August 1, 1969

To the Graduate Council:

I am submitting herewith a thesis written by Dennis E. Quillen entitled "A Geographic Study of the Tennessee Central Railway: An East-West Transport Route Across the Cumberland Plateau of Tennessee." I recommend that it be accepted for nine quarter hours of credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Geography.

Major Professor

We have read this thesis
and recommend its acceptance:

Accepted for the Council:

Vice Chancellor for
Graduate Studies and Research

A GEOGRAPHIC STUDY OF THE TENNESSEE CENTRAL RAILWAY: AN EAST-WEST TRANSPORT ROUTE ACROSS THE CUMBERLAND PLATEAU OF TENNESSEE

A Thesis

Presented to

the Graduate Council of

The University of Tennessee

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

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by

Dennis E. Quillen

August 1969

DEDICATION

Dedicated to Mr. Hugh M. Ghormley, Oakdale, Tennessee.

The most knowledgeable steam railroader that I have ever known.

870125

ABSTRACT

The Harriman, Tennessee-Hopkinsville, Kentucky, routeway of the former Tennessee Central Railway is the only east-west rail crossing of the rugged Cumberland Plateau barrier in Tennessee and is one of a very few such rail crossings in the Southern Appalachian plateaus. The railroad's apparent good situation, however, has not resulted in either a large, dependable volume of traffic or a sound financial operation. After years of marginal operations, the Tennessee Central finally ceased operations on August 31, 1968. The line was subsequently divided into three segments and operations are now being conducted by the three respective new owners: the Southern Railway, the Louisville and Nashville Railroad, and the Illinois Central Railroad.

The purpose of this thesis was to provide a better understanding of this rail route; this material was presented in the form of a geographic-transport analysis of the Tennessee Central Railway, with emphasis being placed upon the plateau-crossing Cumberland section. Specifically, this thesis discussed the historical development, the decline, and the eventual cessation of TC operations; the line of road in terms of both the physical and political setting; the rail physical plant and operating procedures; and the TC's function as a freight hauler, including commodity tonnages and composition.

Material for this thesis came from four broad source categories: (1) personal interviews with numerous TC employees, (2) the author's personal experiences and observations, (3) Tennessee Central office records, and (4) the secondary sources, which included such valuable

references as the Margaret Campbell thesis and the vast amount of material found in the financial and trade publications such as Poor's, Moody's, and Railroad Gazette.

The Tennessee Central Railway Company was formed on February 1, 1922, but the rail line dates back directly to several predecessor companies and indirectly to the year 1866, the year of the first attempt to connect East and Middle Tennessee by rail. The line continued in operation until August 31, 1968, at which time a lifetime of marginal operations and a more recent history of ever-increasing annual operating deficits finally forced the firm into bankruptcy and thus paved the way for the threefold division of the line among the Southern, Louisville and Nashville, and the Illinois Central railroads.

As an operating unit the TC's Harriman-Hopkinsville line extended for a distance of approximately 250 miles across Middle and East Tennessee and a portion of southwestern Kentucky and in so doing crossed portions of two major physical divisions of the United States, the Appalachian Highlands and the Interior Plains. The rail line passed through 11 counties in the two-state area and through such cities as Nashville, Clarksville, and Hopkinsville. The greatest barrier to traffic movement over the TC routeway was provided by the eastern and western Cumberland Plateau escarpments and by the western escarpment of the Eastern Highland Rim. The total relief on the line was 1,630 feet--the high point of 2,028 feet above sea level was reached on the Plateau near Monterey; the low point, 368 feet, was reached along the Cumberland River west of Nashville.

After 1955 the Tennessee Central became a "freight-only" line.

Through service was provided by one train a day in each direction and these were supplemented by several local trains over various portions of the line. As a carrier of traffic the TC as a whole functioned primarily as a traffic terminator. The Cumberland section, on the other hand, served primarily as a traffic originator, the primary originating products being coal from Monterey and limestone products from Crab Orchard.

Although the Tennessee Central Railway Company has ceased to exist, the rail line is intact and is currently being operated by the three respective new owners. It would appear that the financial strength of these three railroads may be sufficient to improve the competitive position of the Hopkinsville-Harriman line and to insure that operations may continue for years to come.

FOREWORD

Several years ago this writer first became interested in a comparatively unknown short-line railroad known as the Tennessee Central Railway. The Tennessee Central was a 284-mile freight-only railroad that connected Harriman, Tennessee with Nashville and with Hopkinsville, Kentucky. The road was not outstanding in its efficiency of operations, in its length of road or in its feats of tonnage hauled; the road's uniqueness rested principally in the fact that it was the only east-west rail route across the Cumberland Plateau barrier in Tennessee.

Following a rather exhausting and sleepless four-day reconnaissance trip over the entire main-line trackage of the TC in March of 1965, which coincided with initial contacts with railway personnel and leads towards sources of primary data, the decision was made to undertake a geographical transport study of the Tennessee Central Railway.

Unfortunately, after much time and effort had been spent in gathering data and in the writing of this thesis--a time span extending over several summers--the TC met increasing financial difficulties and finally passed out of existence. The last day the TC was to ever operate was August 31, 1968, thus ending 66 years of service to its two-state territory of Middle and East Tennessee and adjoining portions of Western Kentucky. Although the TC ceased operations, the line of road itself has remained intact, but ownership has been divided into three segments and operations are being conducted by the Illinois Central, the Louisville and Nashville, and the Southern railroads, respectively.

Since the writing of much of the material presented in the following chapters predates the cessation of all TC operations, the wording treats the TC as if it were a continuing operation and not a defunct corporation. Whereas the history portions and such sections as the discussion of the line of road and the grades and curvatures would remain as valid as before, it should be recognized that significant operating and administrative changes have taken place. No doubt, too, profound changes in traffic make-up and movements will also have taken place under the new operations by the three participating railroads.

It would be appropriate at this point to recognize some of the many individuals who have helped to make this thesis possible. Without the time given and consideration shown by these cooperative persons it would have been extremely difficult, if not impossible, to have gathered the information contained in the following pages. First, I want to thank Mr. Hugh Ghormley of Oakdale, Tennessee, to whom this thesis is dedicated. Next, I want to thank the many Tennessee Central employees for their generous cooperation. Although a number of TC employees contributed to the work contained herein, I especially want to recognize the following persons for their time and helpfulness: William W. Glenn, J. R. Alexander, F. Brooks Bearden, J. R. Brewster, Zane E. Burns, R. E. Carrier, J. L. Fossick, Jr., C. B. Gotto, L. C. Hatcher, Carl Jackson, J. J. Judd, H. C. Knight, W. E. Manning, C. S. Parrish, J. M. Pewitt, Ernest Randolph, J. E. Sinor, Bertha F. Strobl, R. S. Tatum, and Jack White.

Further I wish to express my appreciation to my major professor, Dr. Loyal Durand, Jr., for his long-standing patience and helpful

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CHAPTER I

INTRODUCTION

The State of Tennessee is physically characterized by a variety of prominent landforms, one of which is the northeast-to-southwest trending Cumberland Plateau. The Plateau extends across the entire 120 mile width of Tennessee from the Kentucky boundary to the Georgia and Alabama borders. The coal-bearing and largely forest-covered plateau is known popularly both as the Cumberland Plateau and the Cumberland Mountains.[1]

The plateau as it stretches across Tennessee is wider in the north and narrower in its central and southern portions. The average width, measured perpendicular to its axis, is around 50 miles. The plateau comprises an area of about 5,380 square miles,[2] a little more than one-eighth of the state total land area. Whether approached from the Highland Rim to its west and northwest or from the Ridge and Valley to its east and southeast, the plateau in Tennessee rises impressively and, with the exception of the mountainous northeastern section, rather uniformly above the adjoining land surfaces. Approached

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[1] The term "Cumberland Mountains" is often popularly used to designate all sections of the Cumberland Plateau, whereas, technically, this term is reserved for the truly mountainous section of the plateau in northeastern Tennessee and southeastern Kentucky and is not used in reference to the predominantly flat-lying "typical" plateau areas.

[2] Harry J. Klepser, "Laboratory Manual for Historical Geology (Geology 113)" (Knoxville: The University of Tennessee, Revised January, 1957), p. 49. (Mimeographed.)

either from the southeast or the northwest, the plateau presents a barrier which rises to heights from several hundred to over a thousand feet above its surroundings. The southeastern front throughout most of its length features a remarkably uniform escarpment which rises steeply above the valley floors through which flow the Tennessee River and its tributaries. This steep and generally unbroken escarpment is known throughout most of its length as Walden Ridge; however, northeast of a natural break in the escarpment (as a result of faulting) at a point near LaFollette to the Kentucky line and beyond, the ridge takes the name Cumberland Mountain. On the other hand, the northwestern front of the plateau as it rises above the Eastern Highland Rim is also quite pronounced, but it is quite rugged and not nearly as uniformly straight as is the southeastern front.

The upland plateau surface above the escarpments within the State of Tennessee is relatively flat; its altitude above sea level averages around 2,000 feet. Exceptions to this generalization include the rugged Cumberland Mountains area along the northeastern part of the plateau in Tennessee, where elevations in excess of 3,500 feet are reached; the eroded anticlinal Sequatchie Valley and cove areas and the associated Crab Orchard Mountains; and the edges of the plateau, especially along the northwest front where youthful stream-downcutting has dissected and altered the uniformity of the plateau surface.

Lying as it does, almost perpendicular to and completely across the east-west axis of Tennessee, the plateau with its height differential and its steep and generally unbroken escarpment on both its east and west sides, is a formidable obstacle to be overcome in surface

transport movements. As is evident, the plateau as a barrier to land transportation is primarily associated with east-west traffic movements across Tennessee, although its influence upon certain north-south movements should by all means not be overlooked.

Owing to the northeast-southwest trend of the plateau, not only is it a very significant east-west transport barrier, it is also of importance as a north-south barrier, especially in consideration of traffic movements between points in East Tennessee and points to the north and northwest in Kentucky. Fortunately for north-south movements to and from East Tennessee, the rail lines and highways are able to take advantage of several natural routeways that afford a reasonably easy climb onto the plateau. These important routeways include the LaFollette-Jellico Gap, utilized by the Louisville and Nashville Railroad and U.S. Highway 25W; Elk Valley, which is used by the Caryville-Jellico branch line of the Southern Railway;[3] the Emory River Gap, followed by the Southern Railway's high-density subsidiary the Cincinnati, New Orleans, and Texas Pacific; and, possibly, the Tennessee River Routeway, which is used in part by the Louisville and Nashville tracks between Chattanooga and Nashville. Unfortunately, with one possible exception, no such natural routeways exist for the movement of east-west traffic across Tennessee.[4]

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[3]Newly-completed Interstate 75 between Caryville and Jellico uses neither the Elk Valley nor the LaFollette-Jellico natural routeways, but instead takes a route that necessitates a climb of the plateau escarpment.

[4]This possible exception would be the heretofore-mentioned Tennessee River Routeway west of Chattanooga utilized both by the Louisville and Nashville and by the Southern Railway's Chattanooga-Memphis

While the lack of advantageously located natural east-west routeways has not prohibited systems of east-west land transport, it certainly appears to have contributed to the present situation in which in the entire longitudinal extent of the Cumberland Plateau in Tennessee only four Federal highways and only one railroad crosses the plateau in an east-west direction. Two each of the highways are parallel to one another; thus, in effect, there are but two crossings. The highways are U.S. 70 and Interstate 40, connecting Knoxville and Nashville; and U.S. 64 and Interstate 24, which actually crosses the plateau diagonally between Chattanooga and Nashville. Significantly, in the 120 mile distance across the width of the state, from the Kentucky border to the north to the Georgia and Alabama borders to the south, the only east-west railroad cutting entirely across the plateau within the State of Tennessee is the Harriman-Nashville line of the Tennessee Central Railway.

The Tennessee Central Railway is significant not only in that it is the sole east-west rail route across the plateau in Tennessee, but it also is the only east-west rail crossing in the entire middle and northern sections of the Cumberland Plateau. In fact, the Tennessee Central and the Southern Railway's Chattanooga-Memphis line are the only two east-west rail crossings along the entire length of the Cumberland Plateau from Kentucky to Alabama. North of the Tennessee

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line. However, the location and situation of this natural routeway would make it of questionable value as a major Tennessee east-west routeway. Thus, for practical purposes, no natural routeway exists for east-west traffic movements across the Cumberland Plateau in Tennessee.

Central, the next railroad entirely crossing the Appalachian Plateaus in an east-west direction lies north of the Cumberland Plateau and within the Allegheny Plateau region of West Virginia. The Tennessee Central's nearest northern counterpart would be, strictly speaking, the Chesapeake and Ohio's Clifton Forge, Virginia-Huntington, West Virginia line, but under a broader definition the Norfolk and Western's Roanoke, Virginia-Portsmouth, Ohio line could conceivably be accorded this distinction.

Considering the Tennessee Central's uniqueness as an east-west rail carrier and the fact that the Cumberland Plateau area of Tennessee, both historically and at present, appears to be closely tied with the railway in regard to patterns of settlement and economic activity, it is felt that sufficient geographic relationships exist to merit an interest in a somewhat detailed study of the railway and of its significance and relationship to the plateau points served and the areas traversed. Accordingly, this thesis will be a case study in transportation geography. The main theme of this study is to examine the Tennessee Central as a mode of transport, particularly in regard to traffic functions and patterns of commodity movement. Supporting and providing background for the main points will be a general statement of the geographical setting of the railway (see Figure 1); a brief history of the rail line with emphasis upon the Cumberland Plateau segment; a look at the railroad in relation to the rugged terrain of the plateau; and a description of the railway's principal facilities, equipment, service, and operations.

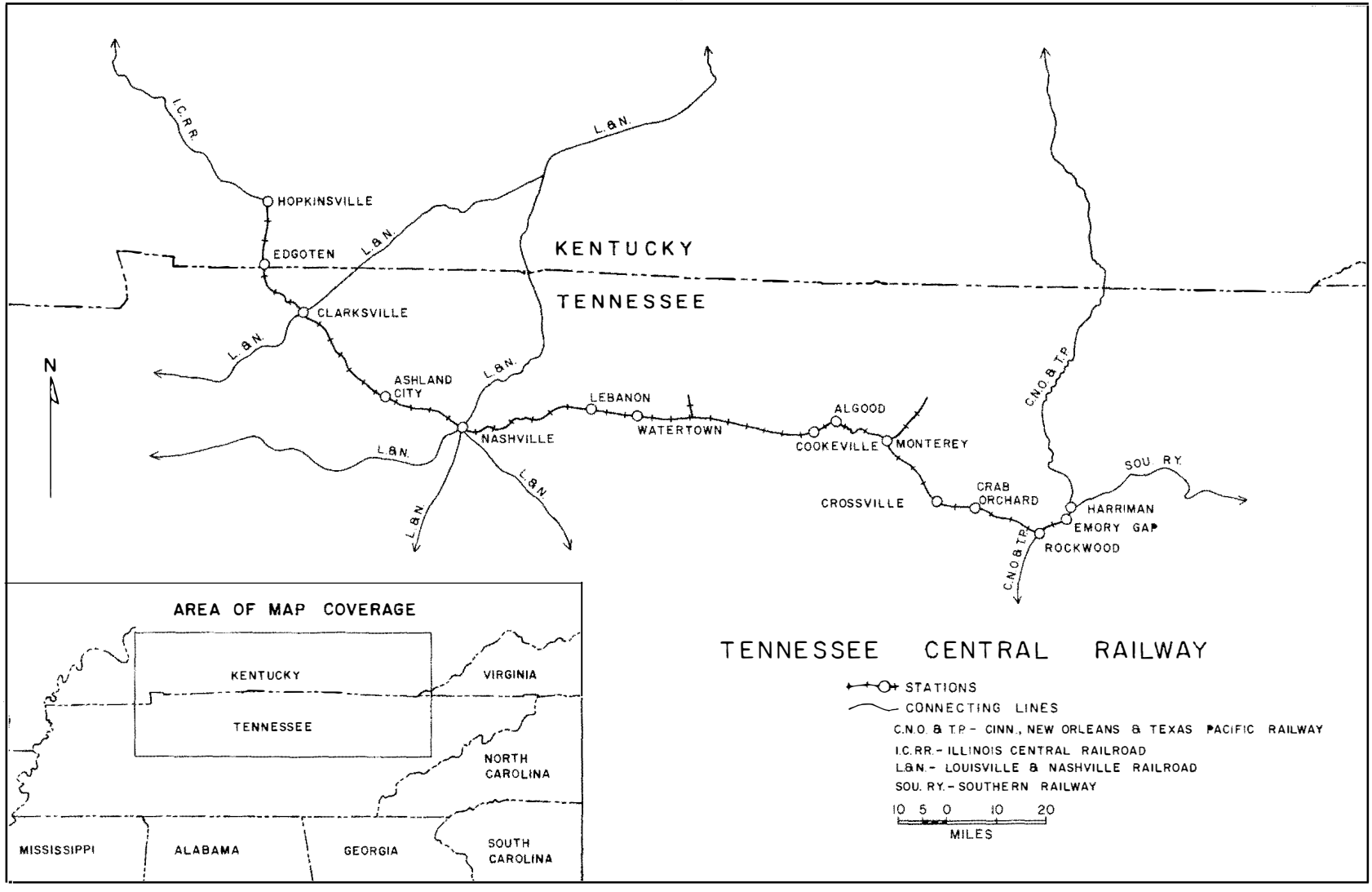

Figure 1. Route of Tennessee Central Railway and connecting lines.

CHAPTER II

THE HISTORICAL DEVELOPMENT OF THE TENNESSEE CENTRAL

I. EARLY EAST-WEST TRANSPORT PROPOSALS

Before the Railroads

Prior to the railroad era in general and to the construction of the Tennessee Central in particular, attention had been given to the need for an improved east-west transport route across Tennessee. Before any railroad had been proposed at least two roads or turnpikes had either been proposed or built between points in East Tennessee and the settlements in Middle Tennessee (then Davidson County, N.C.).[1] The Walton Road, opened in 1788, extended from a point near Kingston, Tennessee, to Nashville, and provided the first "improved" routeway between East and Middle Tennessee.[2] A few years later, in November, 1801, the general assembly of Tennessee, after referring to the Walton Road, passed an act incorporating and granting a charter to the Cumberland Turnpike Company.[3] In 1825 the House of Representatives recommended that the proposed great national road from Washington, D.C., to New Orleans be routed through the center of the state.[4] The present U.S. Highway 70 between Kingston and Nashville closely approximates the route of the old Walton and Cumberland roads.

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[1] Margaret Campbell, "A History of the Tennessee Central Railway" (unpublished Master's thesis, George Peabody College for Teachers, Nashville, Tennessee, August, 1927), pp. 1-2.

