Chapter V

RAILROAD TRANSPORTATION

Des Moines is adequately served by railroads and for the most part the location and arrangement of these facilities and the methods of handling freight and passenger traffic into and out of the city are well suited to the city's needs. The majority of the facilities are so arranged that they can fit into the future requirements of the city.

The growth of the city in the last fifteen years, together with the tremendous increase in urban vehicular traffic indicates, however, that some rearrangement of the existing railroad facilities and also modification in methods of operation are desirable. Unless certain changes are brought about as hereinafter recommended, both the city and the railroads involved will be confronted with unsatisfactory and uneconomical conditions. The necessary improvements are not impossible of attainment and can be gradually effected over a long period.

EXISTING RAILROAD FACILITIES

The location of the main lines and of the terminal facilities such as freight and passenger depots, classification yards, etc., of the several railroads serving Des Moines are shown on Plate Number 32. The majority of railroads are well located in relation to the city. Except for the single track of the C. & N. W., the railroads pass through the city in two well defined channels, and in areas that are not well suited for residential development.

The major railroad traffic crosses the city in an east-west direction through sections that have long been built up with industries or that will develop for such use in the future. In the eastern portion of the city there is additional rail traffic in a north-south direction through sections of the city that are sparsely settled. Here it will be possible to direct and control future growth so that it will not interfere or conflict with the railroads.

The city is served by seven trunk line railroads, two terminal switching companies and two electric interurban lines. The trunk lines are the following:

Chicago, Rock Island & Pacific Railway
Chicago & North Western Railway
Chicago Great Western Railway
Chicago, Milwaukee & St. Paul Railroad
Wabash Railroad
Minneapolis & St. Louis Railway
Chicago, Burlington & Quincy Railroad

The principal switching company is the Des Moines Union Railway which does the terminal switching.

The electric interurban lines are the Fort Dodge, Des Moines & Southern Railroad, and the Des Moines and Central Iowa Railroads. Both of these roads carry freight as well as passengers.

The number and routing of scheduled daily passenger and freight trains are shown graphically on Plates Number 33 and 34. There are fewer trains using the terminal facilities today than there were fifteen years ago, when a similar study was made of the transportation facilities serving the city. Twenty-one passenger trains use the Union Station and 24 the Rock Island Station each day (each station handled between 30 and 40 trains at the time of the previous study).

Passenger Stations

The city is served by three major railroad passenger depots. Two are located immediately south of and adjacent to the principal business district, and the third is located east of the Des Moines River. These major stations are the Union Station, Rock Island Station, and the North Western Station.

The Union Station, owned and operated by the Des Moines Union Railway, is located at the south side of the Court House Square fronting on Cherry Street. It is used by the Wabash, Burlington, Great Western, and the Milwaukee, and is well situated to serve these roads. The arrangement of tracks reduces the train capacity of this station and the efficiency of the layout. The tracks are all at street level and trains block traffic moving over Fifth Street.

The Rock Island has a passenger depot one block from the Union Station on Vine Street between West Fourth and West Fifth Streets. It is used also by the Minneapolis & St. Louis Railroad. It is served by two street level tracks which are used also for through freight train and switching movements, thereby reducing the efficiency of the station and causing interference to vehicular traffic.
Both of these passenger stations are closely confined and restricted against enlargement or rearrangement.

The Rock Island has an auxiliary station on its north and south line at East Grand Avenue. This station is used by the rocket trains which do not enter the main station.

The C. & N. W. has its passenger station in East Des Moines, on East Fourth Street between Walnut and Locust Streets. It is a stub end station served by two tracks. Here, too, the tracks are at street level and long trains block traffic. This station is not as advantageously located as the other stations. At present, four passenger trains use this station daily.

Freight Stations

The freight depots and major team track yards used by six of the trunk lines are located in the area south of Court Avenue, between First and Ninth Streets. Five freight depots are located here. Only the C. & N. W. and the Ft. D. D. M. & S. have their freight depots east of the Des Moines River.

