Herman Haupt and the Development of the Pennsylvania Railroad

Railroads were America's first big business organizations, and the Pennsylvania Railroad, dominated by remarkable executive talent, ranks as one of the nation's earliest corporate giants. The expansion of this railroad from a fledgling local corporation to a major transportation system is the story of how several men, native sons of Pennsylvania with ambition and remarkable ability, laid the technical, financial, and administrative groundwork for the line's spectacular growth. With the important exception of J. Edgar Thomson, these men had no prior managerial experience; yet their names stand prominently among those of the architects of big business in the United States.

Perhaps no other railroad during the 1850's could boast, as the Pennsylvania could, of a management team as astute as Thomson, Thomas A. Scott, and Herman Haupt. These men relentlessly pursued the goals of connecting Philadelphia and Pittsburgh by rail, of expanding the interests of their home state into the Midwest, of building up industry in the region of their railroad, and of creating a strong, fiscally responsible enterprise. Each man made a significantly different contribution to the team. Thomson brought his technical knowledge and a conservative financial outlook that supplied a measure of stability and caution. Scott provided a counterpoise, contributing his ebullient personality, shrewd political sense, and fiscal daring that constantly prodded the company to expand its interests. The man who organized and operated the railroad, Herman Haupt, added a formal engineering background, a scientific mind, and natural managerial ability. His executive talents can be measured by the successive positions he held on the Pennsylvania, superintendent of transportation, general superintendent,
chief engineer, and finally as a member of the road’s board of directors.\textsuperscript{2}

Despite his lack of experience, Haupt possessed excellent qualifications for his position on the road’s management team. Born in Philadelphia in 1817 to impoverished parents, he received excellent technical training at West Point. In 1835 he emerged as that school’s youngest graduate.\textsuperscript{3} Three months after graduation he resigned from the army and went to work as a draftsman in his home town. Soon he was transferred to the field, surveying routes for future railroads in eastern Pennsylvania. His competence attracted the attention of John Bailey, chief engineer on the eastern division of the state works, who hired Haupt and sent him to Gettysburg,\textsuperscript{4} where he worked on a state railroad project.\textsuperscript{5}

The depression of the following year slowly brought all new construction to a halt, and four years later Haupt, now married and a father, found himself unemployed. He remained in Gettysburg and established the Oakridge Select Academy for boys, which he operated until it was merged with Pennsylvania College (now Gettysburg College) in 1845, when he accepted a half-time position on the college faculty as professor of mathematics.\textsuperscript{6}

While teaching he delved into the theory of railroad bridge design. As early as 1839 he had received a patent on a new bridge truss, and three years later, after further research, he published anonymously a small pamphlet “Hints on Bridge Construction.” The pamphlet, which contained his preliminary findings, provoked a lively response in engineering circles that encouraged him to continue his research. In 1851 he published the \textit{General Theory of Bridge...
Construction, which was well received and was used for decades as a standard text at the best engineering schools in the country, including his alma mater.  

Haupt was too much a man of action to settle down to a life of research; after the Pennsylvania Railroad was chartered in 1846 he sought a job on it and was granted an interview with the line's president, Samuel V. Merrick, whom he found to be "haughty and supercilious." Merrick told him he had no openings because "engineers were as plenty as blackberries," which was probably true for the general economic upsurge had not yet absorbed all those who were out of work. Disappointed, Haupt returned to his teaching duties in Gettysburg.

Plans for the Pennsylvania went ahead. To link Philadelphia and Pittsburgh as quickly as possible, chief engineer Thomson decided to build portions of the road bypassing the state-owned canals and to connect temporarily with the state's Allegheny Portage Railroad across the mountains. Connections into Philadelphia were secured using the state's Philadelphia and Columbia Railroad and its short line with the imposing name of the Harrisburg, Portsmouth, Mt. Joy and Lancaster Railroad.

Thomson lost no time in getting the work underway. By July, 1847, the eastern division of the road between Harrisburg and Lewistown was located and let to a contractor. Just as construction was about to commence in early fall, Thomson walked the entire sixty miles and pronounced the location faulty. Samuel Mifflin, an engineer on the project who had earlier employed Haupt, suggested

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9 Ibid.; Daniel Hovey Calhoun, The American Civil Engineer: Origins and Conflict (Boston, 1960), 182.

to Thomson that he could get a rapid and competent relocation by hiring his former employee.\textsuperscript{11}

Thomson sent for Haupt who hurried to Harrisburg to meet for the first time the unimposing, taciturn man who would do much for his career. Their first meeting, however, was less than a success. Haupt discovered Thomson was a man of few words and mistook his shyness for arrogance. Their meeting was inconclusive and later Haupt wrote Mifflin giving his impressions of Thomson which "were not very complimentary." Mifflin, a man of few words himself, shot back, "don't be a fool, take the position and ask no questions. I know Thomson intimately. He is a queer fish, but he is in a tight place with that location. You can help him and . . . he will not be ungrateful."\textsuperscript{12}

Haupt changed his mind and returned to Harrisburg to accept the job. By the second week in December, 1847, he was in the field. In four working days he completed a portion of the relocation Thomson had estimated would take not less than two or three weeks. Haupt's speed led his supervisor to come out to inspect the quality of his work. He found everything to his satisfaction and spent the rest of the winter trying to keep Haupt supplied with maps and profiles for additional surveying.\textsuperscript{13}

When work was slack, Haupt continued his investigation into bridge design. It was this work, rather than his excellent relocation that attracted Thomson's attention and led to several rapid promotions. Haupt kept a model of one of his original bridge designs in his office where he tested its strength by loading it with weights. One cold blustery day Thomson came into the office. While warming himself in silence, Thomson noticed the model and remarked to Haupt that "some fellow has been trying to make a bridge and he don't know anything about it. He has got his braces in the wrong way." Haupt, always eager to discuss bridge theory, countered "excuse me, Mr. Thomson, if I differ from you, I think they are in the right way. They are not braces at all, but counterbraces," and proceeded to lecture Thomson for almost an hour on his bridge experiments. The chief engineer proved to be an attentive listener,