[2] Ibid., pp. 4-5. [3] Ibid., pp. 5-6. [4] Ibid., p. 7.

Early Rail Proposals

As the turnpike era was nearing its close and the canal-building era was beginning to reach its heyday, the first railroads appeared on the scene. In Tennessee, as well as elsewhere, the earliest railroads were considered not to be transport entities in themselves, but were considered supplementary to existing and proposed toll roads and inland waterways.

The first railroad in Tennessee appeared very early on the American railroad scene. The Memphis Railroad Company received its charter in 1831.[5] Possibly the first serious discussion of the possibility of an east-west railroad from the Mississippi River to the mountains of East Tennessee took place in 1836.[6] It is further believed that the possibility of a Knoxville-Nashville rail line was discussed at a railroad convention held in Knoxville in July, 1836.[7] Optimism for an east-west railroad across the state grew after an internal improvements act was passed by the legislature in 1852 that would have provided funds for such a road, but, largely because of the Civil War and internal political activity, this plan was never carried out.[8]

II. THE BEGINNING OF EAST-WEST RAIL CONSTRUCTION

The Tennessee and Pacific Railroad

This history of the present-day Tennessee Central Railway Company can be traced directly to the year 1866, the year of the first effective

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[5] Ibid. [6] Ibid. [7] Ibid., pp. 8-9. [8] Ibid., p. 10.

attempt to connect Middle and East Tennessee.[9] In May, 1866 the five-foot gauge[10] Tennessee and Pacific Railroad was chartered[11] and projected from Nashville to Knoxville.[12] The road was opened in 1870 between Nashville and Lebanon (31 miles); however, by this time plans for further eastward expansion to Knoxville had apparently been dropped. In January, 1877, the road was sold to the Nashville, Chattanooga, and St. Louis Railroad Company (NC&St.L) and became known as the railroad's Lebanon Branch.[13]

Although the now-abandoned Lebanon Branch never became a part of the present-day Tennessee Central nor was it ever extended eastward beyond its Lebanon terminal, the line in the years following its sale to the NC&St.L was to pay an important role in the historical development of the Tennessee Central.

The First Tennessee Central

After the failure of the Tennessee and Pacific to extend farther east than Lebanon, other projects were discussed and some were projected and built.[14] In 1880, the Tennessee and Sequatchee [sic] Valley Railroad Company was chartered and projected from Nashville eastward to the Tennessee River, a distance of 140 miles. This coal road was completed in 1882, a distance of 12 miles, between Spring City and

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[9] Ibid., p. 11.

[10] Henry V. Poor, Manual of the Railroads of the United States (New York: H. V. and H. W. Poor, 1872), p. 504.

[11] Ibid., 1881, p. 456. [12] Campbell, p. 11.

[13] Poor, loc. cit. [14] Campbell, p. 14.

Jewett.[15] Around 1893[16] this narrow-gauge road had its name changed to the Tennessee Central and filed to build a rail line from Nashville eastward to Spring City (and a connection with the Cincinnati Southern), and from there southeast across the Smoky Mountains to Murphy, N.C.[17] This Tennessee Central railroad, no way corporately related to the Tennessee Central of today, only operated intermittently over its 12-mile trackage and was sold in April, 1898[18] and evidently abandoned soon thereafter.

Other Railroad Projections

Other railroads projected in the 1880's included the Middle and East Tennessee Central Railway Company, which was chartered in 1883 and projected from Gallatin, Tennessee, to Knoxville (165 miles), but only completed to Hartsville.[19] Also in the 1880's an attempt was made to build the Tennessee Midland from Memphis to the Virginia state line. The rail line was completed to Perryville in 1889, but was unsuccessful in its attempts in 1887 and 1890 to enter Nashville.[20]

Railroad Projection Factors During 1880's

During the early 1880's there were probably three factors which promoted interest in the building of a railroad between Nashville and Knoxville. These included the facts that (1) the lack of railroad

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[15] Poor, 1890, p. 477.

[16] Railroad Gazette, April 8, 1898, p. 267.

[17] Ibid., February 1, 1884, p. 100.

[18] Ibid., April 8, 1898, p. 267. [19] Campbell, pp. 14-15. [20] Ibid.

facilities on the upper Cumberland Plateau was coming to the attention of people who felt that the prosperity of the section was dependent upon railroads; (2) many felt that Nashville needed another railroad outlet; (3) the timber resources of the plateau needed rail transportation in order to be fully developed; and (4) Nashville wanted access to the Cumberland coal fields, a situation that would, it was felt, enable it to prosper as a manufacturing city.[21]

III. THE BEGINNING OF THE TENNESSEE CENTRAL

The Nashville and Knoxville

It may well be said that the history of the present-day Tennessee Central began on March 22, 1884,[22] the date on which the Nashville and Knoxville railroad was chartered.[23] The line was initiated by a Mr. A. L. Crawford, a Pennsylvanian, who had made an examination of the mineral resources of the Cumberland Plateau. He acquired large coal interests and began looking for a transportation outlet.[24] Apparently, the original projection of the line was from a point on the Cincinnati Southern (Bledsoe's Stand) westward to Carthage, where a connection was to have been made with an extension of the Lebanon Branch of the NC&St.L.[25] A later projection announced for the road included a line

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[21] Ibid., pp. 12-13.

[22] George E. Bushnell, "General Notes" (unpublished Tennessee Central accounting records, February, 1920, and subsequent dates). Chronological history contained in these notes states that N&K was chartered March 8, 1884; organized May 22, 1884.

[23] Poor, 1892, p. 386. [24] Campbell, p. 16.

[25] Railroad Gazette, June 5, 1885, p. 368.

running westward from Knoxville to Gallatin.[26]

In 1884 an important meeting took place in Nashville in which railroad men considered the consolidation of the Nashville and Knoxville with the Middle and East Tennessee Railroad and other railroad interests. The purpose of such consolidation was to provide for the building of a railroad from Nashville to Knoxville close along the line projected for the Tennessee and Pacific. The feeling was, and rightfully so, that the NC&St.L, which owned the Tennessee and Pacific, never intended to extend this line from Lebanon to Knoxville.[27] This consolidation, however, failed to materialize.

By August, 1888, the 30-mile long, 4'-9" gauge main line of the N&K was open between Lebanon and Gordonsville, and by December the 8-mile Carthage Branch (Hickman Junction to Carthage) was open as well.[28] A year later the main line had been extended eight miles eastward to Buffalo Valley,[29] and by still another year (1890) the main line had been completed from Lebanon to Cookeville, a distance of 60 miles.[30] By 1892 the main line had been extended about four miles east of Cookeville to Algood, and further extensions of the line up into the Plateau to the coal fields of Overton and Fentress counties had been projected.[31] As of 1894, the delayed construction of the Algood-Monterey (Standing Stone) extension had been completed to Monterey

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[26] Ibid., January 15, 1886, p. 47. [27] Campbell, pp. 18-19.

[28] Poor, 1889, p. 692. [29] Ibid., 1890, p. 466.

[30] Ibid., 1891, p. 1109. [31] Ibid., 1893, p. 422.

on the Plateau, but no work had been undertaken on the extensions into the coal fields.

Thus, in 1894, the Nashville and Knoxville Railroad Company consisted of the 79-mile main line extending from Lebanon to Monterey and the 7.8-mile Carthage Branch.[32] With the completion of the eastern portion of the Nashville and Knoxville and through the joint efforts of the N&K and the NC&St.L's Lebanon Branch, a Nashville-Monterey rail route became a reality. The tracks extended, thus, to the top of the Plateau, and wound up the western escarpment.

The Tennessee Central Railroad (1893-1897)

A landmark date in the history of the Tennessee Central Railway would have to be August 25, 1893. On this date, Colonel Jere Baxter--who was to be the father of the TC and one of the South's legendary railroad figures--and others were granted a charter for the Tennessee Central Railroad. The company was authorized to build a railroad from the eastern terminus of the Nashville and Knoxville at Monterey to a point across the Plateau on the Cincinnati Southern Railway (Cincinnati, New Orleans, and Texas Pacific) between Glen Mary and Harriman.[33]

Colonel Baxter believed that an independent line of railroad should be constructed in an east-west direction across Tennessee. According to Baxter, he wished:

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[32] Poor's Manual of the Railroads of the United States (New York: H. V. and H. W. Poor, 1895), p. 212.

[33] Campbell, p. 26.

> to build a railroad through the coal measures of the Cumberland Plateau to the capital of the State and to relieve the people of the State from the blighting effects of a railroad monopoly permeating its entire length and breadth and entrenched especially in its central, most populous and richest division, by the construction of an independent line of transportation giving access to the great markets of the country and inviting the investment of capital in the development of the State's marvelous and unsurpassed resources.[34]

Baxter's plans called for the linking of three disconnected railroads--the Tennessee Midland, the Tennessee and Pacific, and the Nashville and Knoxville--and to connect these roads with the Cincinnati Southern, thus solving one of Tennessee's major transportation problems.[35]

Colonel Baxter was anxious for construction to get underway. Particularly, he wanted to (1) afford the desired independent eastern rail outlet, (2) unlock the natural wealth of the Plateau area that would attract capital and supply traffic, and (3) give substance to the movement toward acquisition of other properties and contemplated extensions.[36] By this time at least two other competing east-west roads had been proposed. The Nashville, Harriman, and Eastern Railway was to run from a point on the East Tennessee, Virginia, and Georgia (probably Knoxville) via Harriman to Nashville, and the proposed Nashville and Cumberland Gap Railroad Company planned to construct a line from Lebanon, via Cookeville, Wartburg, and Clinton to Cumberland Gap.[37]

Only five or six miles of grading had been completed on the Tennessee Central when the Panic of 1893 struck. Colonel Baxter

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[34] Ibid., pp. 24-25. [35] Ibid., p. 25.

[36] Ibid., p. 28. [37] Ibid., pp. 26-27.

bravely fought with all resources at hand to keep construction going and to save the railroad. In the face of the Panic he pursued his plan for connecting the three railroad links.[38] The Baxter interests were successful in getting terminal franchises from the city of Nashville, and in August, 1893 the Nashville Terminal Company was incorporated for the purpose of constructing terminal facilities at Nashville, including a bridge across the Cumberland River. Baxter worked in 1894 to gain control of the Tennessee Midland, but his attempt at acquisition fell through when negotiations were closed and the road was leased by the rival NC&St.L. Thus vanished all hope of acquiring the Tennessee Midland.[39]

Try as he might, Baxter could not get the Tennessee Central's financial situation resolved, and in April, 1895, the incompleted road went into receivership.[40] At this time about 30 miles of roadbed had been constructed and the Walden Ridge tunnel on the eastern escarpment was one-half completed.[41]

A Mr. C. O. Godfrey was appointed receiver of the Tennessee Central Railroad. He set out to renew construction activity, which for some time had been at a standstill. At that time the Tennessee Central was planned to be a road of about 100 miles in length, extending from Monterey to Knoxville via the towns of Crossville, Rockwood, Harriman, and Kingston. The TC, of course, would help to form, in conjunction with the NC&St.L and the Nashville and Knoxville, a rail line extending

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[38] Ibid., pp. 28-29. [39] Ibid., pp. 29-30.

[40] Ibid., p. 30. [41] Railroad Gazette, November 1, 1895, p. 732.

from Nashville to the Tennessee River at Knoxville.[42]

Expansion plans during this time were still being considered by the Tennessee Central's connector-to-be, the Nashville and Knoxville. In the spring of 1896, the N&K announced plans to build their own trackage into Nashville from Lebanon and to extend the road eastward through Fentress County to the Cincinnati Southern.[43] The latter extension, they felt, would open up the oil fields of Tennessee and also make accessible "some of the best black coal in the South." The N&K felt that the coking coal fields, lying farther to the south, in Cumberland County, would probably be tapped by the Tennessee Central.[44]

Meanwhile, during Godfrey's term as receiver of the TC, the railway construction made little headway, apparently largely due to work stoppages and promised financial backing that failed to materialize.[45] At this time two interest groups--one headed by the TC's former president, Jere Baxter, the other headed by the receiver, C. O. Godfrey--were contending for control of the property.[46] The Baxter interests in the spring of 1896 brought suit to have Godfrey removed as receiver, but this was later dismissed.[47] In the summer of 1896 plans were announced for the purchase of the Nashville and Knoxville, thus providing the opportunity of creating one line from Lebanon to Harriman and access to Nashville via the NC&St.L.[48]

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[42] Ibid., April 3, 1896, p. 243. [43] Ibid., May 1, 1896, p. 313.

[44] Ibid., May 21, 1897, p. 363. [45] Ibid., June 19, 1896, p. 443.

[46] Ibid. [47] Ibid., November 13, 1896, p. 799.

[48] Ibid., July 3, 1896, p. 479.

The Tennessee Central's construction and financial problems were not able to be resolved under receivership, and a court decree on January 27, 1897, ordered the road to be sold in order that it might be reorganized and its construction completed.[49] After several delays, the road was ordered under final decree to be put up for sale at an upset price of $125,000.[50] At the foreclosure sale in Crossville on June 24, 1897, the road was sold to a St. Louis syndicate headed by none other than Colonel Jere Baxter.[51]

The Tennessee Central Railway and Tennessee Central Railway Company

Just 10 days prior to the sale, June 14, 1897, Baxter and his associates incorporated and applied for a charter for the Tennessee Central Railway, a road that was to run generally from Kingston to Nashville, via Harriman, Rockwood, Crossville, and Monterey.[52] With the Tennessee Central Railway's purchase and reorganization of the Tennessee Central Railroad, the connection with the Cincinnati Southern to the east was assured and a renewed attempt was begun for an outlet to the west.[53] Just prior to Baxter's acquiring the reorganized Tennessee Central Railway, the Nashville and Knoxville had failed in its attempt to gain entrance into Nashville and much of the hope for an east-west road through the state had vanished. But, now, with Baxter very much on the scene again, hope was renewed for the completion of an

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[49] Ibid., February 5, 1897, p. 105. [50] Ibid., May 21, 1897, p. 364.

[51] Ibid., July 2, 1897, p. 484. [52] Campbell, pp. 32-33.

[53] Ibid., p. 33.

east-west road across the state into Nashville, and Baxter, already considered "'. . . one of the railroad giants of the South'" brought the building of the TC to its climax and turned it into the greatest of his "several enterprises."[54]

At the time of the sale of the TC Railroad to the TC Railway, about 21 miles of road had been graded between Monterey and Crossville and about 10 additional miles had been graded on other parts of the road.[55] On August 3, 1897, the Tennessee Central Railway requested that its charter be amended so as to permit an extension of the railroad from its projected terminus at Nashville to Clarksville, about 50 miles to the northwest. Under this arrangement the TC would be in two separate sections, Nashville-Clarksville and Monterey-Harriman, separated by about an 80-mile break between Nashville and Monterey. However, according to TC plans, Monterey and Nashville would be connected by means of a through traffic arrangement with the NC&St.L and the Nashville and Knoxville, thus, in effect, creating a system running from Harriman to Clarksville. At this time too, all grading between Monterey and Harriman had been completed and the roadbed was ready for tracklaying,[56] and by September 1898 the road had been completed from Monterey to Emory Gap, where a connection was made with the Cincinnati Southern;[57] thus, the Plateau had been crossed.

It appears that about this time the TC may have been considering building its Harriman-Clarksville line via Crossville, Sparta,

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[54] Ibid., pp. 21-24. [55] Railroad Gazette, July 2, 1897, p. 484.

[56] Ibid., August 13, 1897, p. 579. [57] Campbell, p. 34.

Murfreesboro, and Nashville, as such was reported in the trade publication Railroad Gazette.[58] Meanwhile, the N&K during the 1897-98 period apparently was still interested in expansion, both westward to Nashville[59] and eastward about 40 miles from Monterey to Glen Mary.[60] Also at this time, because of conflicting reports among various sources, there is some doubt as to whether the Tennessee Central still planned to extend its lines eastward to Knoxville or whether the Harriman-Knoxville linkage was to be provided by some arrangement with the Southern Railway's Harriman-Clinton-Knoxville line.

Around 1900 the idea of extending the Tennessee Central west to a connection with the Illinois Central, likely at Clarksville, was abandoned temporarily. President Baxter had become interested in constructing an independent north-south rail line, to be known as the Nashville, Florence and Northern, running from Florence-Sheffield, Alabama, via Nashville to Litchfield, Kentucky. After much opposition and question of legality, however, Baxter dropped the proposal and took up the original plan of a railroad to Clarksville.[61]

IV. TURN OF THE CENTURY DEVELOPMENTS

Right around the turn of the century a number of important developments took place that contributed significantly toward the

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[58] Railroad Gazette, December 30, 1898, p. 938.

[59] Ibid., October 8, 1897, p. 712.

[60] Ibid., April 1, 1898, p. 245. [61] Campbell, pp. 34-37.

building of the Tennessee Central into the system it is today. These included the building or acquisition of branch lines on the Tennessee Central Railway, the incorporation of the Tennessee Central Railway Company and the subsequent leasing of the Nashville and Knoxville, the chartering of the Nashville and Clarksville, the leasing of the Nashville Terminal Company, and the eventual consolidation of all the properties into the Tennessee Central Railroad.

The Tennessee Central Railway Company

On February 5, 1901, the Tennessee Central Railway Company (technically distinct from the then-existing Tennessee Central Railway extending from Monterey to Harriman) was chartered by Baxter interests for the purpose of constructing and operating a railroad from Nashville to Lebanon.[62] Such a plan would provide the Tennessee Central with direct access to Nashville and would, of course, be parallel to and in direct competition with the NC&St.L's Lebanon Branch. This decision of Baxter's not to use the Lebanon Branch as TC's access to Nashville was to create some considerable animosity between the L&N-NC&St.L interests and those of the TC.

Just after the Tennessee Central Railway Company's incorporation, the railway entered into an agreement with the Crawford interests for the leasing of the Nashville and Knoxville. The lease was to become effective upon the completion of the Tennessee Central line between Lebanon and Nashville.[63] With the completion of the Tennessee Central between Lebanon and Nashville and the subsequent leasing of the N&K

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[62]Campbell, pp. 37-38. [63]Ibid., p. 38.

the TC's heretofore separated segments would be joined accordingly to form a Tennessee Central "system" having full ownership of its road from Nashville to Harriman.