The concentration of L. C. L. depots in the district south of Court Avenue and west of the river is a decided advantage both to the railroads and the city. This arrangement results in a minimum amount of interference with the major traffic routes and is conveniently located to the major points of freight origin and destination.

Classification Yards

Des Moines is an important junction point on the Rock Island System. Its main line from Chicago to Denver and the west as well as its main line from Kansas City to Minneapolis meet here. In addition, several other branch lines radiate from Des Moines. The principal classification and terminal yard of the Rock Island is situated in East Des Moines east of Short Line Junction.

The Chicago & North Western enters the city from the north and for a considerable portion of its route follows along the edge of a residential district to reach its main classification yard and terminal located north of Des Moines Street. The industrial development along this line is confined almost entirely to the section between University Avenue and Des Moines Street. All trains are made up and broken up in this yard, which is used also for storage and handling of passenger train equipment.

The Chicago Great Western Railway enters from the southwest and cuts across the city diagonally to Short Line Junction, and then proceeds northwardly through the city. Its route through the city is well beyond the congested areas. Its principal terminal yard is located in the southwest part of the city between S. W. Fourteenth and S. W. Twenty-first Streets.

The Chicago, Milwaukee & St. Paul Railroad enters the city from the west and terminates its freight operations in the yard of the Des Moines Union Railway, and its passenger trains operations at the Union Station.

The Wabash enters the city from the southeast, using the tracks of the Des Moines Union Railway. Its road trains are broken up and made up in the East Eighteenth Street yard of the Des Moines Union where they are classified for interchange and for the freight house and team tracks.

The Minneapolis & St. Louis Railway enters the city from the west and parallels the line of the Rock Island. Its terminal facilities are along Market Street between West Sixth and West Eleventh Streets; all of its switching and classification work is done at this location.

Two branches of the Chicago, Burlington & Quincy Railroad serve Des Moines, and they cross the city in an east to west direction. South of the Raccoon River it parallels the line of the C. G. W. Its main yards are situated along Elm Street between West Second and West Ninth Streets. This yard is crossed at grade by all streets except Seventh Street.

The Des Moines Union Railway is entirely a terminal switching road. In addition to providing the freight and passenger terminal facilities of the Milwaukee and Wabash lines it serves as an intermediate carrier in the interchange of freight between all roads. It acts as a switching line for many of the trunk lines, because it serves directly most of the industries.

The Des Moines Terminal Railway owns tracks that serve the important industrial district bounded by the Raccoon River, Elm Street, West Second Street, and West Eleventh Street.

The Fort Dodge, Des Moines & Southern Railway (electric) enters the city from the north, paralleling the main line of the Rock Island to Short Line Junction at which point it turns west to its terminus at East Seventh and Court Avenue at the base of Capitol Hill. It does a considerable interchange traffic with the other carriers through the Iowa Transfer and does passenger business.

The Des Moines & Central Iowa Railroad also is an electric interurban line handling both freight and passenger traffic. It comes into the city from the north. Its main freight yard is in the northwest part of the city and is known as the Flint Yard. Its freight and passenger depots are located at West Second Street and Grand Avenue bordering the central business district on the north.
UNIFICATION OF TERMINAL OPERATIONS

Consolidation of terminal facilities and the unification of operations has prevailed at Des Moines in varying degrees for many years. Further moves in this direction would not involve new or radical changes.

Plans for improving existing railroad conditions might involve extensive rearrangement of tracks, and other terminal facilities. Especially would this be true in the area west of the Des Moines River where the principal railroad terminals are located and where there are also a large proportion of the city's industries and warehouses and wholesale establishments. To acquaint the public with possible improvements in railroad facilities, a comprehensive plan was proposed in the earlier report which incorporated all changes that would increase efficiency of railroad operation and remove congestion.