\textsuperscript{11} Burgess and Kennedy, 47; Haupt, "The Pennsylvania," 1–2.
\textsuperscript{12} Ibid., 2–3.
\textsuperscript{13} Ibid.; Haupt to Mrs. Haupt, Dec. 18, 1847, Haupt Papers, Box 1.
examined some of Haupt's drawings, said nothing, and left. Two
days later Haupt discovered he had been promoted to principal
assistant engineer. He learned this not from Thomson but from the
other engineers who suddenly appeared asking for their instructions.
Moreover, Thomson asked Haupt to examine the plans for all the
bridges on the road and to make recommendations and suggestions
for improvements.\textsuperscript{14}

Despite his promotion, Haupt wrote his wife that he did not think
that his employment with the Pennsylvania was permanent and as
soon as the route was relocated he would be looking for another
position. But Thomson had other ideas. When Haupt completed his
assignment in the spring of 1848, Thomson promoted him to the
newly created position of assistant to the chief engineer and trans-
ferred him to Harrisburg. His new duties consisted of attending to
the detail work of all the surveying parties on the entire line and
superintending the construction of the longest bridge on the road,
across the Susquehanna River at Rockville, just north of the
capital.\textsuperscript{15} These responsibilities relieved Thomson of burdensome
detail, and he very soon left this work entirely under Haupt's charge.
Within a short time the two men were fast friends.

The construction of the bridge across the Susquehanna proved to
be Haupt's most troublesome task. This structure was the most
important and costly bridge on the entire road. It stretched 3,680
feet across the river on twenty-three wooden spans, each 160 feet
long. In March, 1849, when it was still incomplete, a violent wind,
said to have raised waves in the river as high as thirty feet, carried
away six spans. This disaster led Haupt to install heavy railings the
length of the structure to improve rigidity and provide safety for
trains crossing the river during future storms.\textsuperscript{16}

When the bridge fell Haupt was out of the state. A month before
the disaster, he had been appointed by Thomson as the road's first
superintendent of transportation and charged with the responsibility

\textsuperscript{14} Italics in the original. Haupt, “The Pennsylvania,” 4-5; Herman Haupt Chapman,
“Biography of Herman Haupt,” Haupt Papers, Boxes 26, 27, Chapter I-4, 5. Typewritten
manuscript is paged anew each chapter, hereinafter cited as Chapman, “Haupt.”

\textsuperscript{15} Haupt to Mrs. Haupt, Jan. 21, 1848, Haupt Papers, Box 1; Haupt, “The Pennsyl-
vania,” 5.

\textsuperscript{16} Burgess and Kennedy, 53; Chapman, “Haupt,” Chapter I-4, 5.
for organizing the transportation department. Thomson ordered him to visit New England railroads for suggestions and he left immediately to inspect the New York and Erie, Boston and Providence, Providence and Worcester, Fitchburg, Western and other lines. He obtained copies of all their business forms and freight rates, outlines of their personnel practices, information on their organization, and reported back to Thomson.  

For several weeks during the spring of 1849 Haupt discussed with the chief engineer the anticipated needs of the Pennsylvania and explained the practices of the New England railroads. The two men roughed out a highly centralized organizational structure for the Pennsylvania that drew heavily on Haupt’s information and Thomson’s prior experience on the Georgia Railroad. Their plan was unsophisticated by later standards of railroad management, but it was well adapted for the unfinished Pennsylvania. It created under Haupt’s direct supervision four separate departments: transportation, maintenance of track, motive power and maintenance of cars. In addition to these departments, Haupt assumed responsibility for general office accounting, for disbursements for materials and labor, and for personnel policies. This plan was adopted by the board of directors without alteration.

Until a more decentralized scheme of organization was effected in November, 1852, which removed many of the responsibilities from the superintendent of transportation, Haupt commanded a great deal of power and prestige. So much so that early in 1852 Governor William Bigler recommended him for an appointment to the board of visitors at West Point solely because he had “the patronage of the whole line from Philadelphia and with it an amount of influence which few others in the state possess.” For exercising this influence, Haupt received a salary of about $2,000 a year.


19 Edward Chase Kirkland, Men, Cities and Transportation: A Study in New England History, 1820-1900 (Cambridge, Mass., 1948), II, 440, holds that by the 1850's the office of superintendent often overshadowed that of the president because of the former's multiple activities. Frequently the superintendent drew a higher salary; William Bigler to ——, Feb. 14, 1852, Haupt Papers, Box 1. Haupt did not receive the appointment.

20 This is an educated guess. Haupt recommended to Thomson that his assistant receive $1,800 a year, and Haupt would not have recommended a higher salary for his assistant.
As the new superintendent, Haupt quickly gained a reputation for attention to detail. Each night he carefully outlined the operations for the following day to forestall any potential problems. His scrutiny extended to admonishing his assistant, Herman J. Lombaert, to put a smoking car on all trains to avoid offending the ladies, to close freight car doors to prevent fires, and to chase off the freeloaders who were riding the freight cars. Haupt closely attended to washing the cars, paying the medical bills for injured employees, overseeing the peddlers on trains and even chasing the stray cattle off the track.

The company’s prohibition against drinking on the job was closely enforced by Haupt. If an offender was caught he was summarily discharged, placed on a blacklist, and given a lecture on the evils of drink from Haupt personally. If absolute proof of drinking was lacking, the employee was required to sign a pledge of future abstinence. Haupt was also opposed to running trains on Sunday and more than once expressed a “hope to see the day when the Sabbath will cease to be desecrated in Penna. by Sunday trains.”