Branch Development on the Tennessee Central Railway

In January, 1901, the Tennessee Central Railway leased for 99 years the Cumberland Plateau Railroad, which had been incorporated on December 7, 1900,[64] for the purpose of building a line from Campbell Junction to Isoline (Cumberland County, 7.5 miles). Operations commenced, March 16, 1901.[65] By 1903 the line was completed just to the north of Isoline, but later 1.4 miles of track were taken up.[66]

Also in January, 1901, the Tennessee Central leased the Kingston Bridge and Terminal Company. The terminal company had been granted a charter on September 23, 1899, "for the purpose of building a railroad from a point on the west bank of the Clinch River to the town of Kingston, Tennessee, including a bridge across the Clinch River." At a later date the track was taken up and the grade abandoned.[67]

The Nashville and Clarksville

On April 20, 1901, Colonel Baxter and others were granted a charter for the Nashville and Clarksville Railroad Company, which was to build and operate westward from Nashville.[68] On August 8, 1901, a

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[64]Bushnell, notes indicate the date of incorporation as January 23, 1901.

[65]Bushnell, notes. [66]Campbell, pp. 85-86.

[67]Ibid., p. 87. [68]Ibid., p. 37.

hotly contested election was held in Davidson, Cheatham, and Montgomery counties. The election resulted in voter approval for public financial support for the proposed railroad.[69] Near the time of the election there had been a proposal to extend the line beyond Clarksville to Cairo, Illinois, where connections with St. Louis and the far West could be secured.[70]

The Nashville Terminal Company

After considerable negotiations, Colonel Baxter failed on behalf of his railroad interests to gain entrance to the Nashville Union Station or use of L&N terminal facilities.[71] Being unable to effect a lease with the L&N Terminal Company, the Baxter interests were forced to make further arrangements with the Nashville Terminal Company,[72] a Baxter-promoted company[73] that was incorporated in 1893, but had apparently remained dormant. The Nashville Terminal Company had been enpowered to construct terminal facilities at Nashville, including a bridge across the Cumberland River.[74]

Consolidation of 1902

Following the successful vote on August 8, 1901 giving financial support to the Nashville and Clarksville, Baxter began active promotion

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[69] Ibid., pp. 38-39. [70] Ibid., p. 38. [71] Ibid., p. 39.

[72] Ibid., p. 41. [73] Railroad Gazette, August 18, 1893, p. 629.

[74] Maurice N. Blakemore, ed., Moody's Analysis of Investments and Security Rating Books. John Moody. Railroad Investments (No. 13. New York: Moody's Investors Service, 1924), p. 1285.

for the unification of the five links of the partially completed east-west rail route across the state.[75]

Just prior to the act of consolidation in the spring of 1902 the situation in regard to each of the lines was as follows: (1) the Nashville and Clarksville was proposing immediate construction of a line connecting Nashville, via Clarksville, with a point on the Tennessee-Kentucky state line; (2) the Tennessee Central Railway Company was constructing a line from a connection with the Nashville Terminal Company at Nashville to a connection with the Nashville and Knoxville at Lebanon; (3) the Nashville and Knoxville owned and operated a line from Lebanon to a connection with the Tennessee Central Railway at Monterey on the Plateau; (4) the Tennessee Central Railway was nearing completion on a line of road extending from Monterey across the Cumberland Plateau to a connection with the CNO&TP near Harriman (Emory Gap); and (5) the Nashville Terminal Company owned the necessary franchises and was acquiring the real estate for the construction of terminal facilities at Nashville, upon which construction had begun.[76]

Briefly, the process of consolidation went as follows: The Tennessee Central Railway Company, the Nashville and Knoxville, and the Tennessee Central Railway agreed to sell to the Nashville and Clarksville Railroad Company all franchises and properties. In consideration of and upon receipt of these properties the Nashville and Clarksville agreed to contract for a 99-year lease with the

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[75] Campbell, p. 41. [76] Ibid., pp. 42-43.

Nashville Terminal Company for use of terminal facilities at Nashville, and, furthermore, it agreed to change its name from the Nashville and Clarksville Railroad Company to the Tennessee Central Railroad Company.[77] On April 30, 1902 the Nashville and Clarksville charter was amended; the change of name to the Tennessee Central Railroad Company was accomplished. The following day, May 1, the Tennessee Central Railroad acquired the above-mentioned properties and 99-year lease of the Nashville Terminal Company.[78]

V. THE TENNESSEE CENTRAL RAILROAD COMPANY

The Early Years

Shortly after the Tennessee Central Railroad came into existence a number of significant developments took place in rapid succession. Baxter in this period untiringly devoted himself to finishing the construction on the Eastern Division (Nashville-Harriman) and to preparing for the construction of the Clarksville Division.[79]

A significant date in TC history is May 27, 1902. On this date was celebrated the long-awaited completion and official opening of the entire Nashville-Harriman line. The occasion, a festive one indeed, was highlighted by the arrival into Nashville from Harriman a special train of dignitaries. The welcoming of the train--the first time in over 20 years that a railroad train, independent of the single system (L&N-NC&St.L) which controlled the railroads of Middle Tennessee, had entered the capital city--ushered in one of the greatest celebrations

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[77] Ibid., pp. 44-46. [78] Bushnell, notes. [79] Campbell, p. 50.

in Nashville history. Full credit for this momentous occasion was given to Colonel Jere Baxter. Six days later, June 2, 1902, the Tennessee Central opened for business with the running of both freight and passenger trains. The opening was inaugurated by the 5 a.m. departure from Monterey of the "Nashville Shopping Train."[80]

The contract for the Clarksville Division was let May 28, 1902, by which time an extension to Hopkinsville, Kentucky was also under consideration. By August, 1902, Hopkinsville promoters were seeking immediate entrance of the railroad into its territory. Because of the availability of coal in the area, Baxter was expected to build a line from Hopkinsville to the nearby North Christian coal fields. Accordingly, on August 8, 1902, the TC's charter was amended to authorize the company to extend the railroad into Kentucky by way of either Gracy or Hopkinsville. Work began on the 85-mile Western Division (Nashville-Hopkinsville) in June, 1902.[81]

During 1902 the branch line (the present Crawford Branch) extending northeastward from Monterey into the Cumberland coal fields was completed from Monterey to Hanging Limb. In July, 1903, the line was extended an additional 2.7 miles to Crawford and in December was further extended 6.3 miles to Wilder. The branch opened the way to the coal fields of Overton and Fentress counties. In 1904 a short 2.5 mile branch off the TC was to be opened between Ozone and Fall Creek.[82]

Also, around the spring of 1902, after the J. P. Morgan interests

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[80] Ibid., pp. 51-56. [81] Ibid., p. 57. [82] Ibid., p. 85.

had gained control of the L&N, there grew a widespread fear that rail competition would be destroyed at Nashville. It was felt that the Illinois Central would enter the city over the Clarksville-Nashville line and that the Southern Railway would enter over the Eastern Division. As a result of this there was considerable advocation for a time for State control of the Tennessee Central--a means thereby of maintaining competition.[83] State control never became a reality, but in 1905 both the IC and the Southern succeeded in gaining entrance to Nashville over the TC.

The Tennessee Central became involved in several controversies in 1902. One was that the Cumberland Coal Company, affiliated with the Tennessee Central, was underbid on an important coal contract, and Middle Tennessee began to have serious doubts about the benefits that this long-awaited east-west line was to have provided. Second, largely as a result of continued ill will between the Baxter interests and the L&N-NC&St.L interests, the L&N controlled NC&St.L announced in June, 1902, that it would no longer receive cars and freight from the TC at Lebanon. It would, in effect, "bottle up" the Tennessee Central. The NC&St.L maintained that the TC, through its construction of its own Lebanon-Nashville line, had voided their previous traffic agreement. Despite influence exerted by the City of Nashville upon the NC&St.L, this situation remained unsettled for some time. In fact, between 1902 and 1907, the NC&St.L would not interchange traffic with the Tennessee Central at any point of

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[83] Ibid., pp. 48-49.

connection.[84] Third, a suit was brought against the railroad seeking to enjoin the subscription by the City of Nashville for $1 million of TC capital stock. Fourth, because of these and other controversies, President Baxter, the man most responsible for building the Tennessee Central, resigned on May 1, 1903. He felt that the existing opposition to the railroad was largely opposition to him.[85]

A new president was elected and work was nearing completion on the TC's Western Division. By August, 1903, tracklaying had been completed between Nashville and Ashland City, and grading was 75 percent complete between Clarksville and Hopkinsville.[86] The tracklaying had been completed to Clarksville by October 1, 1903,[87] and the first train ran over this portion of the line on November 28.[88] The Western Division was finally completed to Hopkinsville in February, 1904.[89]

The First Receivership

The Tennessee Central was placed in the hands of a receiver on March 18, 1904, by order of the Roane County Chancery Court. This action resulted from claims for amounts due for construction and improvements. Satisfactory indebtedness arrangements were made, however, and the receivership was dismissed June 3, 1904.[90]

Just about at the time of the dismissal, press reports indicated

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[84] Ibid., pp. 59-62. [85] Ibid., pp. 63-64.

[86] Railroad Gazette, August 21, 1903, p. 610.

[87] Ibid., October 16, 1903, p. 750. [88] Ibid., December 11, 1903, p. 896.

[89] Campbell, p. 57. [90] Ibid., p. 66.

that work would soon begin on an extension from Harriman to Kingston (8 miles).[91] About a year later reports also stated that the TC would probably build a line from Clarksville, Tennessee up the Cumberland River to the Ohio River and would as well extend the Hopkinsville line to Paducah.[92]

The Lease of the Tennessee Central

Press reports indicated in the spring of 1905 that the St. Louis-San Francisco Railway would soon take over the Tennessee Central.[93] This did not turn out to be correct, but a "takeover" of the TC did occur on July 1, 1905,[94] when the Southern Railway and the Illinois Central Railroad secured a three-year option on a controlling interest in the Tennessee Central and the Nashville Terminal Company. Significantly, the contract contained a clause giving the rights of purchase to the Southern and the Illinois Central.[95] From July 1 to December 1, 1905, the Tennessee Central was operated for the joint account of the IC and the Southern. On December 1, 1905, however, the Tennessee Central was, for operating purposes, divided at Nashville.[96] The Illinois Central operated the Western Division (Hopkinsville-Central Junction, Nashville) and the Southern operated the Eastern Division (Southern Junction, Nashville to Harriman).[97] The Nashville Terminal

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[91] Railroad Gazette, June 29, 1904, p. 47.

[92] Ibid., July 14, 1905, p. 16. [93] Ibid., April 21, 1905, p. 132.

[94] Bushnell, notes. [95] Campbell, p. 67.

[96] Moody's Manual of Railroads and Corporation Securities (No. 8, New York: The Moody Corporation, 1907), p. 942.

[97] Campbell, p. 67.

Company's belt line and terminal property was operated by a management firm for the joint account of the IC and Southern.[98] At the expiration of the three-year lease, the option to purchase TC stock was not exercised by the IC and the Southern, and on July 1, 1908, the Tennessee Central resumed the operation of its property.[99] The Southern's reason for not exercising its option was:

> . . . it was found by experience that the earnings reasonably to be expected from this property would not, for a long time to come, support the additional interest charge which would have been involved in the exercise of the option, and the subsequent expenditure upon the line necessary to put it into condition for economical operation.[100]

Expansion Plans: 1909-1910

With the consolidation and formation of the Tennessee Central Railroad in 1902 and with the completion of the Western Division in 1904, the TC, aside from a few minor branch line changes, took the physical form of the railway as it exists today. No more major additions were to take place.

Although the railroad was not to make any major expansion after 1904, some of the TC's most interesting and grandiose future expansion plans were proposed, or at least reported, during the 1909-1910 period. It was reported in September, 1909, that a preliminary survey was being made for an extension from Hopkinsville northwest to Paducah via Gracy and Cadiz, including bridges across the Cumberland

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[98] Moody's, loc. cit.

[99] Louis W. Holscuh, ed., Moody's Manual of Railroads and Corporation Securities (No. 9, New York: Moody Manual Corporation, 1908), p. 860.

[100] Campbell, p. 68.

and Tennessee rivers.[101] The most ambitious plan of all was reported in March, 1910. It was said that surveys were being made and options were being taken on most of the right-of-way for an extension that was to run from Harriman via Kingston to Knoxville (45 miles). From Knoxville a further extension was to eventually be built via Sevierville, through North Carolina to the Atlantic seacoast. The Knoxville, Sevierville and Eastern was considered a possible link in the through line.[102]

The Second Receivership

On December 31, 1912, eight years after its first receivership, the Tennessee Central Railroad was thrown into a second receivership.[103] The receivers were appointed on January 1, 1913, and were not to be finally dismissed until some nine years later.[104] After August, 1914, the Tennessee Central was seriously affected by the general depression in business, attributed primarily to the war in Europe, and on October 9, 1916, the road was ordered sold by the District Court in Knoxville at an upset price of $1,350,000. The sale was first set for February, 1917, but no bids were received and the sale was postponed and subsequently reset for a number of different dates, with no bidders appearing at any date. In November, 1917, the sale was declared off and indefinitely postponed.[105]

Perhaps some light can be shed on some possible reasons for the

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[101] Railroad Age Gazette, September 17, 1909, p. 521.

[102] Ibid., March 11, 1910, p. 547. [103] Campbell, p. 68.

[104] Bushnell, notes. [105] Campbell, pp. 73-74.

lack of interest in the TC property by prospective bidders by an examination of the general assessment of the Tennessee Central that appeared in the 1917 Moody's guide:

> This property has never been a success and there does not appear to be much possibility of developing enough volume of tonnage to make it really profitable. Possibly, with a radical scaling down of capital, and far lower fixed charges, it might develop into a moderately successful enterprise.[106]

Operation by the United States Railroad Administration

Shortly after the entrance of the United States into World War I the operation of the railroads of the U.S. was taken over by the government, under the direction of the newly-created United States Railroad Administration.[107] The Tennessee Central came under government operation on January 1, 1918, and was not returned to private control until January 31, 1920.[108]

Post-Federal Control Activity

Following the return of the railroads to private operation, a number of tentative plans for the consolidation of U.S. railroad properties into a limited number of systems were being proposed and discussed by the Interstate Commerce Commission and other interested bodies. One such plan, reported by the ICC, August 3, 1921, called for the Tennessee Central to become a part of the Illinois Central-

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[106] John Moody, Moody's Analyses of Investments. Part 1: Steam Railroads (New York: Moody's Investors Service, 1917), p. 715.

[107] D. Philip Locklin, Economics of Transportation (Fifth edition, Homewood, Illinois: Richard D. Irwin, Inc., 1960), pp. 222-223.

[108] Bushnell, notes.

Seaboard system. The TC's financial plight caused the IC to look upon the proposal with something less than enthusiasm. The IC president said:

> . . . he could conceive of no reason why the Tennessee [Central] should be grouped with the Illinois Central. He said that very little traffic originates on the Tennessee [Central], that it has no profitable mineral properties; and that it would be an injustice to require any prosperous road to deplete its revenues and impair its services to its own patrons by being required to absorb the operating expenses of this unprofitable road. . . .[109]

The Tennessee Central's second period of receivership came to a close in January, 1922, following the railroad's sale to a purchasing syndicate at a special master's sale on January 10, 1922. The purchasing group, headed by H. W. Stanley (one of the receivers) and others, received a charter on January 26, 1922, for the purpose of acquiring and operating the Hopkinsville-Harriman rail line, formerly owned and operated by the Tennessee Central Railroad. The new company, the Tennessee Central Railway Company, took formal possession of the property and assumed the lease of the Nashville Terminal Company at midnight, January 31, 1922.[110]

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[109] Campbell, pp. 75-76.

[110] Moody's, 1924, p. 1282.

CHAPTER III

THE PHYSICAL-POLITICAL SITUATION OF THE TENNESSEE CENTRAL ROUTEWAY

I. INTRODUCTION

This chapter will focus attention on the railway as it exists today and will deal with those geographic factors that pertain particularly to that portion of the railway crossing the Cumberland Plateau. However, it is often necessary to devote considerable portions of the discussion to the entire railroad and not just to the Cumberland Plateau "section." This situation cannot be avoided for several reasons. First, the Cumberland Plateau section of the railway is an integral part of the TC system and is not in itself a self-contained unit. Second, the somewhat arbitrary isolation of the Cumberland Plateau section of the railway does not, unfortunately, correspond with the railway's own operational segmentation of its rail line. Monterey, a main division point, and the home of many of the crewmen, is on the top of the Plateau, and only four miles from the highest elevation on the entire line. Third, much of the railway's equipment, services, and procedures are oriented to the system in its entirety, not just to a specific and non-railway defined section. Accordingly, much of the information that might be specifically desired for the Cumberland Plateau section is often indeterminable or else unavailable except on a system-wide basis.

II. PHYSICAL SETTING

The Tennessee Central Railway at present operates a line of road extending from Harriman, Tennessee through Nashville to Hopkinsville, Kentucky, a distance that is slightly in excess of 250 miles (see Figure 1, page 6). The railroad, as is discussed in Chapter I, is the only east-west railroad crossing the Cumberland Plateau in Tennessee and is one of only two rail lines that makes an east-west crossing at any location along the entire southern portion of the Appalachian Plateaus.

In covering the 250-plus miles between Harriman and Hopkinsville, the Tennessee Central crosses a variety of major landforms and related natural landscape features. These major landforms include provinces and related sub-sections of two of the major physical divisions of the United States, the Appalachian Highlands and the Interior Plains. In breaking these divisions down further, the Tennessee Central crosses two provinces of the Appalachian Highlands, the Ridge and Valley and the Appalachian Plateaus, and one Province of the Interior Plains, that being the Interior Low Plateaus and associated sub-sections.

The Appalachian Highlands Division

From Harriman, Tennessee, to a point near Rockwood, the railroad lies along the nearly level floor of the Tennessee Valley section of the Ridge and Valley. From near Rockwood westward, to a point just east of Algood, the railway first climbs, then crosses, and eventually descends the varied, but generally nearly-flat-topped Cumberland Plateau section of the Appalachian Plateaus. From a point just east of Algood the

railway leaves the Appalachians, and from this point to the line's western terminus at Hopkinsville, the Tennessee Central traverses land that is physiographically assigned to the Interior Plains Division.

Interior Plains Division

After descending the Cumberland slope near Algood, the Tennessee Central, for a distance of about 20 miles, crosses the nearly level to gently rolling surface of the Eastern Highland Rim section of the Interior Low Plateaus. At Silver Point the railway begins dropping sharply to the surface of a lower section of the low plateaus, the Nashville Basin. The railway continues across the rolling surface of the Basin to beyond Nashville. A few miles northwest of Nashville the railway leaves the Basin proper and again enters and continues through the realm of the Highland Rim (Northern). But in this situation, rather than immediately climbing from the Basin to the upper level of the Rim, the railroad follows a virtually level routeway alongside the Cumberland River for nearly 40 miles before it finally leaves the river bank near Clarksville and again climbs to the upper surface of the Highland Rim. From this point, in the vicinity of Clarksville, north-northwestward to Hopkinsville, the railway continues across the undulating surface of the Northern Highland Rim and the Pennyroyal.