In the years which have intervened, railroads have made changes, improvements, and extensions. The anticipated increase in traffic became a decrease, so that many of the proposed changes are not now as urgent as they were fifteen years ago. However, the basic principles which underlie the previous recommendations apply with equal force today, so that it is still possible to materially improve operating conditions within the terminals by putting into effect such of the earlier proposals as the railroads feel are economically justified under existing conditions.

There are changes in existing operating methods that would benefit the railroads by insuring greater efficiency and economy of operation. Changes of this character would likewise be beneficial to the traveling public and the shippers. It is for the railroads and not the city to initiate such changes, just as they did in the past when the unification of certain operations and the use of joint facilities were found to be practicable.

In recent years further study has been given by the railroads to additional consolidations of existing facilities and also to extending the unification of terminal operations. These have included the possible abandonment by the Chicago & North Western of both its passenger and freight depots and the utilization by this road of the terminal facilities south of the central business district.

The consolidation into a single location of the L. C. L. freight house operations of several other roads has also been under consideration. Similar studies have been made with a view to combining the classification yards and other terminal facilities and operations of several of the roads.

Both the railroads and the public have at various times in the past studied the question of providing a single union passenger station to replace all existing ones. Various locations have been suggested, none very far removed from the present stations. The proposed locations included the present site of the Union and Rock Island stations, an area at the base of Capitol Hill, and the east bank of the Des Moines River.

A single union station would be desirable from many viewpoints, but would involve large expenditures, street closures, and similar adjustments. It is reasonable to conclude that when the railroads are convinced that the greater economies of a single union passenger station justify the improvement, it will be made.

The most urgent transportation problem affecting both the city and the railroads is the elimination of certain grade crossings that are hazardous and result in delay. In the discussion of such crossings, further reference will be made to rearrangement of or elimination of certain railroad facilities.

GRADE CROSSINGS

Major streets are crossed at grade by railroads at some seventy-five locations. Some of these crossings are protected by lights or gates; others have no protection against the approach of trains. The distribution of these grade crossings throughout the city is shown on Plate Number 35.

A comparison of the number of railroad grade crossing accidents with other traffic accidents along the streets of the city shows very clearly that, from the standpoint of safety of travel, the grade crossing presents much the smaller problem. The traveling public is much more conscious of the potential danger that awaits at grade crossings.

The greatest number of grade crossing accidents occurred where Avenue Frederick Hubbell is crossed by the tracks of three railroads. Another hazardous crossing is where the C. G. W. crosses the south approach to the Ninth Street bridge over the Raccoon River. Next in order are the East Sixth Street crossings, and the East Ninth Street crossing of the C. & N. W.

One of the major factors entering into the determination of whether a particular crossing should have its grades separated is the extent to which traffic along the thoroughfare is interrupted and delayed by the train movements. Measured by this criterion, the most serious grade crossing problem confronting the city at this time is along the Chicago & North Western Railway between Court Avenue and Des Moines Street. There are other grade crossings adjacent to the central business dis-
trict that will also require attention at an early date. In the outlying districts the grade crossing problem is not now particularly serious. The major purpose of discussing the majority of the crossings is to call attention to the present situation and to give some indication how grade separations may be effected when the need arises.

**Inner Group Crossings**

The crossings that logically fall into this classification may be separated into the three following groups:

A. Along C. & N. W. between Court Avenue and Des Moines Street.

B. Area west of the river between First and Eleventh Streets south of Court Avenue.

C. Area east of the river between First and Twelfth Streets south of Court Avenue.

**Chicago & North Western.** The solution of the grade crossing problem along the C. & N. W. involves the future operation of the present passenger and freight stations of this road. Of the five major streets crossed by these tracks, the heaviest traffic is along Grand Avenue. Court, Walnut, and Locust are also among the heaviest traveled streets in the city. These four streets are the only thoroughfares that cross the river into the central business district from the east.