Haupt’s relations with his employees were typical for a period when working for a railroad was attended by great risk and small reward. In the absence of established company policy he was forced to handle problems such as injury compensation on the merits of the individual cases. If the accident was the fault of a careless employee, as in the case of a brakeman who was injured while stepping between cars, he was given five dollars to pay his travel expenses to another job. When a conductor with an excellent record was killed on the job, however, Haupt visited the deceased’s family and recommended to his board of directors that a sum be placed at their disposal. As a general rule, he felt that “every employee

\[\text{than he received.} \]


21 Haupt to Herman J. Lombaert, May 7, 1852, ibid., 8; Haupt to Thomas Scott, May 7, 1852, ibid., 3; Haupt to Lombaert, June 17, 1852, ibid., 78; Haupt to Dr. Isaac Bauman, June 15, 1852, ibid., 72; Haupt to Lombaert, Aug. 16, 1852, ibid., 239.

22 Haupt to ——— Seely, June 15, 1852, ibid., 70; Haupt to William Delany, Apr. 6, 1852, ibid., 9.

23 Haupt to Bernard Lorenz, June 16, 1852, ibid., 74.

24 Haupt to Thomson, June 29, 1852, ibid., 108; Haupt to Thomson, June 21, 1852, ibid., 91.
runs his own risk of accidents and if allowances have sometimes been made as gratuities it does not follow that the right to demand compensation from the company will be recognized.”

The influence Haupt wielded through his authority to hire and fire employees often turned out to be a mixed blessing. Shippers, prominent investors, and company executives all had numerous friends and relatives anxious to get on the payroll. Usually, Haupt was able to plead that he had no positions available, but occasionally he was forced to hire the proffered individual. In cases where he found the new employee unfit for any position, he placed him as a freight agent in a small town where he could do little damage.

During the summer of 1850, however, Haupt found somebody who was decidedly not mediocre. He was Thomas A. Scott, a young freight clerk in a Columbia, Pennsylvania, warehouse who came highly recommended by a Harrisburg contractor. Haupt placed Scott as station agent at Hollidaysburg. The choice was fortunate for both men, as Hollidaysburg was the junction between the Allegheny Portage Railroad and the Pennsylvania, a potential trouble spot. Scott had worked as a toll collector on the state canals and this experience enabled him to manage the touchy job masterfully. He quickly rose through the company ranks, took Haupt’s old job of general superintendent in 1858, became vice-president in 1860, and president after Thomson’s death in 1874. In 1853 Scott hired as his secretary a seventeen-year-old boy named Andrew Carnegie. Fifty years later Carnegie recounted his first meeting with Haupt, describing him as the “first ‘great man’ I ever knew. I was seventeen when he passed over the inclined plane on a train on which I was fortunately [sic]. He took notice of me and I was a proud youth indeed.”

When not focusing his attention on personnel problems, Haupt grappled with the larger policy questions of establishing rates and

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26 Haupt to Lombaert, Sept. 24, 1852, *ibid.*, 272.
28 Andrew Carnegie to Haupt, Nov. 1, 1904, Susan Haupt Adamson Collection; Carnegie to Lewis M. Haupt, Dec. 27, 1905, Haupt Papers, Box 9.
through traffic arrangements. The problem of where to set rates was one of the few areas of disagreement between Thomson and Haupt. Thomson’s experience with the Georgia Railroad, which ran through sparsely settled agricultural country, led him to favor a high toll on a relatively low volume of freight. Haupt disagreed, and instituted a concentrated study of the road’s freight business. He analyzed the fixed and variable costs to the railroad and determined that the rates could be drastically lowered so that even bulk produce such as coal and timber might be carried at a profit for as low as six or seven mills per ton mile.29 He took the longer view of the prospects for the Pennsylvania and concluded that the “increase of trade, activity of business, and the extension of our great cities constitute objects of greater importance than large profits upon transportation.”30 When he went on to predict that implementation of his low rate policy would increase the volume of business to a million tons per year, he was “regarded as a fit candidate for a lunatic asylum.”31

Thomson and the board of directors could not be induced to lower rates below fifteen mills per ton mile despite the array of statistical evidence Haupt marshalled in support of his thesis. Nevertheless, he was one of the first men in railroad history to make a serious inquiry into the actual costs of transportation; within ten years the Pennsylvania and many other lines adopted his rate policies. In fact, the Pennsylvania was soon charging lower rates on bulk produce than he had dared suggest.32

While Haupt had little immediate impact on company rate policy he could affect the tolls charged to local customers whose business he felt deserved encouragement. Company policy dictated a uniform toll sheet to be met by all shippers. But in actual practice, Haupt often disregarded the sheet and operated under a flexible rate system attuned to local conditions. Whenever possible he lowered charges for larger shippers originating freight on the road, for those who

32 Chapman, “Haupt,” Chapter 1-4, 18; Haupt to Thomson, Dec. 9, 1861, Haupt Papers, Box 3.

When the statistics for 1851, the first full year of operations were compiled, Haupt decided that “the proper accommodations of the travelling public is of more consequence to us than the receipts for freights.”\footnote{Haupt to Lombaert, July 22, 1852, \textit{ibid.}, 155.} In that year gross income from the passenger service almost doubled that of freight while it cost only half as much to transport the public. Moreover, Haupt saw that only forty-two percent of the passenger traffic was moving westward and he set out to increase this business by obtaining more of the emigrant traffic between New York City and the Midwest.\footnote{Receipts from passengers and mails in 1851 were $686,309.77, while receipts from freight were only $353,255.72. \textit{5th Annual Report}, 95.} Every major east-west railroad, with the exception of the Pennsylvania, maintained ticket agents in New York City who advertised widely and engaged in cutthroat competition to persuade the emigrants to travel their routes. The railroads also allowed independent ticket agents a commission for each passenger they directed over their roads.\footnote{Haupt to Thomson, July 2, 1852, P.R.R. Letterbook, 139–141.}