III. POLITICAL SETTING

In its east-west extent across portions of East and Middle Tennessee and the Pennyroyal District of Southwestern Kentucky, the

Tennessee Central passes through a total of 11 counties, 10 of which are in Tennessee, and 1 of which, Christian, is in Kentucky. Of the 10 Tennessee counties served, 8 are crossed by the railway's main line and the remaining 2, Overton and Fentress, are served by the railway's Crawford Branch, which extends from Monterey (Putnam County) through southeastern Overton County to Wilder in Fentress County. The eight main-line Tennessee counties crossed, from west to east, include Montgomery, Cheatham, Davidson, Wilson, Smith, Putnam, Cumberland, and Roane.

Among the many places served by the railway, eight are county seats, and one, Nashville, is both a county seat and state capital. Of the 11 Tennessee and Kentucky counties through which the TC passes, only the county seat places of Livingston (Overton County), Jamestown (Fentress County), and Kingston (Roane County) fail to appear on TC timetables. The county seats of Hopkinsville (Christian), Clarksville (Montgomery), Ashland City (Cheatham), Nashville (Davidson), Lebanon (Wilson), Cookeville (Putnam), and Crossville (Cumberland), are all located on the Tennessee Central main line. The only non-main line county seat served is Carthage, seat of Smith County.

By far the majority of the points served by the Tennessee Central are rural rather than urban places. In fact, of 53 listed stations, as reported by the TC, only 9 are located in urban places. The only large urban place served by the Tennessee Central is Nashville (population 170,874), economic capital of Middle Tennessee and site of the TC's main offices, shops, and principal yards. In terms of places served, far behind Nashville in population are Clarksville (22,021) and

Hopkinsville (19,465), respectively, both of which are located on the TC's Western Division. All of the remaining urban places served by the railway are on the Eastern Division. These include in descending order of population: Donelson (17,195), Lebanon (10,512), Cookeville (7,805), Harriman (5,931), Rockwood (5,345), and Crossville (4,668). The cities of Donelson, Harriman, and Rockwood are the only urban places served by the rail line that are not county seats. At the same time, the county seat towns of Ashland City and Carthage are the only ones not qualifying as urban places.

IV. THE TENNESSEE CENTRAL AND OTHER TRANSPORT MODES

Although the Tennessee Central is the only east-west rail carrier entirely crossing the Cumberland Plateau in Tennessee, it is not by virtue of its uniqueness without potential competition from other transport modes. While the TC's Eastern Division between Harriman and Nashville is virtually free of direct rail competition, the same cannot be said for the rail situation on the railway's Western Division from Nashville to Hopkinsville, nor can it be said that any part of the railway, including the plateau-crossing Eastern Division, is at all free from one or more forms of competing motor, water, or air transportation.

Considering that competition for the Tennessee Central from air freight routes is likely to be negligible at the present time, the following discussion will be limited to the TC's relationship to potential competing modes of surface transport: rail, motor, and water.

Potentially Competing Rail Routes

Eastern Division. The Tennessee Central's Harriman-Nashville rail line crossing the Cumberland Plateau forms the most direct rail route between Nashville and the middle and upper parts of East Tennessee. The TC's Eastern Division, in conjunction with the Southern Railway's Knoxville-Harriman line, provides the most direct rail route between the two major cities of Nashville and Knoxville. The only other rail connection between Knoxville and the capital city would be by a circuitous joint Southern-Louisville and Nashville routing via Chattanooga and northeastern Alabama, a distance of 262 miles, as compared with 216 miles over the Southern-Tennessee Central route via Harriman. Freight movements routed over the TC through the Harriman gateway thus provide a net savings of 46 miles.

Determined purely on the basis of mileage, the TC's Harriman gateway is the most favorable route for shipments moving between Nashville and those rail points in Middle and Upper East Tennessee that lie north and northeast of an imaginary arc that passes just south of Spring City on the CNO&TP and near Lenoir City on the Southern Railway and near Greenback on the L&N. Southwest of this imaginary line, the shortest routeway between Nashville and southwestern East Tennessee points is through the L&N's Chattanooga gateway and not through the TC's Harriman gateway.

On local traffic movements between Harriman and Nashville, the TC has very little potential rail competition. With the exception of the close paralleling of the Tennessee Central by the CNO&TP for about seven miles between Harriman and the eastern part of Rockwood, the TC has no competition on rail traffic movements to and from points

lying between Rockwood and Nashville. Between these two points the Tennessee Central neither crosses, parallels, or connects with any other railroad. This situation holds true, too, for each of the Eastern Division's three branch lines: the Carthage, Crawford, and Old Hickory branches.

Western Division. Unlike the situation on the Eastern Division, the Tennessee Central on its considerably shorter Western Division has direct rail competition with one other line--the Louisville and Nashville. The TC's route to Hopkinsville via Clarksville--85.4 miles in length--is matched by a segment of the L&N's Nashville-Evansville-St. Louis line, a generally paralleling route that lies to the northeast of the Tennessee Central. The TC and L&N routes together, viewed cartographically, form an arrowhead arrangement, with the base of the arrowhead being in the vicinity of Nashville and the point being formed by the convergence of the two lines and they come together at Hopkinsville. At the greatest point of separation, the L&N lies about 20 miles northeast of the TC. The Tennessee Central, the southwestern most of the two routes, after leaving Nashville, passes through Ashland City, Clarksville, Edgoten (Fort Campbell), and terminates at Hopkinsville, where it connects with the Illinois Central. The Louisville and Nashville, on the other hand, reaches Hopkinsville from Nashville via Springfield, Tennessee and Guthrie, Kentucky over a route 72 miles in length, a route about 13 miles shorter than that of the Tennessee Central.

Not only does the L&N provide an alternative routeway between Hopkinsville and Nashville, the L&N trackage provides potential competition

for the TC at Clarksville as well. The previously-mentioned L&N Nashville-Evansville-St. Louis route, passing through Guthrie, Kentucky, intersects at that point with the L&N's own Louisville-Memphis route, which, in turn, connects Guthrie with Clarksville, 13 miles away. Thus, in effect, the L&N can serve Clarksville from Nashville via Guthrie, a distance of 61 miles, only 3 miles greater distance than the TC's direct Nashville-Clarksville line. By virtue of the 13-mile Clarksville-Guthrie segment, the L&N is also able to offer an alternative to the TC routeway between Clarksville and Hopkinsville. The direct TC route covers the distance between the two Highland Rim cities in 29 miles, the indirect L&N route takes 37 miles.

The Tennessee Central, of course, has no rail competition at local points it serves between Nashville and Clarksville and between Clarksville and Hopkinsville.

Potentially Competing Highway Routes

The Tennessee Central is faced with ample opportunities for motor transport competition on paralleling Federal and State highways. On the Eastern Division, the principal competing highways are a short, four-laned stretch of U.S. 27, a major north-south route across Tennessee that very closely parallels the TC, as well as the CNO&TP, between Harriman and Rockwood, and U.S. 70-70 North and Interstate 40 across the middle section of the Cumberland Plateau. Northwest of Nashville, along the Tennessee Central's Western Division, the main highways associated with the TC routeway are U.S. 41 and U.S. 41 Alternate, both of which connect Nashville with Hopkinsville. U.S. 41 more or less

approximates the TC's route from Nashville to Hopkinsville via Clarksville. For much of the distance between Hopkinsville and Clarksville the Tennessee Central and four-laned U.S. 41 Alternate lie almost side by side. However, between Clarksville and Nashville U.S. 41A (two-laned at this point) heads almost directly for Nashville across the Northern Highland Rim upland, while the TC takes a more southwestwardly, sparsely-settled, low-level routeway along the Cumberland River. This Clarksville-Nashville segment of the Tennessee Central Railway is the only significant section of the entire railway that is not closely paralleled by one or more Federal highways.

In regard to future highway patterns, upon completion of U.S. Interstate 24 between Nashville and Paducah, Kentucky, a routeway that will pass near both Clarksville and Hopkinsville, the TC's Western Division will thus be faced with competition from still another highway route, probably to be the most formidable of all.

Potentially Competing Water Routes

The only water routes that parallel and could have a direct effect upon the Tennessee Central are the navigable Cumberland and Tennessee river waterways. In terms of distance and proximity, the Cumberland River, by far, is the waterway that would be most associated with the Tennessee Central railway.

The Cumberland River. The Cumberland River is associated with sections of the TC on both the railway's Eastern and Western divisions. On the Eastern Division, the town of Carthage, located on the TC's Carthage Branch, is located on the banks of the navigable Cumberland

River as well. Thus certain traffic movements in and out of Carthage to and from the west would have alternate routeways--rail or water. The next Eastern Division point of potential competition between the TC and the Cumberland riverway occurs in the Nashville Metropolitan Area, and includes not only Nashville, but the industrial complex at Old Hickory as well.

West and northwest of Nashville the Cumberland River parallels the Tennessee Central nearly all of the distance between Nashville and Clarksville and can, thus, provide direct competition to both these and intermediate points in Davidson, Cheatham, and Montgomery counties.

The Tennessee River. The 652-mile Tennessee River system is the second of the two navigable waterways that function in the area served by the TC. As opposed to the TC's relationship with the Cumberland system, only a short segment of the Tennessee Central is in geographical proximity to the Tennessee River waterway system. Only two, possibly three, points--all on the Watts Bar Lake section of the river system--are served by both the Tennessee Central and by the navigable waterway. These points include Harriman, on the Emory River Embayment; the Tennessee Valley Authority's Kingston Steam Plant, on the Clinch River Embayment;[1] and, possibly, Rockwood, which has a port authority, but whose town center is located just north and west of Watts Bar Lake and would, consequently, by many not be considered a port city.

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[1]The Tennessee Central does not serve the Tennessee Valley Authority's Kingston Steam Plant directly, but does so through interchanging at Emory Gap with TVA's own plant railroad system, which is complete with its own diesel locomotives, extensive storage yards, shops and unloading facilities.

CHAPTER IV

OVERVIEW OF THE TENNESSEE CENTRAL ROADWAY

I. THE APPALACHIAN PLATEAUS ROUTEWAY

The Appalachian portion of the Tennessee Central Railway is the segment that makes the actual physical east-west crossing of the Cumberland Plateau transport barrier. For discussion purposes the Appalachian Plateaus, or Cumberland section, of the railway will be considered to be that 75 mile part of the TC's line of road that lies between Cookeville to the west and Harriman to the east (see Figure 2). Between Cookeville, on the Eastern Highland Rim near the base of the ragged northwestern Cumberland front, and Harriman, in the Ridge and Valley near the base of the nearly uniform southeastern Cumberland escarpment, the Tennessee Central through trains, whether eastbound from Cookeville or westbound from Harriman or Emory Gap, are confronted with the climbing, crossing, and descending of the northeast-southwest-trending Cumberland Plateau.

Both eastbound and westbound movements across the plateau must face the steep gradients and sharp curvatures in climbing and descending the fronts, but this is only a part of the total obstacle. A second, although lesser obstacle, owing in part to the northwest to southeast decline of the general plateau level and in part to the pronounced irregularities on the otherwise nearly flat-topped surface, is the TC's crossing of the plateau surface itself (Figure 3).

Even though both eastbound and westbound train movements must

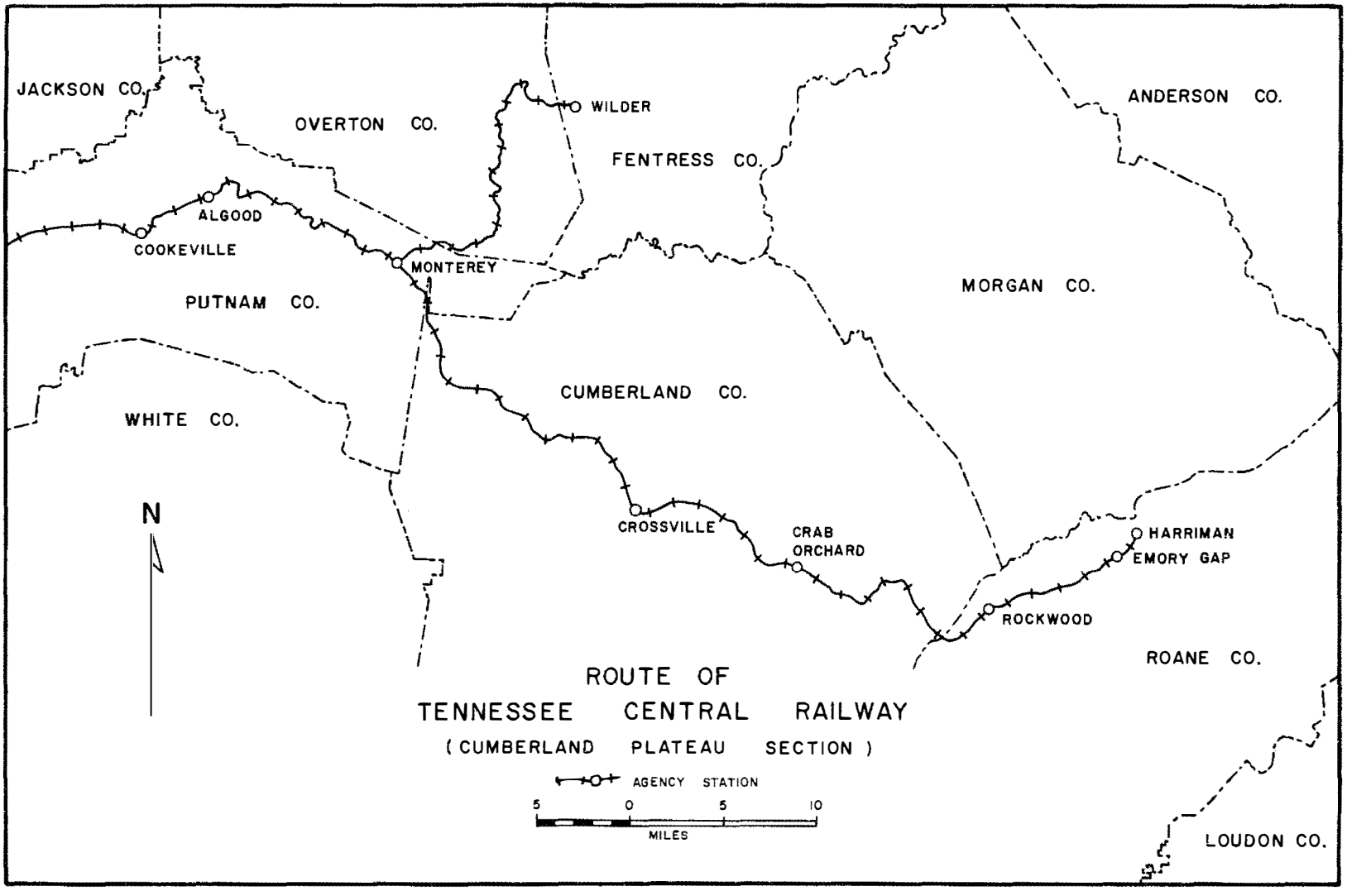

Figure 2. Cumberland Plateau section of the Tennessee Central Railway.

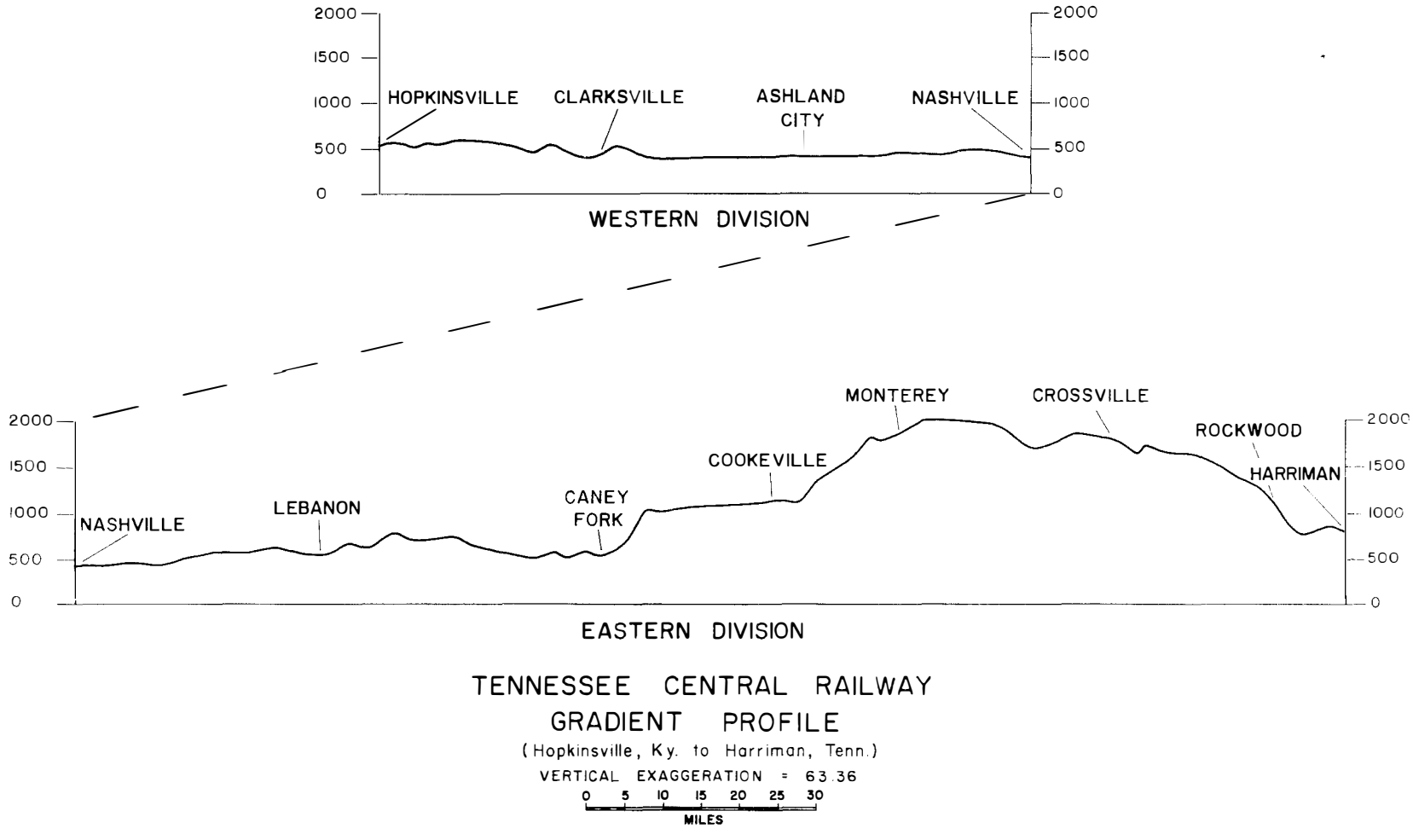

Figure 3. Gradient profile of Tennessee Central Railway, Eastern Division.

climb one escarpment and cross or wind around the irregular surface features, the plateau, because of its steep northwestern front and the general southeastward decline is actually more of a barrier to eastward movements from Cookeville to Harriman than it is to westward movements from Harriman to Cookeville.