The crossing at Court Avenue is the least important of the group because the railroad switching movements over this street are relatively few and at infrequent intervals. The tracks here are used only for making interchange movements with the other roads to the south and to serve a few industries along Fourth Street south of Court Avenue. The same situation applies also to Walnut Street.

The passenger station is situated between Walnut and Locust, so that traffic along the latter is interfered with to a greater degree because of the switching incident to the arrival and departure of trains at the station. The switching movements over the Grand Avenue and Des Moines Street crossings are much more numerous and delays to traffic of greater duration. This is due to the switching operations necessary to serve the L. C. L. freight station and team tracks north of Grand Avenue, in addition to the other train movements to reach the passenger station and other connections to the south.

Court Avenue is the only one of the five crossings that has no crossing protection; the others are all protected by gates.

If the passenger and freight stations of the C. & N. W. are to remain and be operated as at present, the separation of grades will be necessary at Grand Avenue. The construction of the additional river crossing to connect Keosauqua Way and Des Moines Street will eliminate the grade crossing at Des Moines Street. The separation of Grand Avenue will be a costly undertaking, both from the standpoint of construction costs and property damages. The separation would require a viaduct over the tracks.

On several occasions in the past the question of abandoning the use of the C. & N. W. passenger and freight stations at East Fourth Street has been under consideration; and suggestions have been made for carrying on those operations in existing depots located in West Des Moines. A definite decision should be reached on this important matter. There is much less use of these facilities today than was the case fifteen years ago. Moreover, the need for these facilities in their present location is no longer as great as it was.

If the suggestions for abandoning freight and passenger operations here should be put into effect in the interest of economy of terminal operations, then the separation of grades at these streets would never have to be made. With the switching confined to serving the industries along Fourth Street, the interference with and interruption to vehicular traffic will be so greatly reduced as to make the condition no worse than it is now at Court Avenue.

This abandonment of the freight and passenger yards and stations will involve the construction of a new connection between the C. & N. W. and the C. R. I. & P. Ry. between Hull Avenue and Guthrie Avenue. The North Western could then proceed into any of the downtown terminals over the tracks of the Rock Island. The industries along East Fourth Street could be served by switching from the south. This might even be electrified at some future date. That portion of the C. & N. W. tracks lying between University Avenue and Hull Avenue could then be abandoned, thus eliminating several other serious grade crossings.

It is recommended that the city and the C. & N. W. definitely outline a program for the abandonment of the passenger and freight stations in East Fourth Street.

**Area West of the River.** The grade crossings in West Des Moines south of Court Avenue are serious problems. Direct access between the sections of the city south of Raccoon River and the business district is limited to First, Fifth, Seventh, and Ninth Streets because of the river crossings at the south end of those streets. All the north and south streets cross the railroad tracks at grade, except
Seventh Avenue. (Completion of the First Street underpasses will make a second outlet to the south.) A viaduct over the tracks along Seventh Street now serves as the only unobstructed north and south route. Besides being heavily traveled, its north approach grade is very unsatisfactory.

The recent construction of the new Raccoon River crossing connecting South East First Street with the west bank of the Des Moines River will aid materially in routing through traffic within the congested industrial district. By means of this structure practically all of the through traffic that formerly used Jackson Avenue and the Fifth Street bridge can be diverted to Second Avenue and the new River Drive along the west bank. In working out a solution of the grade crossing problem in this important section of the city, it is essential that through traffic passing between the portion of the city south of the Raccoon River and the central business district, and the area to the north, be given an opportunity to segregate itself from that traffic which is local to the railroad and industrial district.

The crossings at Second Avenue should be separated by the construction of a viaduct extending from Tuttle Street to some point between Court Avenue and Walnut Street with the intersection at Court Avenue separated to avoid adding to the congestion at that intersection. This viaduct can be so designed as to avoid objectionable features of the present Seventh Street viaduct. The grades can be improved and the street beneath the viaduct can be made accessible and available for traffic desiring to reach industries abutting on this street. The construction of this viaduct should be placed on the grade crossing elimination program for early attention.