Haupt went to New York in May and again in late June, 1852, to negotiate with the independent ticket agents to draw business away from the Buffalo and Albany route, “the principal stream of emigrant travel.” Not content to rely solely on independent agents, he took his own employee to New York and installed him in an office on the Camden and Amboy pier, where tickets could literally be sold to the emigrants before they got off the boat.\footnote{Haupt to J. Elliott, agent on Camden and Amboy pier, Aug. 3, 1852, \textit{ibid.}, 209–210.}

Since the Pennsylvania was not yet completed across the state and had no access to New York City, Haupt had to make arrangements with both the Camden and Amboy Railroad and the state works before through tickets could be sold. He carried on negotiations with the New Jersey road for almost three months before an accord
was reached whereby they agreed to accept a little over twenty per cent of a $5.25 through ticket between New York and Pittsburgh. After paying the agent's commission and the state for the use of the inclined planes and portions of its canal system, the Pennsylvania Railroad retained only $1.55 for carrying an emigrant 211 miles.\textsuperscript{38}

It came as no surprise to Haupt that his greatest problems in co-ordinating the three links came not from the Camden and Amboy, but from the Pennsylvania canal commissioners, a body of three men controlling the Main Line of the state works. These men correctly viewed the railroad as a competitor and not as a co-ordinate transport link, and were understandably hesitant to co-operate. Thus, Haupt bore the brunt of the commissioners' intransigence as he strove to operate his trains across a patchwork system that included state-owned links in the middle and at both ends.

One of his most serious operational problems in conducting emigrant transportation arose from the fact that the commissioners controlled the Pennsylvania's connection with Philadelphia. One of these lines, the Philadelphia and Columbia Railroad, was poorly constructed and maintained, its tracks were too close together, and the Elizabethtown tunnel was too narrow to permit normal size passenger cars to be run over the road. To maintain connections with the port city, Haupt was forced to build small cars and require his passengers to switch coaches when they reached the state road.\textsuperscript{39}

But even this makeshift arrangement was threatened in 1852 when the commissioners advertised for bids on the contract for carrying passengers over the Philadelphia and Columbia. Haupt bid for the Pennsylvania and let it be known that his offer was open to revision since he "was in the power of the Canal Board."\textsuperscript{40}

The commissioners, however, awarded the bid to a private firm, Bingham and Dock, and forbade Haupt to run his cars into Philadelphia. A hostile exchange of letters between Haupt and the canal


\textsuperscript{39} The passengers had to change to the smaller coaches by walking a plank one foot wide and eight feet long placed between the cars drawn up side by side. Wilson, II, 44-45.

\textsuperscript{40} Haupt to President and Directors of Pennsylvania Railroad, July 29, 1852, P.R.R. Letterbook, 187.
board that ensued in the newspaper was not ended until March, 1853, when the state legislature passed a special act permitting Haupt to run trains into the city again.\textsuperscript{41}

The inclined planes using stationary steam engines to winch railroad cars over the mountains on the Allegheny Portage Railroad presented problems of another kind for Haupt. Its superintendent refused to operate the planes after dark and threatened to detain the Pennsylvania's passengers at the foot of the planes overnight. The state superintendent suggested that Haupt reschedule his passenger trains to leave Philadelphia at 4:00 A.M. in order to be at the state works before dusk. Haupt replied that the suggestion was absurd and finally threatened to run his trains at the usual time and "dump the passengers at the termini . . . and if they would not take them, I would publish the facts and let the responsibility rest where it belonged."\textsuperscript{42} In the face of this warning, the superintendent reluctantly agreed to operate his planes at night. But the arrangement remained uneasy at best.

Haupt also clashed with the canal commissioners over the larger policy question of the tonnage tax. In 1846 the state had instituted a five mill per ton mile tax on all freight carried over twenty miles by the Pennsylvania. The levy was designed to protect the state's $40,000,000 investment in the Main Line and was collected only during the season when the canals were ice free. The legislature later reduced the tax to three mills per ton mile, but collected it all year.\textsuperscript{43}

The Pennsylvania did not oppose the tax until portions of the railroad were put into operation. Thomson started the fight in his annual message as chief engineer in 1851, by pointing out that freight traffic would be governed by the availability of alternative routes and that the tonnage tax put the Pennsylvania at a disadvantage. He warned that when through traffic was diverted elsewhere the tonnage tax would fall directly upon local shippers patronizing

\begin{itemize}
  \item \textsuperscript{42} Haupt, "The Pennsylvania," 23; Haupt to Capt. F. R. West, Superintendent of the Portage, July 10, 1852, P.R.R. Letterbook, 143.
  \item \textsuperscript{43} Haupt, "The Pennsylvania," 20; Burgess and Kennedy, 92; Chapman, "Haupt," Chapter I-4, 19.
\end{itemize}
the road, to the detriment of the whole state. The canal commis-
sioners vigorously opposed any reduction or elimination of the tax in
the press and in the state political circles.44

The following year, Haupt entered the fray with an open letter
published in the annual report. He did not exactly handle the
commissioners with delicacy. After making an exhaustive survey of
rates charged on railroads and canals in New York state, he found
that in all cases they were lower than comparable rates on the Main
Line. “The improvements in the art of transport, and especially in
economy and speed,” he concluded, “have left second-rate canals so
far behind that competition is not possible.”45 The best recourse for
the state, he thought, was to lift the restrictions on the Pennsylvania
Railroad and allow it to capture its share of trade in a free competi-
tive market. New York had done this when it eliminated the tax
on its railroads in 1851 and was now reaping the benefits.46 But
Haupt realized this was not politically expedient in Pennsylvania
and instead proposed a face-saving compromise: lower the tax and
apply it to all railroads in the state and allow the canal commission-
ers to use the proceeds to abandon unprofitable portions of the Main
Line and bring the remainder up to competitive standards.47 In
addition, he suggested the tax be put on a straight tonnage basis to
courage the railroads to lower their rates on bulk produce. In 1853,
as chief engineer of the Pennsylvania, he went further and predicted
if the tonnage tax was lifted the company could “carry heavy freight
at less than cost, and still realize a large return upon the aggregate
business.”48

