 2002 more than 770 thousand, with an average annual growth of 6.3%. The death toll rose from 50 thousand to 109 thousand, with an average annual increase of 5%. Since May 2004 our country road traffic safety law formally promulgated and implemented since, although the traffic accident is increasing year by year, trend has been effectively curbed, but the amount of traffic accidents and death number is still a lot. In 2005, the national total of road traffic accidents 450254 and made into 98738 people were killed and direct property loss amounted to 18.8 billion yuan.

Municipal road engineering in the construction process has the same traffic safety, the same happened for a lot of traffic accidents, this paper from the influence factors of road traffic accident analysis to start, according to the municipal engineering construction process of traffic flow composition and characteristics to study the prevention and effective measures to reduce traffic accidents.

## 2. Traffic Flow Composition in the Construction of Municipal Road Engineering

In municipal road engineering construction period, due to the traffic block or certain traffic management measures, some traffic flow composition will be reduced. At the same time, according to the needs of the construction, in

traffic composition, construction vehicles, transport vehicles, engineering parties participating in the construction units of vehicles, increased. Based on safety considerations, not only to ensure the passage of transit vehicles, but also to the management of this part of the special vehicle itself and the traffic organization should pay special attention to. Municipal road engineering often and earthworks, drainage pipe canal project in the same section, so the construction process of motor vehicles include earthworks, drainage pipe canal project, must coordinate analysis. Earthworks vehicles main consideration relates to an excavator, loader, earthwork transportation vehicles; drainage tube drainage engineering vehicle mainly involves the loader, earthwork transportation vehicle, the pipe transporting vehicle, crane, check wells masonry brick, check the cover plate transport vehicles, sand, gravel, concrete transport vehicle reinforced template transportation vehicles and so on; road engineering transport vehicle mainly related to sand, gravel, cement stabilized aggregate, cement concrete, asphalt mixture, inspection manhole cover and a well seat, rainwater grate opening grate circle, route stone, brick sidewalks and other material transport vehicles. Other vehicles including design, construction, supervision, property owners engineering the participation of all parties and the relevant government departments to check to take a car and through the construction of the scope of the social vehicles.

## 3. The Characteristics and Difficulties of Traffic Management in the Construction of Municipal Road Engineering

Municipal Engineering is generally by the government investment in public projects, related to the life of the masses and the image of the city, government macro considerations tend to the time limit for a project requires very tight and land acquisition and demolition of the impact, land acquisition demolition did not solve the fashion, once solved to overtime, even 24 hours of operation, short time, domestic demand into a large number of materials, equipment and labor, peak traffic volume is relatively large. Municipal Engineering often long lines, covers a wide range, construction period is relatively long, also due to the road repair specialists, venue construction channel are temporary road, narrow roads, small turning radius, without pavement, under the influence of external climatic conditions, the rainy season or typhoon season, the construction, road muddy, slippery road difficult to walk, prone to traffic accidents. In both the transformation of the old city and the construction of the new municipal engineering, because of its long length, wide and closed to traffic is very difficult, resulting in a large number of social vehicles and pedestrians crossing engineering construction area and the formation of local traffic and the traffic flow for mixed traffic, construction to pay through the organization and management to bring very great difficulty. Municipal road construction, due to buried in the sewers and different, criss crossing, pipe channel construction and the construction of the pavement between cross, there is a big security risk. At present municipal engineering in construction organization basically is by the project Department of labor force and of machinery and equipment owned, confession material organization to finish up the, low degree of specialization, labor force quality is uneven, traffic safety awareness is weak, poor safety performance of the machinery and equipment, which also to the construction of the traffic management bring a certain degree of difficulty.

#### **4. Cause Analysis of Traffic Accident**

Road traffic accident is a special road traffic environment, because people, vehicles, roads, environment and the elements of the imbalance and accidental. Therefore, it is necessary to analyze the causes of road traffic accidents from the people, vehicles, roads, the environment, otherwise it will deviate from the correct track.

##### **4.1. Unsafe factors of people**

In the system of human, vehicle, road and environment, the vehicle is driven by people, the road is used by people, and the traffic environment should be managed by people. Therefore, people are the most important and the most active factors affecting traffic safety, we must pay sufficient attention to. According to the bulletin issued by the Ministry of public security on the 2005 national road traffic accidents, in 2005, in the national total

of road traffic accidents 450254 in, due to motor vehicle driving people causes the traffic accident of 417355, death 91062, accounted for 92.7% and 92.2%. Also, for non motor vehicle riding personnel and pedestrians caused traffic accident for many, 2005 therefore lead to traffic accident at which 20090, 4207 people killed, respectively, accounted for 4.5% of the total and 4.3%. From the perspective of the construction vehicle driver analysis: due to the rapid growth rate of the number of motor vehicle driver, construction vehicle driver cultural level is generally low, safe driving technology level is not high, the part of the driver lack of professional ethics, serious traffic violations, is main cause of traffic accidents. The potential adverse psychological and physiological factors such as distraction, excessive fatigue, inadequate rest, lack of sleep, drunk driving, poor physical health, and so on, are very common in the construction area.