Traffic studies made within recent years show that more traffic is delayed and for a longer period on West Fifth Street than at any other grade crossings in this district. Through traffic should be discouraged from using this street because of the great interference occasioned by the switching necessary to serve the Rock Island passenger station and yard. The approaches indicated on the Major Street Plan for connecting the new Raccoon River crossing with Second Avenue and the West River Drive, together with the viaduct in Second Avenue proposed here, should succeed in clearing up the present objectionable condition. The drive along the north bank of the Raccoon River from Ninth Street to First Street will also aid materially in clearing up conditions in this district.

**Area East of River.** East Sixth Street is the most important major thoroughfare in this area, and it will continue to increase in importance. Therefore, the grade crossings on this street with the tracks of the Des Moines Union, Rock Island and C. B. & Q. should be eliminated by the construction of a viaduct in a manner similar to the separation over East Fourteenth Street.

**Outer Group of Crossings**

These crossings group themselves as follows:

B. C. G. W. through South Des Moines.
C. C. & N. W. north of Des Moines Street.
D. Rock Island and M. & St. L. west of West Eighteenth Street.
E. West Des Moines along the Des Moines & Central Iowa.
F. East Des Moines southeast of East Eighteenth Street.

From Short Line Junction north to the city limits the Ft. D., D. M. & S., Rock Island and C. G. W. cross the following seven major streets at grade:

- Dean Avenue
- Grand Avenue
- Avenue Frederick Hubbell
- University Avenue
- Easton Boulevard
- Washington Avenue (proposed)
- Sheridan Avenue (proposed)

Avenue Frederick Hubbell carries the most traffic of all these thoroughfares according to recent surveys. None of these crossings requires immediate attention because the number and frequency of train movements are light, causing little interruption to street traffic. Four of the existing five crossings are protected with automatic crossing lights, so that the danger is further minimized. As the traffic grows, the crossings first requiring separation will be University Avenue, Avenue Frederick Hubbell, and Grand Avenue.

The presence of a new storm sewer paralleling these railroads now makes it possible to separate grades at all the crossings north of Dean Avenue by street underpasses with very little if any track elevation, although it might be desirable for other reasons to raise these tracks several feet. At Dean Avenue the most feasible method of separating the grades will be by street overpass because of the spread of the tracks as they approach Short Line Junction.
The next series of grade crossings are those along the C. G. W. through the southern part of the city. There are seven crossings at existing and proposed major streets. The existing crossings include:

South end of Ninth Street bridge over Racoon River
Jackson Avenue
S. E. First and Van Buren Avenue
East Sixth Street
Scott Street

The only one of these crossings that has any protection is at East Sixth Street, which is provided with automatic flashing lights. This is a very heavily traveled artery to the southern part of the city and will be the first of these crossings to require grade separation. A street underpass appears to be the most feasible method of separating the grades at this point, with some track elevation needed to insure drainage.

Another objectionable crossing created just recently by the construction of the two new river bridges at the Junction of the Raccoon and the Des Moines, is at the intersection of South East First Street and Van Buren Avenue. The railroad crosses these streets very close to the bridges. This condition imposes difficulties in attempting to work out a satisfactory grade separation. If drainage conditions permit, the approaches to these bridges should ultimately be depressed under the railroad tracks.

The grade crossings at the Ninth Street bridge can be eliminated by reconstructing the bridge to clear the tracks as was done at the Seventh Street bridge. This method is favored by the sharp rise in the street leading to the bridge from the south. It will permit, also, separating the grades at two points to the west where the proposed drive along the south bank of the Raccoon River will cross the railroad tracks. The Ninth Street bridge is old and will have to be replaced in the near future.

Scott Street is destined to become a heavily traveled thoroughfare. If and when the railroad movements over the crossing increase to such an extent as to cause serious delays, the grade can be separated by a street underpass with a partial track raise to insure proper drainage.