44 Burgess and Kennedy, 93.
45 5th Annual Report, 85. He later stated that “the Erie Canal should be able to afford
transformation at half the expense of the Pennsylvania Canal simply by reason of its superior
dimensions . . .” in Herman Haupt, Will the Interests of Pennsylvania Be Advanced, or the
Revenue Increased By Continuing the Tonnage Tax Upon the Pennsylvania Railroad? (n.p.,
1854?), 8.
46 New York abolished its tax July 10, 1851. Copy of New York state law cited in 5th
Annual Report, 87; Lee Benson, Merchants, Farmers, & Railroads: Railroad Regulation and
47 5th Annual Report, 89; Haupt, Tonnage Tax, 29. A problem with Haupt’s proposal was
that certain unprofitable portions of the Main Line suddenly showed a profit when connected
to the Pennsylvania Railroad, as did the Allegheny Portage Railroad. Haupt to Thomson,
Aug. 12, 1852, P.R.R. Letterbook, 220–221.
48 7th Annual Report, 35.
Thomson and Haupt were supported by their board of directors, but the state legislature remained unconvinced. On one point only could they be induced to grant the railroad a concession. Possibly intrigued by Haupt's idea of making a profit by charging less than the cost of transport, they allowed the Pennsylvania to haul coal and timber free of the tax. The experiment was such a success that the state dropped the tax permanently on these items in 1855. But the levy remained on all other products until the Pennsylvania purchased the Main Line in 1857. In Haupt's three-year tenure as superintendent of transportation he never reached a permanent satisfactory arrangement with the canal commissioners. However, he did negotiate short-term agreements that enabled his road to use state facilities until it could construct its own, thereby establishing the basis for the growing strength of the Pennsylvania and sounding the death knell for the Main Line.

Although the Pennsylvania's board of directors may have presented a united front in the fight against the tonnage tax, on almost all other issues the members were divided. Conflict within the board arose principally over a confused chain of command between the board and the company's executive officers, and also from personality clashes. Although the divisions antedated Haupt's employment with the railroad, he became a central figure in their squabbles because his operating policies were an important factor in reducing the influence of the board in conducting the daily business of the road, while increasing the responsibilities of the company's executive department. The outcome of the discord was that in 1852 Thomson was elected to the board and also to the presidency of the road, marking the first time that a professional railroad manager occupied either position.

The original board had split with three members supporting president Merrick. After September 1, 1849, they transferred their

49 The basis for Haupt's rate theory was that the cost of transportation per unit would fall with a corresponding increase in volume. Burgess and Kennedy, 93n.

allegiance to his successor William C. Patterson. The remaining nine members of the board supported Thomson in opposition to the presidents. When the railroad was being readied for opening, the Merrick-Patterson clique wanted a superintendent friendly to their interests. When Thomson succeeded in obtaining the appointment for Haupt, the board heeded the warnings of the anti-Thomson faction that he was too young and inexperienced and charged Thomson with the responsibility for his actions.51 Until Thomson relinquished his supervision over Haupt on January 8, 1851, the Merrick-Patterson faction of the board tried to embarrass him by demonstrating that Haupt was unfit for his job.52

Using his position as chairman of the executive committee of the board of directors which supervised the daily business of the road, Patterson lost no time in harassing Haupt. On the official opening of the Lewistown section of the line, the president halted the excursion train without consulting the superintendent, and a head-on collision was averted only by Haupt’s timely expedition of a messenger locomotive to warn an oncoming engineer.53 Soon thereafter, the committee tried to discredit Haupt by ordering him to prepare a detailed report of the expected revenues on an unopened portion of the road. He submitted a bulky manuscript with pages of intricate calculations he knew nobody would read which prompted Patterson to remark that Haupt “was a man whose communications to the Board were a perfect diarrhea of words with a constipation of ideas.”54

In some cases the board members did not have to prod Haupt into an argument; he brought it to them. In 1850 the board issued a new toll sheet with rates lower than the cost of transport over certain portions of the line. He suspended it and brought this fact to their attention. When called before the board to explain, he enumerated in detail the overlooked cost factors, which Merrick

52 Thomson held the position of general superintendent as well as chief engineer until he relinquished the former to Haupt in January. Haupt’s old position of superintendent of transportation was then abolished. Haupt to Lewis M. Haupt, Feb.?, 1905, Haupt Papers, Box 19; William Bender Wilson, General Superintendents of the Pennsylvania Railroad Division, Pennsylvania Railroad Company (Philadelphia, 1900), 10.
waved away with the observation that it was "not a very serious loss for the Penna. Railroad, nothing to make a fuss about." To which Haupt retorted, "if the Board was willing to do any business for nothing and pay for the privilege I would always be found willing to carry out instructions after advising them of the facts."  

Haupt's relations with the board deteriorated further in February, 1851, when Patterson forbade him to correspond directly with the canal commissioners, ordering that all negotiations must be channeled through the board in Philadelphia. Haupt balked at the order, questioning whether Patterson had any authority at all over the general superintendent. Haupt considered that since he was appointed by the board, just as Patterson and Thomson, he was responsible only to the board for his official acts. If this was the case, he was willing to give "a ready compliance with any request" the president might make, but he "would not permit an acknowledgement of [his]... right to command."  