The high point of the railroad on the plateau, 2,028 feet above sea level,[1] is not located about mid-way across the plateau width, but is located at Dripping Springs, about four miles east of Monterey, near the crest of the northwestern Cumberland escarpment. Thus the Tennessee Central climbs from an elevation of 1,114 feet at Cookeville to an elevation of 2,028 feet at Dripping Springs, a climb of 914 feet in just over 22 miles, a climb in excess of 41 feet per mile. Westbound trains from Harriman, on the other hand, take over 52 miles to climb from an elevation of 785 feet at Harriman to the 2,028-foot summit elevation, a total climb of 1,243 feet, or about 24 feet per mile. Put another way, eastbound trains once they have completed the 22 mile climb to the summit at Dripping Springs have essentially a down-hill run all the way to Harriman. Westbound trains, on the other hand, with one important exception, must spend most of the first 50 miles out of Harriman in climbing both the plateau escarpment and the upland plateau surface. A downgrade run is possible only over the comparatively short remaining distance between Dripping Springs and Cookeville to the west.

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[1] All Tennessee Central railroad elevation and curvature figures used throughout this chapter are taken from profile diagrams provided by the Tennessee Central Engineering Department.

The following discussion of the Tennessee Central's crossing of the Cumberland Plateau will be on the basis of dividing the line into two districts: (1) the eastbound gradient, extending from Cookeville to Dripping Springs, and (2) the longer, more complex westbound gradient. Each of these gradient districts will be further divided into sub-districts.

The Eastbound Gradient

Cookeville-Monterey. The Tennessee Central in climbing to the front of the Cumberland Plateau between Cookeville and Dripping Springs, unlike the situation found on the southeastern front, makes the climb of the escarpment in stair-step fashion, there being two intermediate steps or points of leveling off being found between the foot of the escarpment at Algood and the crest of the escarpment at Dripping Springs. These intermediate levels are located in the vicinities of Brotherton at Milepost (M.P.) 99 and Monterey at M.P. 108.[2] Monterey is taken as a logical breaking point in the discussion for several reasons, among which are that (1) it is located on one of the natural plateau benches, (2) it is an important railway yard and crew-change point, and (3) it is the point of departure for the railway's coal-originating Crawford Branch.

Between Cookeville and Algood the railway is still crossing the surface

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[2] Milepost (M.P.) figures indicate the rail distance in miles to Nashville from points on both the Eastern and Western divisions. For example, M.P. 157 at Rockwood indicates that Nashville lies 157 rail miles to the west.

of the Eastern Highland Rim for four miles and it is able to follow a nearly level and almost perfectly straight right-of-way. From Cookeville (elevation 1,114) to Algood the net gain in the railway's elevation is nil, as the elevation at Algood, at the foot of the escarpment is 1,115 feet. But near M.P. 95, at the 1,115 foot elevation mark, the railroad begins its climb around the base of flat-topped Algood Mountain, then along the side and just beneath the head of Chimney Springs Hollow until the railroad reaches the nearly level bench plateau surface near Parragon, elevation 1,426. Between Parragon (M.P. 98) and Brotherton (M.P. 99.5), the TC leaves the nearly flat bench surface and begins climbing along the plateau side, rising above Barnes Hollow to the south. At Bilbrey, elevation 1,821 feet, the Tennessee Central follows along a narrow ridge top. or fragmented bench land and plateau finger, that rises 400-500 feet above the nearby creek bottoms and that gradually begins to widen as Monterey is approached. From Bilbrey to Monterey the railway fluctuates in elevation, but gradually ascends to the 1,882 elevation mark just east of the TC's Monterey depot.

Thus, between Algood (elevation 1,115) at the base of the Cumberland Plateau and Monterey (elevation 1,882) on the second bench, the railway has climbed 767 feet, or an average of increase in excess of 56 feet per mile. The gradient runs from moderately heavy to steep; the major gradient is 2.44 percent just west of Bilbrey. The curves between Algood and Monterey are frequent and generally range from moderately severe to severe in curvature. The Curve Frequency Ratio (CFR) for the 14-mile stretch of track is a high 4.14 (there are 58

total curves), and a number of curves have curvatures in excess of 8°, two of which have curvatures of 10° or better.[3]

Monterey-Dripping Springs. In the nearly four-mile distance on the main line between M.P. 109 in the TC's Monterey yards (elevation 1,858 feet) to a point just west of M.P. 113 at Dripping Springs, the TC main line increases its elevation by 170 feet and reaches the highest point (2,028 feet above sea level) not only on the Eastern Division, but on the entire TC system. Just west of this peak elevation the line completes its climb of the plateau front; from here the tracks cross the relatively flat-topped plateau surface for 17 miles to Crossville. It is also at this TC high point at Dripping Springs that the United States Interstate Highway 40 crosses the Tennessee Central and adjoining United States Highway 70.

Between Monterey and Flat Rock Siding, near the Dripping Springs summit, the TC encounters a gradient averaging just over 1 percent--a moderately heavy grade. Curvature is moderate and the CFR is a low 2.0.

The Westbound Gradient

Harriman-Crossville. The eastern approach to the Cumberland Plateau front, somewhat like the western plateau approach in the west,

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[3]The Curve Frequency Ratio (CFR) measures the average number of curves per mile of rail line. The computation is determined by dividing the total number of curves over a segment of road by the number of miles of road comprising the measured segment of rail line. Thus, 14 curves over a two-mile segment would result in a CFR of 7.0.

is made by a relatively easy gradient that soon gives way to the steep gradient of the plateau escarpment itself. The eastern approach is made over the undulating surface of the Ridge and Valley. In relative terms, considering gradient and curvature profiles, the valley trackage, although in marked contrast to the steep climb of the Cumberland front, more closely resembles the trackage of the Nashville Basin than it does the pattern found on the outer Eastern Highland Rim near the Cumberland base.

Almost immediately after leaving the connection with the Southern Railway at Harriman, at the 785-foot elevation mark, just shy of what would be M.P. 166, the Tennessee Central begins a descent to its Emory River bridge and then immediately re-ascends to an elevation in excess of 870 feet as it climbs and cuts through the small ridge that rises abruptly above the right bank of the narrow Emory River floodplain. Upon cutting through this ridge the railway proceeds southwestwardly through a narrow and rolling valley, which lies between the wall-like Walden Ridge to the northwest and the lower Pine Ridge to the southeast, to its terminal and point of interchange with the CNO&TP at Emory Gap and on to the outskirts of Rockwood, about five miles away. From the 870-plus foot high point just east of Emory Gap, the railway has a fairly steep descent into Emory Gap and a more gradual descent to a point lying about 1.5 miles east of Cardiff, at which location the railway descends to an elevation of 768 feet at M.P. 161.5--the lowest elevation on the entire Appalachian section of the routeway. From here the railway begins to climb gradually and to angle away from the closely paralleling CNO&TP line and to head toward the base of

Walden Ridge as the rail line approaches Rockwood. Then in the next three miles the railway rises 77 feet, reaching an elevation of 856 feet about a mile and a half east of the Rockwood depot. East of M.P. 158, at the 845-foot elevation mark, the TC begins its climb of Walden Ridge in earnest. From this point the TC grade significantly steepens and remains constantly steep until the tunnel is reached at the ridge crest at 1,362 feet. The tunnel is actually beneath a low sag in the crest, and is only a few yards north of U.S. Highway 70 which passes through a sag or "gap."

In making its climb from the low point near Cardiff to the ridge crest at the Walden Ridge tunnel, the railway increases its elevation by 594 feet, or at the rate of about 75 feet per mile. In the five miles between the 845 foot mark at M.P. 158.5 and the ridge crest, the road rises over 500 feet and at a rate in excess of 100 feet per mile, a steep grade that averages about 2 percent. Maximum gradients over this portion of the line reach 2.4 percent; curves are frequent (CFR 4.90), and three reach curvatures of 10°.

The TC descends briefly after leaving the tunnel and then continues its climb as it proceeds generally westward across the plateau surface. The railway heads northwestward through Westel, then north-northeastward to just beyond Daysville, at which point it heads west, then southwest to Ozone. From just west of the Walden Ridge tunnel, at an elevation of 1,336 feet, the TC climbs to over 1,370 feet at Westel, to 1,540 feet at Daysville, and to 1,648 feet at Ozone. At Ozone, at M.P. 146, about seven miles west of the tunnel, the Tennessee Central again begins paralleling U.S. Highway 70 and

heads northwestward for Crab Orchard by following the Renfro Hollow-Crab Orchard Gap routeway through the Crab Orchard Mountains. For the first three miles west of Ozone the routeway is virtually level; in the remaining 2.5 miles to Crab Orchard the rail line climbs from an elevation of 1,645 feet in Renfro Hollow to 1,730 feet in Crab Orchard Gap. From Crab Orchard Gap to the Crab Orchard depot, the TC descends to an elevation of 1,675 feet. U.S. 70, lying just south of the Tennessee Central, continues to remain in close proximity to the rail line between Crab Orchard and Crossville.

For the first mile west of Crab Orchard the TC again rises, this time rising to an elevation of 1,746 feet before it begins a descent to the crossing of Daddy's Creek, which is bridged at an elevation of 1,650 feet. For the remaining eight miles to Crossville, between the crossing of Daddy's Creek and M.P. 131 at Crossville, the TC gradually increases its elevation. Proceeding westward the rail line rises to an elevation of 1,815 feet at M.P. 136 east of Dorton and proceeds over an almost perfectly level roadway for about a mile before again climbing, rather gently, to an elevation of 1,846 feet at M.P. 134. From this point to the 1,854 foot level at the Crossville depot, the TC follows a nearly level routeway.

Between the Walden Ridge tunnel summit (elevation 1,362) and Crossville, on the flat-topped surface of the plateau, the TC increases its elevation by another 492 feet, an average overall climb of nearly 22 feet per mile. The grade tends to be generally steady and moderately heavy, with a maximum gradient of 1.5 percent. The curves tend to be moderate to moderately-severe, the maximum curvature being a

compound curve of 14° between Daysville and Ozone, and two curves of 10° each in Renfro Hollow. The CFR for the Walden Ridge crest-Crossville segment amounts to 2.84, there being 64 rather evenly spaced curves in a distance of 22.5 miles.

Crossville-Dripping Springs. Moving westward from Crossville the Tennessee Central remains closely aligned with the adjoining U.S. 70, but the TC temporarily departs from the nearly flat-topped plateau surface it first encountered near Daysville, but lost briefly while passing through the Crab Orchard Mountains and again while descending to and reascending from the Daddy's creek crossing. After passing the Crossville depot at an elevation of 1,854 feet, the TC drops almost steadily as it crosses, first, the Obed River, at an elevation of 1,738 feet, and then continues to descend and crosses, second, Meadow Creek, at which point it reaches a low elevation of 1,690 feet--the lowest point on the Crossville-Dripping Springs segment of the line. From the Meadow Creek crossing to a point west of Creston, a total distance of about three miles, the TC is able to follow a nearly level routeway along the floodplain of Black Drowning Creek, a tributary stream of the Obed River. The TC over a three-mile stretch increases its elevation by only 17 feet.

At the 1,707 foot elevation mark near M.P. 124, the TC begins a fairly steep two-mile ascent to Pomona Road, which lies at the 1,919 foot elevation level. Thus, in just about 2.3 miles the TC has gained 212 feet in elevation. At Pomona Road the TC again begins crossing the flat-topped surface of the plateau. From Pomona Road westward for

a distance of nearly two miles the rail line forms the Tennessee Valley Divide--waters north of the rail roadway eventually find their way into the Tennessee River system; the waters south of the railway form a part of the Cumberland River drainage system. Just southeast of Campbell Junction, former point of departure for the now-abandoned Isoline Branch, the TC crosses the divide and proceeds for the remainder of its distance to Nashville and beyond in the drainage basin of the Cumberland River.

From the 1,919 elevation mark at Pomona Road (M.P. 122) through Campbell Junction and Mayland to Dripping Springs, the TC moves over the undulating plateau surface gradually increasing its elevation until it reaches the 2,028 foot mark at Dripping Springs, the point of meeting of the respective eastbound and westbound plateau gradients and high point on the entire Tennessee Central system.

The steepest gradient between Crossville and Dripping Springs, as one might expect, lies between Creston and Pomona Road, where a steep grade of 2.6 percent is reached. The sharpest and most frequent occurrence of curves is found in those two sections of roadway that ascend from "Creston Bottom" to the higher flat-lying plateau surface. For example, in the two-mile westbound climb from "Creston Bottom" to Pomona Road a total of 12 curves is encountered, 6 of which possess 10° of curvature each. In contrast, in the 9 remaining miles between Pomona Road and Dripping Springs, only 11 additional curves are encountered. The CFR for this section between Crossville and Dripping Springs is 2.06.

Crawford Branch. At Monterey the Tennessee Central's longest

branch line, the heretofore 21-mile Crawford Branch, departs from the TC main line and, until recently, has headed northeastward through portions of Putnam, Overton, and Fentress counties to the plateau mining towns of Obey City, Crawford, Highland Junction and Wilder. However, it is now reported that the Crawford Branch is in operation only to Crawford (Overton County), just over 15 miles from Monterey, and that trackage is no longer maintained the remaining 5.6 miles to Wilder.[4]

After leaving Monterey at an elevation around 1,880 feet,[5] the Crawford Branch heads eastward, crosses into Overton County, drops to less than 1,800 feet in elevation, and begins to turn northward generally following the East Fork of the Obey River--at which point the currently-operated portion of the Crawford Branch reaches its low elevation of 1,620-plus feet (just south of Lovejoy). From this low point the TC climbs again, reaching 1,920-plus feet in elevation at Bonsack. From Bonsack the branch gradually descends to 1,896 feet at Hanging Limb and continues along a narrow flat-topped ridge until it reaches the mining town of Crawford at the 1,878 foot elevation mark.

II. THE INTERIOR LOW PLATEAUS ROUTEWAY

The following discusses the railroad to the west of the Cumberland Plateau crossing--the portion from Cookeville to Hopkinsville.

Nashville-Cookeville

The Nashville-Cookeville segment of the Tennessee Central's rugged

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[4] J. J. Judd, Tennessee Central Agent, Monterey, Tennessee, personal interview.

[5] Elevation figures for this section are taken from United States Geological Survey topographic maps.

Eastern Division covers a longitudinal rail distance of 90 miles, a distance that amounts to more than half of the Division's 166-mile length between Nashville and Harriman. Of these 90 miles, 70 are associated with the railway's crossing of the relatively low, but rolling, outlier-dotted Nashville Basin, and the remaining 20 miles are associated with the tortuous climbing of the steep Highland Rim plateau front and the eventual more gentle crossing of the nearly flat-topped surface of the rim to the town of Cookeville, near which point the rolling, sometimes flat-topped and often deeply incised rim surface makes contact with the escarpment base of the even higher-lying Cumberland Plateau.

Overall, the Nashville-Cookeville line of the Tennessee Central represents that portion of the Eastern Division that crosses in part the physiographic province known as the Interior Low Plateaus, one section of which is the Nashville Basin, another of which is the Eastern Highland Rim. To facilitate the discussion of the TC's crossing of the low plateaus area, the Nashville-Cookeville portion of the road will for our purposes be subdivided into these distinct sections: the Nashville Basin section and the Eastern Highland Rim section.

The low plateau district of the TC's Eastern Division is anything but homogeneous. The road begins at an elevation of 424 feet alongside the Cumberland River at Nashville, the lowest point on the eastern low plateau district and the lowest point on the entire Eastern Division, and rises, none too uniformly, to a maximum elevation of 1,114 feet at Cookeville--a total rise of 690 feet in 90 miles, or an average rise of only about 7.7 feet per mile, which, statistically, is a slight grade indeed. However, as will be shown in the sections to follow, it

will become evident that the TC's routeway gradient, for the most part, is neither gentle, nor is it continuous or uniform. The Tennessee Central's Nashville-Cookeville gradient might possibly be characterized as giving the appearance of a warped sawtooth-stairstep profile.

The Basin section. The Basin section of the Tennessee Central, lying between the TC yards at Nashville and Buffalo Valley, at the foot of the Highland Rim, presents a type of sawtooth gradient pattern as it traces its way across the Basin floor. Graphically, the railway through a succession of alternate ascents and descents gradually increases its average elevation until it reaches a high point between Shop Springs and Cherry Valley, at M.P. 42, about 4/7 of the line's total distance across the basin. For the remaining 3/7 of the distance, following a similar alternating up and down pattern, the road gradually declines in elevation until it begins its renewed ascent at Buffalo Valley.

Proceeding eastward out of Nashville (elevation 424), the Tennessee Central follows near the left bank of the Cumberland River until nearing Donelson. Near Donelson the railway continues eastward and departs from the banks of the northward-bending Cumberland. Along the 32-mile stretch of track between Nashville and Lebanon, the TC encounters gradients ranging from moderate to moderately-heavy in intensity. The slightest, most nearly level grades, are found along the Cumberland River just east of Nashville and along a two-mile stretch of track near Hermitage, which lies upon the Stone's River floodplain. At Hermitage the TC's important branch line to Old Hickory leaves the main line.

Maximum relief between high and low points along the main line between Nashville and Lebanon amounts to 200 feet--the lowest point, of course, being Nashville, the highest being an elevation of 623.5 feet near Milepost 26 from Nashville, at Horn Springs. Maximum grades encountered in the Nashville-Lebanon section include a short stretch of 1.73 percent for eastbound trains and 1.35 percent for westbound trains. This 32-mile section of line is relatively free of curves, there being on the average less than two per mile (CFR 1.84). The curves are moderate, but a number do reach curvatures as great as 6°.

Between Lebanon, elevation 550.5 feet, and the high point on the Basin district of the line near M.P. 42 (elevation 790.0 feet), the road continues its steady, but sawtooth-like climb. Maximum railway relief over this 10-mile section of track amounts to about 246 feet, about 25 percent greater than that found in the Lebanon-Nashville section. Grades run generally from moderate to moderately heavy, the maximum eastbound gradient being 2.0 percent, near M.P. 42; the maximum westbound grade being 1.83 percent. The curvatures are moderate; the maximum being 6°, and the CFR for the 10-mile segment is 3.40, substantially greater than in the previous section.