Jackson Avenue is proposed as a major street, and it now forms a direct route to the Fifth Street bridge over the Raccoon River. There is every reason to believe that the construction of the two new river bridges connecting with Van Buren Avenue will alter the course of travel to such an extent as to minimize the importance of Jackson Avenue in the future. If, however, it should be necessary to separate grades at this crossing, the manner of effecting the separation will be governed by what is done at South East First Street and Van Buren Avenue.

Another series of grade crossings are those along the C. & N. W., north of Des Moines Street. There are five in all, three at existing streets and two at proposed major street extensions. These crossings would all be eliminated by the proposed rearrangement of the North Western.

In the western part of the city there are five crossings of proposed major streets by the Rock Island and the M. & St. L. Railroads west of Eighteenth Street and north of the Raccoon River and one proposed crossing south of the river. Only one of these is an existing grade crossing; the others are contemplated as extension of existing streets. They are:

Harding Road (proposed)
Forty-second Street (proposed)
Fifty-sixth Street (proposed)
Grand Avenue
Ingersoll Avenue (proposed)
Valley Drive and Fifty-sixth Street (proposed)

The Grand Avenue crossing at the C. M. & St. P. track is the only one that is now of concern. Although there are not many train movements over this crossing, the thoroughfare is a principal east and west artery through the city. The grades can be separated very easily by a street overpass or by raising the track over the highway.

The other crossings included in the group are on proposed extensions of major streets. Grade crossings at all of these points can be avoided by constructing viaducts over tracks when the streets are extended.

The Des Moines & Central Iowa crosses major streets at grade at five places north of its terminal at Keosauqua Way. From south to north these locations are:

University Avenue
Second Avenue
Sixth Avenue
Euclid Avenue (East of Des Moines River)
Euclid Avenue (West of Des Moines River)
The two crossings on Euclid Avenue have more train movements over them than do the others because they are close to the main yard of the D. M. & C. I. All of these streets are heavily traveled.

No special problems would be encountered in the separation of grades at these crossings. At Second Avenue the tracks should be carried over the street. At Sixth Avenue the street should be depressed under the tracks. At the other three locations the separation of grades can be accomplished easily by carrying the streets over the tracks on viaducts.

In the southeastern portion of the city there are seven locations where present and proposed major streets cross the railroads. These grade crossings are:

- East Eighteenth Street
- Scott Street and C. B. & Q. tracks (two locations)
- Scott Street and C. R. I. & P. (two locations)
- Scott Street and Wabash
- S. E. Thirtieth Street and Wabash
- S. E. Thirtieth Street and C. B. & Q. (proposed)
- East Thirty-eighth Street and C. R. I. & P (proposed)

Two of the streets, Thirtieth and Thirty-eighth Streets, are planned to be circumferential routes around the city, and in time will undoubtedly become very important traffic arteries. Scott Street forms an important route between the major railroad terminal and industrial district and the southeast part of the city. The grade crossings on this street will require attention before those in the outer part of the city. The East Eighteenth Street grade crossing should be eliminated when the Scott Street grade crossings are separated, as East Eighteenth Street will form an important connection to the northern part of the city east of Fourteenth Street which now is the only street between the river and East Thirtieth Street free of grade crossings.

The manner of separating grades at East Eighteenth Street should be by viaduct similar to the method followed in the Fourteenth Street grade separation. The crossings along Scott Street with the exception of the Wabash crossing can be separated by street underpasses with slight track elevations. The Wabash crossing will require a street overpass because of drainage conditions. All the other crossings in this group can be best separated by overhead viaducts.

The important grade crossings are so widely scattered throughout the city that each one may be dealt with independent of and without affecting the situation at other crossings in the same vicinity. This is quite fortunate, and it should encourage the making of the improvements, since the cost of any undertaking can be kept well within the limits of the city's financial means whenever conditions warrant carrying out any of the grade separations.