The board quickly cleared up the argument by passing a resolution putting the superintendent under the president's orders, but only after Haupt had formally refused to discontinue communications with the canal board. Patterson immediately charged him with insubordination and it was not until the two men met in Philadelphia where Haupt explained he had written his refusal before he had been informed of the resolution that the charges were dropped. But ill feelings remained.  

During the summer of 1851 Haupt was again bickering with the executive committee over freight rates on coal and iron and in some cases refused to implement the toll sheets released by the committee. Moreover, he opposed their standing policy of refusing to carry passengers and produce bound for Baltimore. He insisted that the road should accommodate these passengers and produce at the same rates charged between Pittsburgh and Philadelphia, adding that the policy of the company should be "to get all of this business that we

55 Ibid., 9.
57 Ibid., 12.
can conveniently accommodate, and charge upon it as much as it will bear; thus using it as a means to cheapen tolls to Philadelphia."\(^{59}\)

Conflict between the board and Haupt finally came to a head in October, 1851, when he was ordered to Philadelphia to face charges of insubordination, disrespect, and refusal to carry out instructions. When he arrived in the city he was at first denied permission to see the charges drawn up by a committee of the board.\(^{60}\) Only after meeting with various members friendly to Thomson was he finally given a copy of the accusations. He found that the bulk of them centered around a letter he had written to the station agent at Philadelphia which had been quoted with omissions and interpolations that gave it an entirely different meaning.\(^{61}\) He sent to Harrisburg for the original in his letterbook and explained the faulty quotations to the board members friendly to Thomson, asking that they be present at the next meeting where he planned to present his defense in person. He was afraid that a written explanation would be suppressed by Merrick, whom he was told had authored the charges.\(^{62}\)

At the next weekly meeting Haupt appeared and refuted the lesser accusations.\(^{63}\) Then he came to his letter in which he allegedly turned over his responsibility for the management of the Pennsylvania interests east of Harrisburg to the station agent in Philadelphia. Haupt read the quotation contained in the charges and then read the version in his letterbook in which he specifically admonished the station agent to confine his affairs to the business at his station.\(^{64}\) He then passed his letterbook around for all the directors to read while he continued with the logical argument that if he had relinquished control of the road’s affairs in Philadelphia he would not be giving orders to the station agent. Haupt concluded by stating that he knew Merrick to be the author of the charges, but bore no

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\(^{59}\) Haupt, *Reply to Stockholders*, 23n.


\(^{62}\) One of Haupt’s contentions with the board was that, after he assumed Thomson’s position of general superintendent, they withdrew the privilege formerly accorded to that officer of appearing before them. Haupt, *Reply to Stockholders*, 9.


\(^{64}\) Haupt to President and Directors of the Pennsylvania Railroad Company, Oct. 21, 1851, in *Evening Bulletin*, Jan. 3, 1852.
ill will toward him. He then asked for questions but there were none and he excused himself.65

He subsequently learned that after he left the board exploded into frenzied confusion. It was moved that his defense was more than adequate and that it be entered into the minutes as had been the charges. John Yarrow, a member of the committee which drew up the accusations, rose and asked Merrick why he had deceived the board. Merrick replied that if there were any omissions they were the act of inadvertence, to which Yarrow replied: "Mr. Merrick! Mr. Merrick! If I catch a thief with his hand in my pocket it is too late for him to say that he put it there by mistake."66 The meeting was then adjourned and action delayed on both motions until the next session.

Merrick was still determined to oust Haupt at the next meeting. He presented a point by point refutation of Haupt's defense to the board, declaring it to be inadequate and called for a ballot. When he was defeated by a single vote, he offered his own resignation declaring that he had been "abandoned by a part of the Committee, whose organ I had been, and not sustained by the Board, which had adopted the report by an overwhelming majority." Patterson hinted that he and two others might also resign and asked that no action be taken to consider Merrick's resignation until the following meeting.67

The day before the next meeting, Patterson, Merrick, and two other board members met secretly and determined to present their resignations if Haupt was retained. To bring additional pressure to bear on the board they also drew up a statement showing that the railroad had $500,000 worth of notes coming due within thirty days and explaining the difficulty a truncated board would have in raising the money.68

66 Haupt, "The Pennsylvania," 13; Haupt, "Thomson," 4. Merrick had no consistent answer to the charge that he omitted portions of Haupt's letter. Initially he held that the omitted words were unimportant. Merrick to Committee to whom was referred Mr. Haupt's reply, n.d. (prior to Nov. 4, 1851), in Evening Bulletin, Jan. 3, 1852. Later he denied that any words had been omitted or altered. Merrick to Editors, Jan. 1, 1852, ibid., Jan. 3, 1852.
The tactic worked. Under this threat, the board passed a resolution by a majority of one asking for Haupt’s resignation to take effect December 31, 1851. After conferring with Thomson, Haupt asked for and received a copy of the board’s resolution, and handed in his resignation.

When the board met on November 26 to act upon Haupt’s letter it had investigated the debts of the company and found that they were not as bad as Merrick and Patterson had pictured. No longer faced with an either-or situation, the board reversed itself and passed a resolution asking Haupt to withdraw his resignation. Haupt agreed, but stipulated he would stay for only as long as it took to find a suitable replacement. He felt his usefulness in forming company policy was at an end.

Haupt’s letter of resignation had appeared in the press, and a number of prominent stockholders had asked for a public explanation. He replied by publishing the board’s resolution asking for his resignation but refrained from giving the particulars of the board fight. The resolution drew a great deal of criticism against Merrick in the press, and many stockholders favored running an opposition ticket in the approaching annual election. They saw that a change in the board was necessary to restore confidence in the body and that the dissension went far beyond the dismissal of Haupt. His resignation was merely a symbol of the conflict and not its basic cause.