From the high point along the Basin district of the road, about two miles east of Shop Springs (elevation 790.0 feet), the TC, with its continued sawtooth-like descent, descends to 505 feet near Carthage Junction, a moderate fall of 285 feet in about 19 miles. Between the summit at M.P. 42, between Shop Spring and Cherry Valley, through Watertown to Holmes Gap, the TC roadway gradient is particularly wavelike; however, once Holmes Gap (M.P. 50, elevation 739) is passed, the roadway begins a rather uniform and virtually uninterrupted descent to Carthage Junction.

Near Sykes (Smith County) the roadway begins to enter the knobby area that forms a zone of transition between the Basin and the Rim. In the railway's descent toward Carthage Junction, the TC, near Sykes, begins winding through the rugged knob area by following along, first, a tributary of Hickman Creek, then Hickman Creek proper, as the railway passes through such places as Sykes, Hickman, and Carthage Junction (M.P. 61). At Carthage Junction the 7.6-mile Carthage Branch takes off northward for the town of Carthage.

From Carthage Junction via Lancaster to the village of Caney Fork, the Tennessee Central, to a large extent, follows along the banks of one of either two streams: Caney Fork or Smith Fork. In the eight miles between Carthage Junction and Caney Fork, the TC varies not more than 75 feet between its highest and lowest points. From Caney Fork (elevation 525) the TC follows a nearly level routeway along the narrow Indian Creek Valley to Buffalo Valley (elevation 518), the point of termination for the Basin district and the point of ascent of the Eastern Highland Rim escarpment district.

Although the general trend is downhill, the eastbound gradient between the M.P. 42 summit and Buffalo Valley in several places runs from moderately-heavy to steep, there being several grades in excess of 2.0 percent, the maximum, near Watertown, being 2.25 percent. Westbound trains over this same segment of line face a general ascent to the M.P. 42 summit. The maximum grade, near Watertown, is 1.96 percent, but westbound trains between Carthage Junction and Holmes Gap face about 10 consecutive miles of grade running from slight to moderately heavy. Curvature on the 28-mile stretch of line between the summit and

M.P. 70 at Buffalo Valley is sharper than that found on previously-discussed sections of the basin. Many of the curves are moderately-severe in curvature, some are severe, and a few are considered very severe or excessive. Five curves are of 8° curvature, three of 9°, and two reach 10°. Over the 28-mile segment of track there exists a total of 82 curves, resulting in a curvature ratio (CFR) of 2.93.

The Eastern Highland Rim section. Beginning at the 518-foot elevation mark just west of M.P. 70 at Buffalo Valley and continuing both upward and eastward through a narrow valley along Buffalo Branch to an elevation of 1,114 feet at a point just east of M.P. 90 at Cookeville, there exists a rather noteworthy 20-mile segment of TC roadway. This roadway not only forms the remaining or easternmost section of the TC's two low plateau subdivisions, this one being the Eastern Highland Rim section, but the road also functions as a bridge or connector between the lower Nashville Basin country to the west and the higher Cumberland Plateau country to the east.

In making its climb from the floor of the Nashville Basin at Buffalo Valley to the level of the Rim surface at Cookeville, the Tennessee Central, in the 20-mile stretch, climbs nearly 600 feet, or an average gradient of about 30 feet per mile (.57 percent), which would be considered more than just a slight grade, moderate at best. Now, considering that even an average continuous grade of .57 percent would be considered to be of undesirable steepness by some high-speed, main-line railroads, the TC's ascent to Cookeville is made especially noteworthy in that of the nearly 600 foot increase in elevation between

Buffalo Valley and Cookeville, about seven-eighths of the entire gain in elevation--525 feet--is accomplished in a rail distance of only five miles.

In the five-mile stretch of track from Buffalo Valley in the Basin upward to Silver Point, at the lip of the Highland Rim, the railway rises from 518 feet to an elevation of 1,043 feet. This represents a rise in excess of 100 feet per mile, or an average gradient of 1.91 percent. Over a three-mile stretch, between M.P. 72 and Silver Point (M.P. 75), the railway climbs 397 feet, an average gradient of 2.51 percent, a steep grade indeed. Between Buffalo Valley and Silver Point, the maximum gradient reaches a very heavy 3.5 percent near M.P. 74. Over the some five-mile segment of track there appear 15 curves, giving a CFR rating of 3.00. The sharpness of curvature on this steep section of track is, however, generally moderate, the maximum curvature being two curves of 6° each.

Over the next 15 miles from Silver Point to Cookeville the railway follows an undulating grade profile across the surface of the Rim and only increases its elevation by another 71 feet. Between Silver Point and Baxter the railway follows the top of a reasonably flat, but narrow, fragmented finger of the Rim that drops off sharply on both its northwestern and southeastern sides. Near Baxter, though, the narrow ridge widens out as the main part of the Rim itself is reached. Eastbound trains between Silver Point and Cookeville encounter moderate to moderately-heavy grades. The maximum eastbound grade faced is 2.07 percent, the main westbound, 2.00 percent. A total of 35 curves is found on this section of the line, with the greatest

frequency of occurrence being between M.P. 88 and M.P. 89 (Cookeville). This latter section alone contains 10 curves, resulting in a very high CFR of 5.00. The Curve Frequency Ratio for the entire 15 miles is 2.33; the maximum curvature is 14°; the overall curvature rate may be described as being severe.

Hopkinsville-Nashville

To complete the picture as far as the Tennessee Central main line is concerned, a brief mentioning of the remainder of the TC line would be in order at this point. The 85.4 mile distance between Nashville and Hopkinsville is coincident with and under the jurisdiction of the TC's Western Division. Over this route the rail line climbs from an elevation of 423 feet above sea level at Southern Junction (Nashville), in the Nashville Basin, then proceeds for 39 miles along a water-level route generally paralleling the Cumberland River, then climbs the escarpment of the Northern Highland Rim near Clarksville, and finally proceeds across the Highland Rim to Hopkinsville, which lies at an elevation of 528 feet. The total rise involved is 105 feet, or a mean average rise of about one and one-half feet per mile. The highest elevation on the division--592 feet--is reached at two different places, a point on the Northern Highland Rim near Hopkinsville and a point on the TC belt line in South Nashville. The lowest point in elevation along the Tennessee Central between Nashville and Hopkinsville, 389 feet, is at a point alongside the Cumberland River at Gratton. Thus, the maximum relief between the highest point on the Division, at Nashville, and the lowest point, along the Cumberland River near Gratton, is 194 feet.

CHAPTER V

THE CUMBERLAND PLATEAU AND THE MOVEMENT OF TRAFFIC

I. INTRODUCTION

As indicated previously, the Cumberland (Cookeville-Harriman) section of the railway functions as an integral part not only of the Eastern Division, but of the remainder of the system as well. Recognizing this situation, much of the discussion to follow will emphasize the Cumberland section whenever possible, but will generally deal with the selected topics on a system-wide basis.

The following sections will discuss the TC's physical plant, or its capacity for hauling traffic; the rail services provided; the operational procedures used in freight movements, particularly those that are associated with the plateau; the functions of the Tennessee Central as a carrier of traffic; and the major commidities carried, with emphasis upon those originating or terminating upon the plateau itself.

II. TRAFFIC MOVEMENT FACILITIES AND SERVICES

The Physical Plant

The rail line. The Tennessee Central Railway is an independent, short-line railroad whose main line, composed of two divisions (Eastern and Western), extends from Hopkinsville, Kentucky via Nashville to Harriman, Tennessee, a rail distance of just over 250 miles. Including

the lines of the Carthage, Crawford and Old Hickory branches, with lengths of 7.6, 20.9, and 7.3 miles, respectively, the railway operates about 284 miles of main-line and branch-line road.[1] Main and branch line main tracks total 284.29 miles; yard tracks and sidings add another 88.54 miles of TC trackage, resulting in a grand total of 372.83 miles of track owned by the Tennessee Central Railway.[2]

The railway main and branch lines are single-tracked, but passing sidings are provided at frequent intervals which permit opposing or over-taken trains to be met and/or passed with little difficulty. Aside from the yard trackage which is available in such places as Nashville, Cookeville, Monterey, Crossville, and Emory Gap, the longer "between-yard" sidings on the Eastern Division, for example, have a capacity of 40 to 50 cars[3] or more.[4]

The weight of TC main line rails over the Eastern Division, although in the process of being upgraded, average about 90-100 pounds per yard, which is somewhat lighter than the national average for railway main lines. The TC branch line rail averages generally ranges between 60 and 90 pounds per yard.[5]

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[1] Tennessee Central Railway Company, [Employee] Timetable Number 36, effective September 4, 1955.

[2] 1966 Annual Report: Tennessee Central Railway Company, p. 13. (Unpublished, preliminary work copy.)

[3] Based on average car length of 50 feet.

[4] Unpublished records of J. M. Pewitt, Tennessee Central Engineering Department.

[5] Engineering records, "Condensed Rail Chart" as of September 30, 1957 (subsequently revised). Records of Carl Jackson.

The Tennessee Central line of road, even though it goes through some rugged Cumberland country, is forced to tunnel at only one point, that being at the crest of Walden Ridge. However, several reasonably deep cuts are necessary in the climbing and crossing of the plateau as are a considerable number of bridges and trestles.

Interchange points. The Tennessee Central interchanges traffic with four other railroads. These lines and points of interchange include the Illinois Central Railroad at Hopkinsville; the Louisville and Nashville Railroad at Clarksville, Nashville, and Harriman; the Southern Railway at Harriman; and the Cincinnati, New Orleans and Texas Pacific Railway (which is leased by the Southern Railway and forms an important link in the Southern system) at Emory Gap.

Through its connections with the four other railroads the Tennessee Central can form part of routes directly connecting Nashville and other on-line points with such cities as Chicago, Memphis, St. Louis, Birmingham, New Orleans, Atlanta, Louisville, Cincinnati, and Knoxville.

While the TC, through its four connectors, could form a part of a two-line haul between places served by the TC and some of the above-mentioned cities, the TC, of course, does not necessarily form a part of the best and most-used route between any two given points. A number of factors could result in the TC-connecting-line routeway being at a competitive disadvantage. Nevertheless, the fact remains that the TC is physically in a position to offer service to these distant cities through one interchange, which often means that the Tennessee Central may indeed form a part of the shortest or most

economical route between certain on-line and off-line points.

By virtue of the TC's east-west orientation across Tennessee, the railroad can and does function as a short line route for shipments moving to and from certain points in the West and Midwest to points in East Tennessee and the Carolinas. Such movements over the TC, assuming at least a three-line haul, would most likely be received from or given to the Illinois Central at Hopkinsville and would be given to or received from the Southern at Harriman.

Stations maintained. Although in recent years the Tennessee Central has closed a number of agency stations, 17 were in operation as of July, 1967. Two stations exist in Kentucky: Hopkinsville, a joint-agency station with the Illinois Central Railroad, and Edgoten, a station serving Fort Campbell. The remaining 15 operating stations, all in Tennessee, include: Ashland City and Clarksville on the Western Division and Nashville, Old Hickory, Lebanon, Watertown, Carthage, Cookeville, Algood, Monterey, Crossville, Crab Orchard, Rockwood, Emory Gap, and Harriman on the Eastern Division. In this chapter it will be the last eight mentioned stations--those pertaining to the "Cumberland Section"--that will be given special consideration.

Offices, shops, and yards. The general offices and operating headquarters of the Tennessee Central are maintained in Nashville. In addition, regional traffic offices are maintained in Atlanta, Birmingham, Chicago, Cincinnati, and Hopkinsville. An operating division point office is maintained at Monterey. At this point train crews are changed and the Eastern Division is divided into two

operating districts: Nashville to Monterey and Monterey to Emory Gap-Harriman.

The principal yard of the railway--a stub end type--is located in Nashville at "Shops" and is the point of origin for movements out of Nashville for either the Eastern or Western divisions. Other important yards are located at Monterey and at Emory Gap.

Also located at "Shops," a fairly extensive area alongside the Cumberland River, about one mile east of the railway's general office building in downtown Nashville, are the operating department offices, the locomotive and car shops, and diesel locomotive servicing facilities, the last also being duplicated in Monterey.

Locomotives and cars. As of July, 1967, the Tennessee Central owned 20 diesel-electric locomotives. These were all built by Alco and all have a "B-B"[6] wheel arrangement and fall into nine different series. The oldest locomotive in service was purchased in 1941; the most recent additions include three rebuilt locomotives acquired in 1966. All but one of the locomotives have horsepower ratings of 1,600 or greater, the most powerful units being two of 2,000 horsepower each. The one locomotive having less than 1,600 horsepower is a 660 hp switch unit; all other units are roadswitchers. All locomotives are freight units, but six are suitably equipped to be operated in passenger service.

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[6]Diesel locomotives may be classified on the basis of wheel arrangements through the use of symbols employing various combinations of letters and numbers. A "B-B" wheel arrangement indicates that the particular locomotive has two trucks, with two powered axles per truck.

Also, as of July, 1967, the railway owned a total of 573 pieces of revenue-earning rolling stock. These cars consisted of several varieties: chip hopper, box, covered hopper, gondola, flat, wood rack, and coal hopper. The most common type of car owned by the TC is the coal hopper, of which there are 301 in number. The second and third most common car types include the covered hopper (129) and the box car (73).

Rail Services Provided

Freight. For practical purposes the Tennessee Central's only business is that of hauling revenue freight. The freight business of the railway is almost entirely of car-load quantities; less-than-car-load shipments represent only a small and ever decreasing portion of the total TC freight business.[7] On the other hand, an increasing portion of freight revenues is being derived from the handling of piggyback (trailer-on-flat-car) traffic, and this source of revenue is expected to continue to increase.

The importance of freight to the "freight only" Tennessee Central would be obvious. In 1966, for example, out of total operating revenues of $3,973,024 freight revenues contributed $3,534,634 (about 89 percent), the difference being shared by passenger and miscellaneous passenger-train revenues, express, and other and incidental revenues.[8]

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[7] In 1966 LCL tonnage amounted to less than 1/10 of 1 percent of the total revenue tonnage hauled.

[8] 1966 Annual Report, Table 6.

One aspect of the TC freight business has shown phenomenal growth: piggybacking. From an inauspicious beginning in late 1963, this aspect of freight transportation has rapidly increased in importance. From 1964 to 1966 revenue from TOFC operation has more than doubled, rising from $21,555 to $48,037.

As will be seen in the discussion to follow, the TC freight business is going through a stage of transition. The apparent over-dependence on coal in past years combined with the increasing loss of such revenue in more recent times has resulted in a change in the freight tonnage "mixture" of the railway. The railway traffic-commodity mixture is becoming more diversified: partly by design, partly by default, i.e., the loss of traditional coal and commodity tonnage and revenues.

Passenger. The Tennessee Central at present offers no regularly-scheduled passenger service. The last regular passenger runs took place on July 31, 1955,[9] but on several occasions thereafter special excursions of one type or another were run. However, recently the TC has taken possession of six used Reading Railroad passenger coaches and railway interest apparently has been revived in the passenger excursion business.[10]

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[9] L. C. Hatcher, Tennessee Central Railway Accounting Department, personal interview.

[10] C. B. Gotto, Tennessee Central Railway Car Service Department, personal interview.

III. OPERATING PROCEDURES FOR THE MOVEMENT OF FREIGHT TRAFFIC[11]

Western Division

The 85-mile Western Division operates on the basis of a six-day week. Daily except Sunday two trains move westward out of Nashville over the Division. The first train, leaving around 8:30 a.m. makes a round trip run between Nashville and either Clarksville or Edgoten, depending upon the work to be done, and handles the local switching that needs to be done en route. Then, around 1:30 p.m., a second train, No. 71[12] departs on a round-trip run for Hopkinsville. The latter train will provide switching service at Edgoten (Fort Campbell) if the earlier-departing train is not scheduled to do so. The first train upon completing its duties turns around and ordinarily is back in Nashville between 9 and 10 p.m. "No. 71" sets off and picks up cars to be interchanged with the Illinois Central at Hopkinsville and returns to Nashville as "No. 72,"[13] generally arriving around 3 a.m.--about 13 hours after the initial departure from Nashville.

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[11] Information contained in this section is based largely on interviews with Tennessee Central Railway employees, Claude Smith, agent at Algood, J. J. Judd, agent at Monterey, and Jack White, trainmaster, and on the writer's own personal experiences and observations.

[12] Officially, each operating day all scheduled freight trains was annulled; each train then, technically, runs as an "extra." However, "unofficially" a given "extra" train is often referred to by its originally stated timetable number. Officially, though, the "extra" train is <u>not</u> designated by a timetable number, but is identified by the locomotive number of the <u>leading</u> diesel unit of a given train. Thus, for example, an "extra" train pulled by lead locomotive Number 301 would then operate as "Extra 301."

[13] Railroads traditionally assign odd numbers to trains moving to the south or west and even numbers to trains moving north or east.

Thus, in a routine working day, the Western Division business is handled by two crews and by four different train movements (two trains in each direction), the Nashville-Clarksville/Edgoten and the Nashville-(Edgoten)/Hopkinsville runs.

Eastern Division

As compared with the Western Division operations, train movements over the Eastern Division are somewhat more numerous and complex. "Extra" runs between Nashville and Emory Gap are made seven days a week. Around midnight "No. 84" leaves Nashville for Emory Gap. The eastbound train stops at Monterey for a change of crew, and then proceeds on to Emory Gap, arriving there generally between 9:30-11:00 a.m. The crew of "84" normally waits at Emory Gap for the CNO&TP "setoffs" for the TC and then the train departs for Monterey (and a change of crew) and Nashville as train "No. 81." These two trains--"81" and "84"--are the only through trains on the Eastern Division. All others run as extra locals.

On a variety of daily operating schedules, the TC runs the following locals. (1) An eastbound local run operates out of Nashville for Lebanon. About two days out of six the Lebanon crew will also work Watertown and the Carthage Branch and may even go as far eastward as Baxter. (2) A second local moves westward from Monterey and switches Algood and Cookeville and even Baxter, when necessary (usually about two times a week). (3) A third local moves eastward from Monterey on a Monday-Friday schedule and switches Crossville and Crab Orchard. (4) A fourth local often runs between Emory Gap and

Crab Orchard. This run is always made on Sundays and generally occurs about two other days during the week. (5) A fifth local--actually two different trains and crews--operates out of Emory Gap and switches Rockwood and Harriman. (6) A sixth local operates on Saturdays only and works the Crawford Branch out of Monterey. The train leaves around 7:30 a.m. and takes about six and one-half hours for the round trip. (7) A daily local, Monday through Friday, makes a run to Old Hickory out of Nashville around 6:15 a.m. and generally returns to Nashville before 3 p.m. On Saturdays the Old Hickory switching is handled by the Lebanon crew (see (1) above).