Analysis of construction workers from non motor vehicle riding: not take the non motorized vehicles, seize the motor vehicle road; intersection, road grab the line Meng Shui; the traffic observation is also not enough; bicycle brake system failure or none at all; unskilled cycling, cycling and chased can caused the occurrence of traffic accidents. Analysis from the perspective of the construction personnel to walk: do not leave the crosswalk, underground tunnels, bridges; climb over the fence, crossing and obliquely crossing; arbitrary across the road vehicle, crossing the middle isolation belt; suddenly went on the road, suddenly moving vehicle response is slow, I do not know the measures; do not comply with the road traffic signal and all kinds of signs, etc., often lead to traffic accidents.

##### **4.2. Unsafe factors of vehicles**

Vehicle is the main element of modern road traffic. Vehicle technical performance is good or bad, has a direct impact on road traffic safety. In the traffic accident which happened in 2005, bicycle accidents occupy a certain proportion. The causes of such accidents are usually caused by the safety technical conditions of the vehicles. Such as vehicle brake failure, bad brake, machine a failure, failure and light vehicles loaded with super high, super wide, unstable due to overload, cargo lashing. For construction enterprises, due to the unit maintenance inspection system is not perfect, is not implemented, make some vehicles often because of sick driving, which is the vehicle itself the cause of the accident reason. In addition in some rural areas or construction sites, traffic management is relatively vacant, a lot of scrapped vehicles, illegal assembly of the road to the road traffic safety is also a serious road traffic safety threats.

##### **4.3. Unsafe factors in the road**

Construction area of road traffic safety in addition to the two factors of human, vehicle, construction area of temporary pavement technical grade, pavement, line of sight conditions is a basic element of road traffic safety and their impact on traffic safety is also very large. For construction of regional road narrow or damaged, a temporary detour turning semi through a small, roadside did not set up a barricade, warning and limit sign shortage, mark not clear is not standardized, symbol fuzzy illegible, will increase the incidence of construction area of road traffic accidents.

#### 4.4. Unsafe factors in the environment

The driving condition of the driver is affected not only by the road conditions, but also by the road traffic environment. And the road traffic environment mainly refers to the weather, road safety facilities and road traffic between the interaction between the participants and so on. The construction area air pollution seriously affects the line of sight, the road surface water accumulation mud affects the quality of the road, the influence of the construction of the visual distance and so on is the common accident hidden danger. In terms of traffic environment, due to the construction area of road traffic flow models in complex, mixed traffic seriously, people and vehicles mixed problem more prominent, car mixed state of the traffic accident is very serious this is due to motor vehicles, non motor vehicles and pedestrians pass on the same plane, the power of different, driving speed big difference, the traffic conflict points, therefore, traffic congestion degree of the more serious and more prone to traffic accidents.

### 5. Measures for the Prevention of Traffic Accidents in Municipal Road Works

People, vehicles, roads, four elements of the environment is a key link to solve the problem of high incidence of road traffic accidents. According to the features and difficulties of the traffic management of municipal road engineering construction process, the author thinks, to fundamentally reduce and prevent the occurrence of the traffic accidents and ensure traffic safety, reduce casualties and economic losses, must be from the following several aspects to do preventive work.

#### 5.1. To increase traffic safety management and education, reduce road traffic violations

People are in the core position in many factors of road traffic accident prevention. Strengthen people's awareness of traffic safety education is to ensure that an important means of traffic safety, in the municipal road engineering construction process, traffic safety education is divided into two parts, namely: the education on the driver of the vehicle and traffic engineering construction

management staff and team worker Ann education. But the motor vehicle driver should be treated differently because of the different subordinate relation.

#### 5.2. For the project department or the construction unit of its own or lease at a certain time of order

The management and education of the vehicle drivers or mechanical operators, which are managed by the site. Should be based on the license, to sign the traffic safety production responsibility form with the driver, in order to enhance the driver's sense of responsibility; to regularly organize pilot study of traffic laws, exchange of learning experience and how the car in complex situations, to watch the traffic accident case of video tapes, CDs, improve the comprehensive quality and ability of the driver in the complex situation of accident prevention, eliminating dangerous driving factors in the prevention of traffic accidents, the maximum occurred; to avoid low driving and driving are not highly skilled driver driving a vehicle, can not be avoided, to be strong the driving skills of learning and assessment, unqualified person resolutely repel; tight schedule, night construction, prevent fatigue driving, should be 2 ~ 3 class driver rotation operation, to ensure that drivers have sufficient rest time; no matter for vehicles Driving in the construction area or in the construction area, have to driver education, prevent the over-speed driving, Lane driving, drunk driving and other.

### 6. Conclusions

Through the engineering practice, we see not hard, the GBF honeycomb core dense rib floor concrete structural system can well solve the construction of large span problem, make buildings with space, cheerful, light weight, heat insulation, thermal insulation, sound insulation advantages, especially suitable for large-scale public buildings in offices, conference rooms, business field. But at the same time, we should also see the structure also exist, such as high cost, a honeycomb core is easy to be damaged, bottom plate perception is not good, some shortcomings and deficiencies, if summed up the experience in the process of gradually extending, and constantly improve the technology to reduce the cost, the technology should be will be more and more widely used.

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