The most reasonable choice to head a ticket for the board of directors was Thomson, but the problem was to convince him to run. A group of board members and stockholders began holding secret nightly meetings to plan their strategy. Haupt was among the plotters and was chosen to approach Thomson with their plans and convince him to enter the race. Haupt and a member of the board, Christian E. Spangler, conferred with Thomson at the home of a mutual friend where they spent most of a night wearing down his resistance. Thomson was hesitant to enter, fearing that if he lost

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70 Unidentified newspaper clipping, Jan. 3, 1852, scrapbook, 44; Haupt to President and Directors of the Pennsylvania Railroad, Nov. 25, 1851, unidentified newspaper clipping, n.d., ibid., 12.

he would have to resign as chief engineer. But Haupt and Spangler finally convinced him to run with the argument that the supporters of the Merrick-Patterson faction were numerically few and composed of the "silk stocking aristocracy," while Thomson could count on the support of the "solid business men." By early morning Thomson finally gave "a reluctant assent to the use of his name."

The opposition ticket was soon announced in the press and there ensued a campaign that Haupt later characterized as one "which agitated the City of Philadelphia as much as a presidential election." Bitterness increased when Merrick released the details of the board fight to the press. The directors had voted to refrain from making the papers public, but Merrick ignored the resolution and issued them under his own name. They appeared, along with a rebuttal by Haupt, in the January 3, 1852, edition of the *Evening Bulletin*.

The personal vindictiveness of the campaign tended to obscure the only basic policy issue at stake—the financing of further construction of the road. Until the end of 1851 all money had been raised through the sale of stock. Thomson feared that this source would soon prove insufficient and wanted to resort to bond issues to complete the line. Unfortunately the question never received a fair hearing.

On the eve of the balloting, Haupt found himself in the vortex of pre-election maneuvering. James Magee, a member of the board and related to Haupt's assistant superintendent through marriage, wanted his relative to have the superintendent's job. Magee approached Haupt and offered him a position managing his industrial holdings along the railroad if Haupt would vacate his position in favor of Lombaert. When Haupt refused, Magee and several other directors called on Thomson and persuaded him that the ticket was in trouble with Haupt as a known supporter. Thomson, ever cau-

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73 Haupt, "Thomson," 5.
74 Ibid. At one point the Thomson forces resorted to locking the commissioners from a Philadelphia suburb in an empty apartment to save their votes. Municipalities could vote in the election if they owned stock in the road. Haupt, "The Pennsylvania," 17.
75 Merrick's publication of the papers drew an angry denunciation from six members of the board who accused him "of impugning in the public newspapers the motives of a majority of the Board." Unidentified newspaper clipping, n.d., scrapbook, 44.
76 Burgess and Kennedy, 59.
tious, called on Haupt and explained his fears. The latter realized who was behind the move, but told Thomson that if he thought it would help the ticket, he might publish any notice of his resignation he wished. The following day, February 2, the papers carried the news that Haupt would not "be a candidate for reelection."  

That same morning the stockholders met and overwhelmingly elected the Thomson ticket. Among the reasons for Thomson’s large margin of victory was the stockholders’ erroneous belief “that $5,000 a year, the salary of the Chief Engineer, could be saved by electing him president, as he could perform the duties of both offices.”  

As soon as the ballots were tallied Thomson again called on Haupt and asked him to withdraw his resignation. Thomson produced a copy of the newspaper article and explained that he had carefully worded it to read that Haupt would not run for re-election because the general superintendent was a permanent position and required no election. Therefore, the notice was meaningless. But after resigning publicly twice within three months, Haupt felt he was "bound in honor" to sever relations with the company. He became determined to leave at the first opportunity.  

His chance came seven months later when he was offered a job as chief engineer of the Southern Railroad of Mississippi. Haupt left in September, 1852, and with headquarters at Vicksburg located the route for the line to the Alabama border. In late February, 1853, his task completed, he returned to Philadelphia although he had no immediate prospects for another job. But he did not remain unemployed long. Edward Miller, who had replaced Thomson as chief engineer on the Pennsylvania when the latter was elected president, resigned and Haupt was elected by a unanimous vote to the post by the board of directors effective April 20, 1853. The board authorized him an annual salary of $4,000 a year and instructed

80 Jackson, Miss., Flag of the Union, Oct. 15, 1852; Herman Haupt, Report of the Final Location of the Southern Railroad From Brandon, Mississippi to the Alabama Line, in the Direction of Charleston and Savannah (Philadelphia, 1853), 9; unidentified newspaper clipping, n.d., scrapbook, 44.  
81 Chapman, "Haupt," Chapter I-4, 15a.
him to complete the road between Altoona and Pittsburgh, and to start double-tracking the entire main line.\textsuperscript{82}

The completion of the western division was of the highest priority, since when finished it would bypass the Allegheny Portage Railroad. Unfortunately, this division traversed some of the most tortuous landscape in Pennsylvania and progress was slow and costly. The single greatest impediment was the 3,612-foot Allegheny Mountain tunnel which gave Haupt a taste of some engineering problems.\textsuperscript{83}

The bore was well underway when Haupt became chief engineer and assumed responsibility for the work. It was being dug by hand from both ends and from three shafts sunk to grade. The workers were constantly plagued by water surging into the bore and bombarded by rubble falling from the unstable roof. Haupt solved the first problem by installing huge steam pumps capable of staying ahead of the incoming water, but the roof posed a more difficult task. The tunnel passed through a combination of coal, fireclay, and shale, which swelled, cracked and fell when exposed to air, necessitating the complete arching of the bore with brick. But he postponed the arching and hurried the tunnel, shored up by heavy timbers, to completion and opened the entire western division on February 15, 1854.\textsuperscript{84} It took another year to finish the arching of the tunnel and Haupt admitted in his annual report for 1854 that “this work has progressed slowly, and it was attended with many interruptions from the passage of trains, which added considerably to the cost.” He contended however, that the extra expense was justified because it enabled the Pennsylvania to utilize its completed line a year sooner than otherwise possible.\textsuperscript{85}

When not occupied by the tunnel, Haupt pushed the double-tracking of the main line. Unfortunately, just as he started the work the European money markets became unsettled by the Crimean War. Sales of the Pennsylvania’s bonds on the London market

\textsuperscript{82} Ibid.; Haupt to Henry Cartwright, May 28, 1860, Haupt Papers, Box 2.