Operating Problems

Partially as a result of the type of terrain across which the TC passes, certain railway operating problems arise that contribute to inefficiency in the movement of freight. Particularly we are interested in certain aspects of the geographical situation on the Cumberland section of the Eastern Division that make for operating difficulties or inefficiency--whether they be measured in time, money, or both. While it would be impossible to discuss all the operating problems that are influenced by geographic factors, it would seem worthwhile to comment on and to give examples of several of the situations that commonly arise.

Generally speaking, many of the operating problems of the TC, and other railroads as well, are geographically-influenced engineering problems. For example, landforms and some water features influence railroad construction and often create the need for steep grades and

sharp curves, winding indirect routes, bridge building, tunneling, and the construction of cuts and fills. Once a railway has been constructed and the effect of the landform influence has been modified to a degree, the partial engineering solutions often become railway operating problems. The engineering feat of building a rail line through rugged terrain may very well turn into an operating problem involving the movement of heavily loaded trains around sharp curves, up steep grades, under low clearances, and through narrow constrictions, such as tunnels, bridges, and cuts.

Weather, too, can exert an influence upon rail operations. The effect of a violent storm or blizzard could obviously affect rail operations, but even a light rain on steel rails can have a strong effect on locomotive tonnage ratings.

As an example of the effect of landforms on TC operations, a 1,600 hp diesel unit on the Western Division between Edgoten and Hopkinsville--the most nearly level section of the entire railway--in good weather is rated at having the capacity to pull a train weighing up to 3,500 tons. Yet, the same unit has at its highest rating on the Eastern Division main line a rating of 2,300 tons--a reduction of over 34 percent. And this maximum 2,300 ton rating, it should be noted, applies to an eastbound and largely downhill segment of road between Crab Orchard and Emory Gap. This same 1,600 hp unit has a rating of only 1,000 tons for westbound movements that must climb the Cumberland escarpment between Emory Gap and Daysville. Even lower tonnage ratings are in existence for eastbound movements that must climb the Highland Rim front and the Cumberland escarpment.

Between Buffalo Valley and Silver Point the tonnage rating is 700 tons--80 percent less than the rated maximum 3,500 tons on level ground; thus, it would take five diesel units to pull a 3,500-ton eastbound train up the Silver Point grade, whereas one unit could pull the same train across the flat Pennyroyal District of Kentucky between Edgoten and Hopkinsville. The climb of the Cumberland front between Algood and Monterey is only slightly easier than the Silver Point climb--a rating of 800 tons per unit is in effect.[14]

At several points on the TC main and branch lines across the plateau it may be necessary to "double" the hill.[15] Three common doubling situations include eastbound movements between Monterey and Dripping Springs over "Flat Rock Hill," eastbound movements between Silver Point and Algood over "Silver Point Hill," and westbound movements between Daysville and Monterey over "Nigger Hill." Such operations, of course, are costly as well as time consuming.

In addition to limitations on tonnage, grades and curves can obviously limit train speeds, whether upgrade or downgrade. Curvature, especially in conjunction with the "overhang" resulting from railroad usage of the new longer freight cars, necessitates low speeds as many cars and/or their loads will not clear protruding trackside landforms

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[14]Tennessee Central Railway Company, [Employee] Timetable No. 36.

[15]To "double" a hill refers to a rail practice utilized in situations whereby the total tonnage of a given train exceeds the pulling power of the train's locomotives on a particular grade. In such cases the train may be separated into two or more sections and each section pulled to the top of a grade one at a time. Once all sections have made it up a grade in this fashion, the train is recoupled and is able to proceed on its way.

or vegetation. A particular problem to the TC is the combination of a slight curve approach and narrow bridge at the crossing of the Caney Fork River.

Reduced speeds and/or the likelihood of freight damage because of curvature along or because of various combinations of curves, grades, close clearances (man-made or natural) affect the TC in a number of points in the plateau area. In addition, the problem of cold weather and wet rails can cause additional decreases in locomotive tonnage ratings. Since the Cumberland Plateau and the Highland Rim are higher than the nearby Basin and the Ridge and Valley areas, the line through these higher elevations tend to receive more cold and wet weather and, subsequently, more problems with the movement of freight.

IV. THE FUNCTION OF THE TENNESSEE CENTRAL AS A MOVER OF FREIGHT[16]

The Tennessee Central as well as any other railroad can be characterized on the basis of its function in at least four ways. A road may be recognized as being predominantly (or perhaps entirely) a carrier of the following types of traffic: (1) a carrier of internal traffic, (2) a traffic originator, (3) a traffic terminator, or (4) a carrier of bridge traffic.[17] The TC will be examined in light of these four functions; first on a system-wide basis and, second, on the basis of the Cumberland section.

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[16]All traffic data given in Part IV and V, unless otherwise indicated, were taken and/or compiled from Tennessee Central accounting records.

[17]Functional division of railroads as suggested by Professor William Wallace. See William H. Wallace, "Freight Traffic Functions

Internal Traffic

System-wide. The Tennessee Central's internal traffic--that is, traffic that both originates and terminates on the railway's own lines--has declined in recent years. Whether measured in terms of cars and tonnage handled or in terms of local freight as a percentage of total freight carried, all indicators reflect a downward trend.

During 1965, the most recent year for which comparable traffic data are presently available, the TC's internal traffic amounted to 11,617 cars and 684,697 tons. The local business traffic tonnage accounted for 29.4 percent of the TC's freight business in 1965, as compared with 39.1 percent three years earlier. By 1966 the local traffic percentage had dropped even further to 17.1 percent, and only a total of 7,360 cars and 430,698 tons had been handled.

The 11,617 local cars handled in 1965 contributed $550,018 in revenue. The greatest amount of revenue and tonnage from TC local traffic is accounted for by freight billed out of Nashville (6,497 cars, 398,417 tons, and revenues of $248,739). The second-most important station for local traffic is Emory Gap (3,594 cars, 222,768 tons, and revenues of $248,739). It should be mentioned, however, that the billing information on local shipments reflects the shipments at points of termination, not at points of origin. Thus, Monterey in the TC commodity reports appears at first glance to be insignificant in local shipments as no local revenue or tonnage is shown. However,

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of Anglo-American Railroads," Annals of the Association of American Geographers, LIII (September, 1963), 312-331.

separate coal tonnage figures indicate that in 1965 almost 240,000 tons of local coal originated in Monterey--coal that terminated largely in Nashville and Emory Gap and thus is reported in the traffic data for Nashville and Emory Gap respectively.

Cumberland Section. Because of the particular way in which TC traffic data are organized, it would be extremely difficult and time consuming to be able to determine the purely local traffic on the Cumberland Section, that is, traffic that both originates and terminates within the Plateau area. However, most of the purely local movements would involve coal moving from Monterey to Emory Gap, where it would then be switched and delivered to the Tennessee Valley Authority's Kingston Steam Plant. As can be best determined, about 50 to 60 percent of all Monterey area mined coal is destined for Emory Gap, the balance is non-local traffic headed for Nashville. According to this breakdown, in 1965, when 240,173 tons of coal left Monterey, between 120,000 and 145,000 tons of local coal traffic moved within the Cumberland Section.

Considering terminations on the Cumberland Section, for which more information is available, one finds that of the 11,617 cars and 684,697 tons of local traffic handled by the entire TC in 1965, 4,332 cars and 248,165 tons terminated on the Cumberland Section. This represents about 36 percent of all the TC's local terminations as measured in terms of tonnage. About 222,768 tons and nearly 90 percent of the local Cumberland terminations are accounted for by Emory Gap alone, the remaining, but considerably less significant, amounts being largely accounted for by Cookeville (9,586 tons) and Rockwood (7,167 tons).

Originating Traffic

System-wide. Originating or forwarded traffic, essentially, is traffic that originates on the Tennessee Central and that terminates at a point off the TC. This type of traffic movement has increased substantially in the last two years reported (1965-66). In 1963, for example, the low point in the last five years for cars handled, traffic amounted to 9,199 cars and 352,647 tons, and by 1966, after a substantial increase, the totals amounted to 16,519 cars and 700,337 tons. In 1965 originating shipments in total tonnage accounted for 18.1 percent of the TC's business, and in 1966 the originating freight accounted for 27.9 percent of all TC freight business.

The nearly 11,000 cars of originating traffic in 1965 contributed $789,444 in freight revenues. By far the leading TC station in both cars and tonnages forwarded is Crab Orchard. In 1965, 3,132 cars weighing a total of 152,204 tons left with loads from Crab Orchard. Measured in tons shipped, other leading TC stations were Nashville (83,292 tons), Rockwood (35,976 tons), and Crossville (27,405 tons). In revenues contributed Crab Orchard ($125,830) was surpassed by both Nashville ($155,357) and Edgeton ($151,925).

Cumberland Section. Of the 10,958 cars and 419,562 tons of originating freight on the TC in 1965, the Cumberland Section accounted for 5,384 cars and 248,796 tons (59.3 percent of the TC's total originating tonnage figure).

The leading freight originating station on the Cumberland Section is, of course, Crab Orchard, which leads in total cars, tonnage, and

revenue produced, and accounts for about 61 percent (152,204 tons) of the freight originating within the Plateau area. Other leading stations include Rockwood (35,976 tons) and Crossville (27,405 tons). Emory Gap, unlike its situation as a leading local traffic billing station, has virtually no forwarded traffic business (1965: 2 cars, 89 total tons). Monterey, too, with only 103 cars and 3,912 tons shipped in 1965, is of little importance in the freight forwarded function.

Terminating Traffic

System-wide. The Tennessee Central's chief function on the basis of cars handled, tonnages hauled, and revenues earned is that of freight terminator. Terminating freight is freight that originates off-line and that terminates on-line. As of 1965 this function accounted for 49.7 percent of the TC's total freight tonnage, a percentage that has remained reasonably constant for the last five years (1962-66). In 1968 the TC received 25,539 cars and 1,156,378 tons of interline traffic.

A total of $1,979,202 in revenues were provided by interline freight terminations in 1965. The leading point of termination for inbound traffic, whether measured in revenue cars or total tonnage, was Nashville, which accounted for $789,441 in revenues and 457,443 tons, or about 39.6 percent of the TC's total inbound tonnage. Other leading stations in tonnage include Old Hickory (250,615 tons), and Rockwood (141,340 tons).

Cumberland Section. Within the Cumberland Section in 1965 a total of 4,733 cars and 243,177 tons of freight were terminated, representing 21.0 percent of the interline tonnage terminated for the system as a whole.

Of the eight TC stations in the Cumberland Section, only four, Algood, Cookeville, Crossville, and Rockwood have as their main function--based on total tonnage--the termination of interline freight, which is the principal function of the railroad in its entirety. Crab Orchard's previously-mentioned outbound shipments overshadow inbound shipments (152,204 tons outbound versus 174 tons inbound); Emory Gap is dominated by the 222,768 tons of terminating local freight, and, accordingly, the 644 tons of interline freight received is insignificant; Harriman's inbound tonnage is only 1,283 tons as compared with its outbound tonnage of 14,586 tons; and Monterey, even aside from the "unbilled" local coal movements which originate here, has slightly more tonnage moving out than that which moves in (3,912 tons versus 3,359 tons).

The three most important freight terminating stations in the Cumberland Section are Rockwood (141,340 tons), Crossville (48,928 tons), and Cookeville (37,358 tons). Thus Rockwood, with 58.1 percent of the Cumberland terminations, is by far the most important terminating station.

Bridge Traffic

System-wide. Bridge traffic for the Tennessee Central, essentially, is traffic for which the TC is the intermediate carrier. In other words,

bridge traffic is traffic that does not originate or terminate on the TC, but traffic which the TC receives from one connecting carrier and delivers to another connecting carrier. This bridge traffic function represents the smallest component of the TC's four main traffic functions.

Between 1962 and 1966 the bridge tonnage handled by the TC has fluctuated from a low of 52,964 tons in 1962 to a high of 67,782 tons the following year. In 1965 a total of 63,079 tons were handled, which involved 1,859 cars and revenues of $107,264. Based on total tonnage, the TC's bridge business in 1965 accounted for a small 2.7 percent of its total freight tonnage. Thus, in practice, it appears that the Tennessee Central, for whatever the reason, is of only slight importance as a connecting route between the Midwest and the Southeast.

There are 10 possible bridge line movements that can take place over TC rails. These movement routes include various combinations of possible movements between any two connecting-line interchange points, among which are Hopkinsville, Clarksville, Nashville, Emory Gap, and Harriman. Based on a sampling of six months of waybills involving a total of 747 bridge line movements, the most frequent movement, representing 30.1 percent of all such movements, was between Hopkinsville and Harriman. Only slightly less frequent in occurrence was the Hopkinsville-Emory Gap route, which was used 28.8 percent of the time. The other leading bridge traffic routeway and frequency of occurrence included: Nashville-Harriman, 17.8 percent; Hopkinsville-Nashville, 14.2 percent; and Nashville-Emory Gap, 7.7 percent. Very infrequent movements were shown between the following points: Clarksville

and Harriman, Clarksville and Nashville, Harriman and Emory Gap, and Hopkinsville and Clarksville. In the sample taken, no movements were recorded between Clarksville and Emory Gap.

Cumberland Section. Bridge traffic over the Cumberland Section would, strictly speaking, represent traffic that originated or terminated at points west of Algood and at points east of Emory Gap-Harriman and that does not originate or terminate within the Cumberland Section itself. However, because of the problem involved in obtaining such information, we will, instead, look at the role the plateau area plays in bridge movements involving the TC as a whole. Thus, we are interested in bridge movements between Emory Gap-Harriman and Nashville and points beyond, i.e., Clarksville and Hopkinsville.

There are seven possible bridge line routings involving the Cumberland Section: Emory Gap or Harriman to Hopkinsville, Clarksville, or Nashville, and Emory Gap-Harriman. The three most commonly used routings used are Hopkinsville-Harriman, Hopkinsville-Emory Gap, and Nashville-Harriman (see discussion of system bridge traffic). All told, 84.9 percent of the TC bridge movements crossed the plateau between Nashville and Emory Gap, while 48.3 percent made the entire journey between Nashville and Harriman. The only type of bridge movement concerning the Cumberland Section that does not involve an actual climb of the Plateau is the combination Harriman-Emory Gap, of which there was only one recorded movement in the sample.

V. LEADING COMMODITIES ORIGINATING AND TERMINATING WITHIN CUMBERLAND SECTION[18]

Within this part V "originating traffic" will be a collective term and will be used in a broader sense than that used heretofore in this chapter. Originating traffic will refer to traffic that physically originates within the Cumberland Section, regardless of whether it is classified interline forwarded or local. Terminating traffic, in turn, will include physical termination of any traffic, whether it be interline received or local. However, the same limitations still exist on the reporting of exact data on local traffic originated as was discussed previously.

Originating Traffic

The two most important commodities originating on the Cumberland Section are coal from the Monterey area and limestone products from Crab Orchard. In 1965 the combined tonnages of these two commodities originating from Monterey and Crab Orchard, respectively, totaled 386,060 tons, which amounts to 34.1 percent of all the freight tonnage originating on the entire rail line. A total of 3,912 hopper cars of coal--a total weight of 240,173 tons--were shipped out of Monterey, which included loadings at the Crawford Branch points of Bills Branch, Crawford, and Wilder, as well as at Monterey, which accounts for the bulk of the mined coal (209,899 tons). In Crab

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[18] Based on unpublished Tennessee Central Railway accounting records entitled "1965 Commodity Reports."

Orchard, also in 1965, 3,004 cars were loaded weighing a total of 145,887 tons, that contained products such as ground and crushed limestone and agricultural limestone.

Other leading commodities shipped out of the Plateau area, based on tonnages, include ferro-silicon-manganese alloys from Rockwood (34,820 tons), fiberboard from Harriman (14,464 tons), rubble stone from Crossville (10,498 tons), railroad ties from Crossville (7,890 tons), pulpwood from Cookeville (4,404 tons), and wooden flooring from Monterey (3,189 tons).

Based on freight revenues, the leading commodity transported by far is coal out of Monterey ($219,020) followed, again, by limestone product shipments from Crab Orchard ($116,431). Other leading revenue contributors were the alloys from Rockwood ($59,147), fiberboard from Harriman ($40,965), rubble stone out of Crossville ($17,500), railroad ties from Crossville ($14,586), wooden flooring from Monterey ($8,608), and lumber from Cookeville ($5,392).

Terminating Traffic

The leading commodity by far that is terminated within the Cumberland Section is Monterey coal moving into Emory Gap. Coal terminations in Emory Gap in 1965 amounted to 222, 768 tons, or 45.3 percent of the total terminations on the Cumberland Section. Following coal in tonnage in rapidly diminishing importance is manganese ore (97,636 tons) and bituminous coal (28,775 tons) to Rockwood; prepared animal feed (11,817 tons) and iron or steel sheets (5,878 tons) to Crossville; bituminous coal (5,215 tons), gasoline (5,011 tons), and

and lumber (4,732 tons) to Cookeville, and carbon furnace electrodes to Rockwood (4,136 tons).

As with tonnage, the two leading commodities terminated in terms of freight revenues are coal to Emory Gap ($186,296) and manganese ore to Rockwood ($96,572). Also contributing important revenues to the TC are movements of prepared animal feed to Crossville ($24,311), electrodes ($19,219) and bituminous coal ($17,297) to Rockwood, gasoline to Cookeville ($14,997), iron or steel sheets to Crossville ($13,278), bituminous coal to Cookeville ($12,621), gasoline to Algood ($11,865), and lumber to Cookeville ($9,858).

CHAPTER VI

THE TENNESSEE CENTRAL RAILWAY COMPANY

The history of the Tennessee Central from February 1, 1922 until the time operations ceased on August 31, 1968 can perhaps best be organized around the several management/ownership teams that controlled the road during various segments of the corporation's 46-year life span. No major expansions or contractions of the line took place during this period of the railway's history; instead the railroad's progress is measured largely in terms of the trends in revenue and profit.[1]

I. THE STANLEY-DAVIS ERA: 1922-1946

From 1922 to 1946 the Tennessee Central was controlled by the Paul M. Davis-American National Bank interests, and the line's presidency was in the capable hands of H. W. Stanley, one of the former receivers.

Traffic and Revenues

During Stanley's tenure the TC achieved its greatest financial success. With the exception of three depression years (1931-1933) and 1946, when Stanley left the presidency, the Tennessee Central showed a net profit every year that H. W. Stanley was president. The most profitable year in the railway's history occurred in 1943 when the

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[1] All figures, unless otherwise or more specifically specified, are taken from the Tennessee Central annual report files maintained by the accounting department of the railway.

railway from total operating revenues of $4,841,515 produced a net income of $480,208--a figure that was never even approached thereafter.

