

## DISCUSSION OF TRACK ELEVATION IN CHICAGO, ILLINOIS.\*

**M. K. Trumbull, Engineer of Track Elevation.**

The City of Chicago has maintained a track elevation policy for almost one-fourth of its corporate existence. The annual growth of track elevation has been consistent. The cumulative result is remarkable. The railroads have executed mile after mile of this kind of construction with scarcely a word from public or press. Scarcely a train has been delayed. How few know even the names of the men who design and execute the work and in whose care the public safety is placed. How vigilant and resourceful they must be is little appreciated by the passengers who are almost lifted while they ride.

To elevate a stretch of railroad is no simple task. Wherein lies the factor that transforms what would seem an ordinary piece of construction to one that is difficult? Traffic. Every large merchant who completely remodels his store and takes care of his customers simultaneously can have some idea of what track elevation means to the railroad man. Every manufacturer who rebuilds his plant while continuing his operations; every restaurateur, or hotel keeper, who does likewise can gain some notion of the engineers' achievement; but none can conceive of the difficulties incident to the protection of life and comfort not only of passengers riding on the trains but of those making up the flow of travel at street intersections.

With a congested right of way to begin with the railroad must rebuild from below the ground up and handle its traffic without delay at the same time. The Commissioner of Public Works permits the blocking of but three or four consecutive streets at any one time. Two miles of track elevation, for instance, must be divided into from four to five separate sections in each of which the operations are separate and distinct. The object of this programme is to offer the minimum of obstruction to street travel; especially to surface cars and the city fire department. This restriction upon the railroads increases the cost of the work, complicates the handling of trains and lengthens the time to complete the work. Even this programme cannot wholly eliminate the damming up of the arteries of travel contiguous to the particular section in which the heavy operations are being carried on nor the temporary suspension of normal business on the part of a few tradesmen who happen to be located immediately adjacent to the railroad tracks that are being elevated.

The engineer must carefully map out his programme for the season and follow this schedule with a daily "line-up" which has in view the logical sequence of each distinct operation. The nature of the work requires that heavy operations and large forces of men must be handled within limited areas. The time interval between each two operations must be calculated to a nicety. Upon consideration of the many complications involved one wonders at the dispatch with which the work is accomplished.

Track elevation, properly speaking, began on May 23, 1892, when the Illinois Central Railroad Company secured from the City Council an ordinance for the elevation of its tracks from 51st street to 67th street. An urgent necessity confronted the Illinois Central officials to make some quick and radical moves in order to place themselves in a position to handle the heavy passenger traffic to accompany the opening of the World's Fair the following season. Thus a creature of necessity, track elevation, had its birth. The population of Chicago at that time was 1,200,000. A crying need for a relief at a great number of grade crossings, where the railroads were annually killing and injuring many people, was felt. A few cases had been disposed of at important streets, by constructing viaducts over the tracks, to accommodate the street travel. The viaducts policy had, however,

become unpopular. The height at which it was necessary to erect the viaducts, above the original grade of streets, required the construction of long approaches, not only in the streets provided with viaducts, but in those that intersected the site of the approaches as well. Then, as necessity arose, nearby streets were selected for viaducts. The logical result threatened that the zones of city property contiguous to the railroads was soon to be enmeshed in a network of approaches which would not only offer long and heavy grades to street traffic but would considerably depreciate the value of the property affected.

The track elevation idea was eagerly grasped by the city administration. Press and public alike demanded that all of the railroads within the city limits should forthwith proceed to elevate their tracks. Responsive to this demand, but with profound deliberation as to the feasibility of the programme, the City Council, within nine months after the passage of the Illinois Central ordinance, on February 23, 1893, passed a General Ordinance which provided for the elimination of all grade crossings in the city by track elevation. This ordinance was too comprehensive.

The railroads declined to enter into the wholesale scheme of construction expense. The administration thereupon made a survey of those zones in which the street crossing travel was most dense and decided to treat each zone separately, and where necessary, to further sub-divide each into elements of reasonable length.

Proceeding upon this theory the City Council, on July 9, 1894, passed an ordinance for the elevation of the tracks of the Chicago, Rock Island and Pacific Railway from Archer avenue to West 69th street and the tracks of the Lake Shore and Michigan Southern Railway from Archer avenue to State street. Less than seventeen months had elapsed after the passage of the General Ordinance. In this short period the Council found that it had started on the wrong track, took its bearings, and threw the helm to another course. Fair sailing was soon encountered and the good ship has not swerved since.

During the following four years seven separate pieces of track elevation were provided for. This meant continuous labor on the part of the city administration and the railroads.

The first appropriation for the department was embodied in the budget for the year 1898.

Former Alderman Walter J. Raymer, was tendered the office as Mr. O'Neill's successor. This was a promotion from the Purchasing Department, in which he had served with distinction as its head.

Forty-two separate or original ordinances listed on pages 24 to 28, have been passed in the last seventeen years, or an average of about two and one-half per annum. With this period as a perspective, a glance at the first plat above referred to is of interest.

By the provisions of the General Ordinance the city was divided into three districts which are shown on Plates I and II. All tracks within District I. were to have been elevated by January 1, 1895; all tracks within District II. by January 1, 1897; and all tracks within District III. by January 1, 1899. Thus the railroads were required, by this ordinance, to elevate all their tracks within a period of six years. During the seventeen years that have elapsed since its passage the population of Chicago has been increased 85 per cent., until to-day the city numbers 2,200,000 inhabitants. Not much work has been done in District I. There has, in fact, been little necessity or demand for track elevation within this area. Nearly all the tracks in District II. have either been elevated or track elevation has been provided for. District III. offers much for a healthy growth of track elevation relief for the grade crossing evil.

Seventy-four per cent. of the work, for which ordinances have been passed, has been completed. The 148.72 miles of railroad roadbed, already covered by track elevation ordinances, is approximately 44 per cent. of the total mileage of roadbed within the city limits. Basing an estimate on this percentage and assuming:

\*Abbreviated from a report to Walter J. Raymer, Commissioner of Track Elevation, Chicago, Ill.