\textsuperscript{83} Wilson, I, 159.

\textsuperscript{84} 7th Annual Report, 28; Henry S. Drinker, Tunneling, Explosive Compounds and Rock Drills, 3rd ed. (New York, 1888), 149.

slumped and Haupt was forced to suspend almost all new construction work. However, even with the money shortage, he had completed almost fifty-five per cent of the double-tracking by January, 1856.86

Once possessed of a finished railroad, the officers of the Pennsylvania became increasingly concerned with securing connections into the Midwest. This interest was not new, for as far back as 1847 they considered purchasing control of the lines between Pittsburgh and Cincinnati. Again in 1851, they became interested in western connections, but by 1853 no action had been taken to secure these links.87

One of the possible extensions under observation was the Ohio and Indiana Railroad connecting Crestline, Ohio, and Fort Wayne, Indiana, with branches planned to Burlington, Iowa, and Chicago.88 The road was in financial trouble at the end of 1853 and Thomson instructed Haupt to attend the meeting of its board of directors in April, 1854, and report on “the pecuniary liabilities of their company, the cause of their financial difficulties, and the position of affairs generally.”89

Haupt attended the meeting and recommended to Thomson that the Pennsylvania aid the Ohio and Indiana to the extent of $737,701 to ensure its completion, particularly the Chicago branch. Haupt was struck by the future importance of that growing city as a great rail hub. In his report he stressed the desirability of a rail link between Philadelphia and Chicago because “manifest destiny appears to have decreed that Chicago shall become the greatest inland city of the American continent.”90 If the connection was made, Haupt was certain that the Pennsylvania would draw some of the lakes trade away from the Erie Canal and New York City.91

87 Burgess and Kennedy, 74–75; 8th Annual Report, 20.
88 Burgess and Kennedy, 77–78.
89 Report of H. Haupt, Chief Engineer of the Pennsylvania Rail Road Company with a communication from the President of the Ohio & Pennsylvania Rail Road Company on the expediency of aiding the Ohio and Indiana and the Fort Wayne and Chicago Rail Road Companies to Complete their Roads (Philadelphia, 1854), 15.
90 Ibid., 34.
91 Ibid., 21–34.
Unfortunately, his board of directors did not heed the wisdom of his advice. Although the Pennsylvania subscribed $300,000 to the Ohio and Indiana, it was not sufficient to keep the line solvent. The road later merged with two others to form the Pittsburgh, Fort Wayne & Chicago Railroad, in which the Pennsylvania subsequently invested $2,000,000 to keep it from falling into the hands of the rival Baltimore and Ohio.92

With the railroad substantially complete in 1854, Haupt's duties became regularized and less challenging. He always had a greater penchant for constructing, organizing, and innovating than for managing a going concern. Also, he had large outside business interests in real estate, lumber, and coal companies. In that year he undertook an extensive examination of the problem of low water in the Ohio River. Armed with the results of his inquiry, he formed a corporation to build improvements in the river with the help of the federal and state governments.93 With his plans for the Ohio maturing, he took the first step toward retirement in April, 1855, by writing his board "declining any compensation for services, except when actually employed." But he remained as de facto chief engineer, devoting about one-third of his time to duties on the road.94

By the end of 1855 Haupt could well afford to dispense with his salary for he had an income of between $25,000 and $30,000 a year, almost 100 times that of the average American industrial worker, making him a prominent financial figure in Philadelphia.95 In recognition of his standing, the city's Select and Common Councils on November 23, 1855, elected him to a seat on the board of directors of the Pennsylvania to represent the city. He was not unopposed as his old antagonist, Patterson, invited the Councils to a reception at his home and started a movement to elect Merrick to the seat. Patterson was unsuccessful, however, and Haupt, the regular candi-

93 Herman Haupt, A Consideration of the Plans Proposed for the Improvement of the Ohio River (Philadelphia, 1855), 50-54; 9th Annual Report, 23.
94 Ibid., 22.
95 Haupt to Cartwright, May 28, 1860, Haupt Papers, Box 2. Wage statistics prior to the Civil War are sketchy, but Clarence D. Long, Wages and Earnings in the United States 1860-1890 (Princeton, 1960), 41-42, has estimated from census returns that the average annual wage in 1860 received by workers in manufacturing industries was $297.
date, won by a wide margin. When he took his seat March 3, 1856, he declined any compensation for his services as part-time chief engineer, although he nominally continued as head of that department. Actually, he devoted very little time to the railroad in 1856, for by then he was involved in the greatest challenge of his career, the Hoosac Tunnel in Massachusetts. In face of the technical and financial complexities of the tunnel, which required increasing amounts of his time, he resigned from the board of directors on December 24, 1856.

Haupt’s legacy to the Pennsylvania Railroad was a completed main line, a clearly defined chain of command, and tested operational precedents. His successors, using this firm foundation, built the Pennsylvania into one of the major transportation systems of the country.

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96 Three directors on the board represented the shares held by the city of Philadelphia. Burgess and Kennedy, 786; Haupt, “The Pennsylvania,” 19.
97 9th Annual Report, 22.
98 Burgess and Kennedy, 786.