TC annual freight tonnages, which amounted to 1,054,823 tons in 1922 (11 months, February-December only) had risen to 2,602,234 tons in 1945. The most traffic hauled during Stanley's first term as president was in 1942 when the TC hauled 2,899,985 tons of freight and recorded 270,519,943 freight ton-miles.

In more general terms, the peak period for TC freight tonnages were the years 1927-30, during which time the TC handled at least two million tons of freight per year, and during the years beginning with 1941 and extending to and beyond Stanley's departure, during which the TC again hauled freight at a rate in excess of two million tons a year. In fact, between 1942 and 1946 the Tennessee Central tonnages were in excess of 2.5 million tons annually. The low years in tonnage include 1923 and 1924, which averaged about 1.4 million tons each, and the depression years, 1932-34, when the tonnage figures were all less than 1.5 million tons annually.

Acquisitions

The last significant acquisition of the Tennessee Central took place on December 12, 1923, at which time the TC purchased the trackage that is known as the Old Hickory Branch.[2] This 7.3 mile branch line formerly served the Old Hickory powder plant operated by the Federal Government during World War I, and the rail line was being jointly

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[2] Annual Report, 1923, Tennessee Central Railway Company (Nashville: Tennessee Central Railway Company, 1924). Annual reports for the years 1923 through 1966 will hereafter be cited as "Annual Report" with the appropriate date.

used by the TC and the Nashville, Chattanooga and St. Louis. Following the World War I armistice the powder plant was closed and the branch line was no longer used. Later the Nashville Industrial Corporation, having taken over the Government holdings at Old Hickory, tried to get the L&N-NC&St.L to take over the branch line. When no agreement was reached, the Corporation turned to the TC which did agree to take over the operation. This proved to be a wise decision for the TC, for also in 1923 DuPont chose Old Hickory as the site for its plants. Plant construction began in April, 1924, and operations began in January, 1925.[3] Since that time DuPont has been a very important customer for the TC.

On January 7, 1937, the Interstate Commerce Commission authorized the TC to purchase the Nashville Terminal Company, which had been leased by the TC all along. The consolidation of the properties took place March 31, 1937.[4]

Other Developments

In 1939 the Tennessee Central acquired its first diesel-electric locomotive, a 660 hp switcher built by Alco-Westinghouse. Reportedly, this was the first diesel locomotive to be operated in the city of Nashville.

Three years later, 1942, the U.S. Army built Camp Campbell astride the Tennessee-Kentucky boundary near the Tennessee Central's

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[3]Unpublished history of Tennessee Central. Property of R. S. Tatum, Tennessee Central Railway Company.

[4]Annual Report, 1937.

main line. Later this became a permanent military installation and was renamed Fort Campbell. Fort Campbell continues to provide significant revenue for the TC.[5]

II. THE ARMSTRONG ERA: 1946-1968

In June of 1946 a group of Eastern capitalists, headed by the investment banking firm of J. L. Armstrong and Company of Philadelphia, acquired control of the Tennessee Central Railway.[6] C. E. Huntley was named to succeed H. W. Stanley as president, but served only a short time.[7] Mr. Stanley regained the presidency in 1947 and so served until he retired on March 24, 1954. On this date Earl Keister became president and served until April 17, 1959, at which time Leo Nielson assumed the presidential role. The year 1966 found the TC having to have three different presidents. Mr. Nielson resigned in April, J. L. Armstrong, himself, served for an interim period, and on September 27, William W. Glenn, the last man who would ever be president of the line, took office and served until the line went into receivership.

Post-War Years: 1946-1959

In 1946 the Tennessee Central suffered a net loss of $506,473, which at that time marked the worst year in the 25 year history of the line. Lesser losses were shown for 1947 and 1948, but by 1949,

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[5] Unpublished history, p. 10.

[6] News item in the Nashville Tennessean, June 21, 1946.

[7] L. C. Hatcher, personal interview.

the second full year after H. W. Stanley had returned to office, the railway again showed a modest profit of $123,048. From 1949 through 1953, the last full year under President Stanley, the TC showed a profit in excess of $120,000 per year. In 1954 under Earl Keister the TC profits were a meager $2,324, but for 1955-56 the road showed a profit averaging about $250,000 per year. The road lost money again in 1957, but was able to show small profits in 1958 ($16,991) and 1959 ($80,972), the latter being the last year in which the TC would ever show a profit and the first and only year to show a profit under newly-elected president Leo Nielson.

During the post-war years the freight tonnages handled ranged between a high of 3,596,375 tons in 1956 and a low two years later, of 2,303,316 tons in 1958--which was the lowest figure in 17 years. The average yearly tonnage for the period was about three million tons. In freight ton-miles the railway's best year was the 285,351,565 freight ton-miles registered in 1955. Generally speaking, in terms of tonnage the best years for the TC occurred during the period 1955-57, during which time tonnages averaged about 3.3 million tons per year. Unfortuately in 1957 profits did not keep pace with tonnages, and the railroad showed a net loss of $93,747. The poorest tonnage showings occurred in 1946, in 1949 and 1950, in 1954, and in the years 1958 and 1959, which reflected still further the downward trend in tonnage which first appeared in 1957 and which would continue on into and through the remaining period of the TC's existence.

The Declining Years: 1960-1966

In 1960 the Tennessee Central's books showed a net loss of $84,308.

Following a slightly smaller loss in 1961, the TC in subsequent years continued to have losses in ever-increasing amounts. For the year 1966, the last full year of TC solvency, the railway's net loss amounted to $1,243,263.

After the high tonnage peak in 1956--which was the greatest tonnage handled in the railroad's entire history--the tonnage figures began to decline and reflected an almost steady decline in the railway's freight business until the line eventually ceased operations in 1968. From the 1956 peak of about 3.6 million tons, the tonnages fell to a 1960-66 average of about 2.5 million tons annually, the absolute low being 2,323,715 tons in 1965. The high for the period was 2,586,919 tons recorded in 1962. In 1966, the last complete year of TC operations for which data are available, the tonnage figure of 2,513,392 was the highest tonnage recorded since 1962. Ton-mile figures ranged between a high of 214,993,000 in 1963 and a low of 194,456,000 the following year.

President Nielson had been unable to reverse the TC's financial trend and resigned early in 1966. Later that year William W. Glenn, considered by some to be the modern-day Jere Baxter, was brought in as president, and the responsibility of trying to revitalize the TC fell upon his shoulders.

Other Developments

No significant construction, abandonments, or acquisitions occurred between 1946 and the last year of TC operation. However, several important service changes did take place. On January 30, 1949,

the Tennessee Central was given permission to drop two of its four passenger trains, night passenger trains Number 3 and 4.[8] About six years later, July 31, 1955, the TC dropped its last two passenger trains, Number 1 and 2, and, thus, became a freight-only railroad. The last steam locomotive run on the TC took place on March 18, 1952, about 13 years after the first diesel-electric locomotive appeared on the property, and the last steam locomotive left the TC roster on May 31, 1955.[9]

III. CESSATION OF OPERATIONS AND THE SALE OF THE TENNESSEE CENTRAL

Beginning in 1960 with its $84,308 loss the Tennessee Central began a series of deficits on its income statement that continued and that tended to increase with each successive year. By 1966 the net loss exceeded $1.2 million. Prior to 1965 the railroad had at least maintained a railway operating profit (operating revenues less operating expenses plus railway tax accruals) and had gone into the red on the basis of equipment rentals, fixed charges, etc., but in 1965 and 1966 the railway operating expenses and taxes exceeded the total operating revenues. In 1965 and 1966 the railway operating income account showed deficit balances of $243,189 and $422,140, respectively. Thus, the TC's financial situation continued to worsen.

In September, 1966, in an apparent final effort to save the TC Mr. Glenn was brought in as president of the road. He immediately had to face the TC dilemma: the gradual erosion of the railway's

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[8] Annual Report, 1948. [9] L. C. Hatcher, personal interview.

traffic volume and operating revenues; the steady climb in operating expenses; the loss of traditional traffic, i.e., coal, and the need for traffic diversification; the rapid increase in railway net losses; and perhaps the most critical problem of all, the repayment of long-term debts amounting to nearly $5 million that would be due within a few months.

Mr. Glenn's basic approach to the railway's ills was a program of diversification of traffic, active seeking of on-line industrial development, and a general upgrading of the railway's equipment and services. The president recruited a number of new, enthusiastic railway personnel and began to acquire new rail equipment. He initiated a program of roadway improvement, and he began to obtain results from his efforts in the field of industrial promotion.

Even with Mr. Glenn's efforts on revitalization of the railway, one overwhelming obstacle remained firmly in his path: the forthcoming maturization of the nearly $5 million in long-term notes and equipment trust certificates that would fall due on December 31, 1967. Partial payments of principal and interest on these debts had previously been deferred, but the U.S. Treasury was now insisting that these obligations be met on the due date. Regardless of the railway's long-range redevelopment plans and new signs of optimism for the TC's future, the maturing debt presented an immediate crisis for the Tennessee Central Railway.

On July 5, 1967, Mr. J. Lewis Armstrong resigned from the TC

board of directors[10] and plans were under way for the sale of Armstrong's majority stock holding in the railway.[11] Apparently the Treasury Department position at this time was that it would make some important financial concessions regarding the TC debt if the railway's closely-held stock were to be dispersed among a new ownership which would include shippers and on-line businessmen.[12]

A committee was formed to attempt to raise $1.7 million with which to buy controlling interest in the TC. An option was made to purchase Armstrong's 34,000 shares of the railway's total 60,000 outstanding shares. It was hoped that proceeds from the sale of stock would net $920,000 from cities served by the line and $815,000 from individuals and corporations interested in the line.[13]

The plans for the dispersion of the TC stock were not realized, and by the end of 1967 the TC was looking for a buyer for its property. In December, 1967, the Illinois Central expressed an interest in the TC,[14] but nothing developed from these discussions.

In default on the Treasury obligations due on December 31, 1967, and unable to find a buyer for the entire rail line, the Tennessee Central Railway finally went into bankruptcy. In an attempt to save the bankrupt line the Tennessee legislature sent to the governor a bill which would allow the State to purchase the TC and to lease it to

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[10]Notice signed by John C. Ferguson, Tennessee Central Railway Company.

[11]News item in the Nashville Tennessean, July 4, 1967. [12]Ibid.

[13]News item in the Knoxville News-Sentinel, July 14, 1967.

[14]Ibid., December 20, 1967.

another line for operation.[15] However, on April 10, Tennessee Governor Buford Ellington, who, coincidentally, was a former L&N vice-president, vetoed the proposed purchase as being unconstitutional.[16] Meanwhile interest in purchasing all or part of the troubled rail line was being shown by three railroads: the Illinois Central, the Southern, and the Louisville and Nashville.

On August 13, 1968, U.S. District Court Judge William E. Miller approved the sale of the Tennessee Central to the three above-mentioned railroads. The court was unable to arrange for one road to operate the entire TC line, so it was fragmented among the three roads as follows: The Southern paid $340,000 for the Harriman-Crossville segment, the Louisville and Nashville paid $525,000 for the Nashville-Crossville segment, and the Illinois Central paid $600,000 for the Nashville-Hopkinsville segment.[17] On August 20, TC employees and shippers were notified that as of August 31, jobs would be terminated and operations ceased. Operations were to soon be re-established by the new operating railroads, but there were no promises of new jobs for the displaced TC employees.[18]

The Interstate Commerce Commission on August 29 gave temporary approval for the IC to operate its portion of the former TC line, but as of that time it had not given its approval to the Southern

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[15] News item in the Louisville Courier Journal, April 3, 1968.

[16] Ibid., April 11, 1968.

[17] News item in the Knoxville News-Sentinel, August 14, 1968.

[18] News item in the Knoxville Journal, August 21, 1968.

and L&N.[19] The following day 12 railroad unions asked the court to revoke the three-way sale of the TC and asked that the entire line be sold to the Illinois Central in order to protect the jobs of the TC employees. A hearing on this matter was to be held on September 3.[20]

Thus closes for the time being the historic development and eventual abandonment and sale of the Tennessee Central Railway. Future court and I.C.C. decisions will likely decide the eventual rate of the former Tennessee Central Railway.

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[19] News item in the Knoxville News-Sentinel, August 30, 1968.

[20] Ibid., August 31, 1968.

CHAPTER VII

SUMMARY

The rail line formerly known as the Tennessee Central Railway Company that extends from Harriman Tennessee in the east through Nashville and to Hopkinsville, Kentucky in the west--a distance of about 250 miles--is the only east-west crossing of the rugged Cumberland Plateau barrier in Tennessee and is one of a very few such rail crossings in the Southern Appalachian plateaus.

The development of the rail line dates indirectly back to 1866, the year of the first real attempt to effectively connect East and Middle Tennessee by rail. The history of the Tennessee Central and its predecessors may be said to begin with the charter of the Nashville and Knoxville Railroad in 1884. The Tennessee Central Railroad Company, following a consolidation of several railroad properties, came into existence in the spring of 1902. In June, 1902, the line was opened for operation between Nashville and Harriman, and two years later the western division was completed between Nashville and Hopkinsville. Following two receiverships, a leasing of the entire TC line, and a two-year operation of the line by the U.S. Government, the financially-ill Tennessee Central was sold to a purchasing group and the Tennessee Central Railway Company came into being on February 1, 1922.

From its beginning in 1922 the Tennessee Central Railway operated over the Harriman-Hopkinsville rail line for a period just over 46 years.

After years of showing only modest profits and after a more recent trend beginning in 1960 in which the rail line produced larger and larger losses, the TC fell into bankruptcy and eventually ceased all operations on August 31, 1968. At the present time three other railroads, the Southern, the Louisville and Nashville, and the Illinois Central have assumed operations over respective segments of the former TC rail line.

As an operating unit the Harriman-Hopkinsville rail line crosses portions of two major physical divisions of the United States, the Appalachian Highlands and the Interior Plains. For TC operational purposes the line was divided into two divisions: the Western, extending from Nashville to Hopkinsville, and the Eastern, extending from Nashville to Harriman. For purposes of this paper the Eastern Division is divided into two parts: the Nashville-Cookeville segment and the Cookeville-Harriman or Cumberland segment, that portion of the rail line toward which this paper is primarily oriented.

In its 250-mile extent the Harriman-Hopkinsville line crosses in succession, from east to west, the Ridge and Valley, the Cumberland Plateau, the Eastern Highland Rim, the Nashville Basin, and the Northern Highland Rim. Crossing portions of 11 counties in the two-state area, the rail line passes through only one large city, Nashville, but does serve several smaller places such as Clarksville and Hopkinsville. Competing transport modes include rail, motor, and water. The rail competition is basically provided by the joint Southern-L&N route from Knoxville to Nashville via Chattanooga and by the L&N's competing Nashville-Hopkinsville route. Highway competition is found generally

along the entire routeway, the main competitor being the partially-opened Interstate 40, which will soon be completed between Knoxville and Nashville. Water competition is provided primarily by the Cumberland River segment that generally parallels the TC between Nashville and Clarksville.

The TC rail line in its entirety has a relief of 1,630 feet. The line's low point of 398 feet above sea level is reached along the Cumberland River between Nashville and Clarksville, and the high point is an elevation of 2,028 feet found on the Cumberland Plateau just east of Monterey. The most nearly straight and level portions of the line are found on the Northern Highland Rim and in the Nashville Basin. The steep gradients and sharp curvatures are associated with the Eastern Highland Rim and the Cumberland Plateau.

Until 1968 the TC functioned as an independent short-line railroad whose main line extended 250 miles between Harriman and Hopkinsville. Including branch lines total rail mileage amounted to 284 miles. The road interchanged traffic with four other railroads, the most important connections being at Hopkinsville, Nashville, and Emory Gap. As a result of the rail line's directional orientation and location of its interchange points, the line can and does function to some extent as a short-line route for freight movements between certain points in the West and Midwest and points in East Tennessee and the Carolinas.

After 1955 the TC served as a "freight-only" carrier. Through train service was provided by one train a day in each direction and

additional service was provided by several local trains operating over various portions of the line.

As a carrier of traffic the TC functioned primarily as a traffic terminator. In recent years nearly half of the TC's total tonnage has been terminating traffic. Originating traffic has become the second-most important traffic component while local traffic has steadily dropped in importance. Least important as a source of traffic are the bridge traffic movements.

The Cumberland section, on the other hand, has primarily been a traffic originator rather than a traffic terminator. The traffic originating on the Plateau is dominated by shipments out of Crab Orchard, but Rockwood and Crossville are also important. Emory Gap is important in local traffic terminations (mainly coal). Rockwood, Crossville, and Cookeville are the leading stations for freight terminating on the TC.

The two most important commodities originating on the Cumberland section are Monterey area coal and limestone products from Crab Orchard. Other leading Plateau commodities include alloys, fiberboard, stone, and forest products. Terminating traffic on the plateau section is dominated by coal moving into Emory Gap. Other leading commodities terminating on the plateau include manganese ore, animal feed, iron and steel sheets, and gasoline.

Although the Tennessee Central Railway has ceased to exist as an independently-owned company, the rail line itself is still intact and operations are being maintained by the three new owners over their respective segments. It might logically be expected that the

Illinois Central, the Louisville and Nashville, and the Southern will be able not only to hold the present traffic levels, but may well be able to increase the utilization of the rail line in the coming years. The combined strength of the three involved railroads may permit such line improvements as roadway rehabilitation, improved maintenance, increased and more diversified traffic, and the attraction of new firms to on-line industrial sites. In addition, the Cumberland Plateau area, owing in part to the current national interest in "Appalachia," may receive substantial investments in the future, both from governmental and from private sources, which, hopefully, may stimulate not only the economy in general, but rail traffic in particular. Accordingly, in the years ahead the former Tennessee Central rail line may possibly achieve the financial solvency that has eluded it for these many years.

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VITA

Dennis E. Quillen was born and raised in Waynesboro, Virginia. He enrolled at the University of Tennessee in 1960 as a transportation major and received his B.S. in Business Administration in 1964. During his senior year he was elected to Beta Gamma Sigma national honorary fraternity. He was awarded a three-year NDEA fellowship for graduate study toward the Ph.D. by the University of Tennessee Department of Geography. Upon completing his doctoral classwork in 1967, he accepted a teaching position at Eastern Kentucky University, Richmond, Kentucky, where he now holds the rank of Assistant Professor in the Department of Geography. He obtained a previously-deferred Master of Science degree in Geography from the University of Tennessee in August, 1969.

Mr. Quillen is married to the former Rebecca Kathleen Rumery of Knoxville, Tennessee. They have one child, Dawn Elizabeth.