

# IV-205 THE ANATOMY OF THE TRAFFIC SYSTEM IN TIANJIN, CHINA

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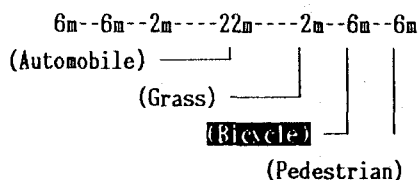
Tianjin City has become the third largest metropolitan area after Shanghai and the capital of China, Beijing. It has grown because it is in the center of the Bohai Gulf, Northeast China and Beijing, and is playing a very important part in economic affairs of China.

Tianjin City has six urban districts and four suburban districts. The general area of the City is 11305 square meters. About 3.5 million of the 8.7 million population live in the six urban districts.

This increasing population demands more effective traffic system. A 3-Ring, 14-Radial City Main Traffic Network has been completed to meet this urgent need.

The Outer Ring Road is 71.1 kilometers long, and 50 meters wide with 3 lanes going in each direction separated by a green grass belt of the same length as the Outer Ring Road itself.

The Middle Ring Road is 34.5 kilometers long. It is the same width as the Outer Ring though, the cross section of it is different than that of the Outer Ring:

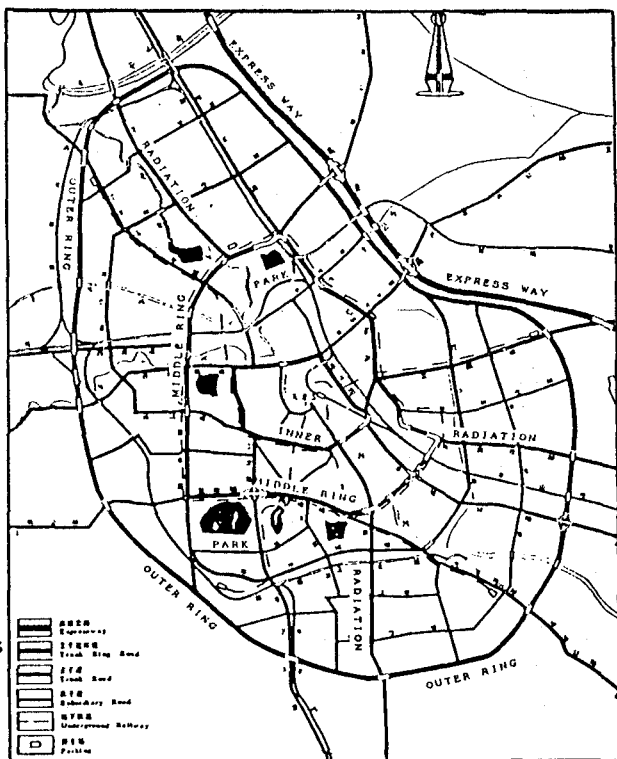


The Inner Ring Road is 15.4 kilometers long and 40 meters wide with bicycle lanes and pedestrian paths.

14 Radial Distributors crossing the 3 Ring Roads are approximately 148.5 kilometers long. 54% of them are 50 meters wide and rest are 40 meters.

On the Middle and Outer Ring Roads, the grade separated interchanges are provided at the intersections with most of the main Radial Roads. In each case special provision has been made for safe handling of bicycle traffic, usually taking all motorized traffic off-grade and reserving the ground level exclusively for pedestrians and cyclists.

The separate intersections promote average velocity of vehicles much greater than before. The velocity of a truck increased from 20.97 km/hour of 1985 to 27.11 km/hour of 1989. The



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bus velocity increased from 19.5 km/hour of 1985 to 26.3km/hour of 1989. The car increased from 23 km/hour of 1985 to 29.27 km/hour of 1989.

About 3.05 million bicycles are used in Tianjin City urban area by 3.5 million people. That is, general bicycle ownership is 87.1% in the urban area. Except for 0.84 million handicapped, children and old people, every person suitable for bicycle riding is reckoned to have 1.15 bicycles. And the amount of bicycles is still increasing. Every 10 bicycles are regarded as one ordinary car when traffic system specialists analyze the stream of traffic. So the amount of the bicycles are relatively equal to 305,000 cars. For this characteristic, the 3-Ring and 14-Radial Roads were designed to accommodate non-motorized transport, particularly for bicycles.

Almost all of the cars, trucks and other kinds of automobiles belonged to the government, government controlled organizations, and government owned companies until recent reformation. That is one of the reasons why vehicles were not more widely used than they should be.

About 128,000 automobiles and 120,000 motorbikes are running in the City, and the current vehicles are extremely and effectively used all day, instead of one return trip in one day with one car for one person as occurs in developed countries.

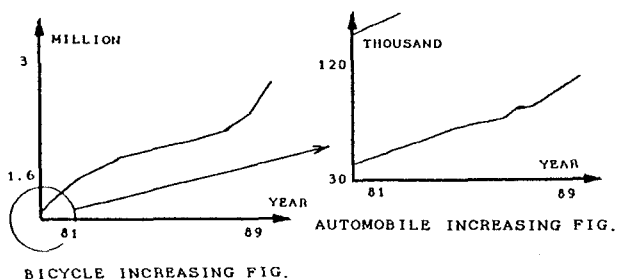
The well-made City Main Traffic Network is still not fully used by automobiles.

The advantage of the 3-Ring and 14-Radial Roads designed for convenience of cyclists

encourages people to use bicycles much more than to use public transportation. Bus usage has begun to diminish accordingly, thus a vicious circle occurred gradually. The buses travel more slowly in some places because of so many bicycles.

The improper proportion of automobiles and bicycles has been creating a tremendous problem to present traffic system. Although the number of fatal accidents has reduced (the number of death was 521 in 1985 and had been decreased by approximately 20% to 422 in 1990). It is still terribly exceeding the average level of large cities of developing countries. These accidents occurred mainly in mixed traffic conflicts because in many sections of the roads, bicycles are permitted to use main roads just as cars. Also, accidents occurred along the newly improved sections of the Middle Ring Road, where the increased speed of trucks led to an increase in pedestrian and vehicle accidents.

New strategic choices have been discussed in the Municipality. Public transportation is expected to be used widely. For getting a reasonable proportion of automobiles and bicycles, motorized trips including public transportation will be largely encouraged.



	BICYCLE	PUBLIC BUS	COMPANY BUS	WALK	CAR
1981	56.17	9.41	2.0	29.51	2.91
1990	74.6	8.3	4.0	10.6	2.50

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