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Gary John Previts

William D. Samson

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Gary John Previts
CASE WESTERN RESERVE UNIVERSITY
and
William D. Samson
UNIVERSITY OF ALABAMA

EXPLORING THE CONTENTS OF THE BALTIMORE AND OHIO RAILROAD ANNUAL REPORTS: 1827-1856

Abstract: In 1995, a nearly complete collection of the annual reports of the earliest interstate and common carrier railroad in the U. S., the Baltimore and Ohio (B&O), was rediscovered in the archival collection at the Bruno Library of the University of Alabama. Dating from the company's inception in 1827 to its acquisition by the Chessie System in 1962, the reports present a unique opportunity for the exploration, study, and analysis of early U.S. corporate disclosure practice. This paper represents a study of the annual report information made publicly available by one of America's first railroads, and one of the first modern U.S. corporations.

In this paper, early annual reports of the B&O which detail its formation, construction, and operation are catalogued as to content and evaluated. Mandated in the corporate charter, the annual "statement of affairs" presented by the management and directors to stockholders is studied as a process and as a product that instigated the institutional corporate practice recognized today as "annual reporting." Using a single company methodology for assessment of reporting follows a pattern developed by Claire [1945] in his analysis of U.S. Steel and utilized by other researchers. This study demonstrates the use of archival information to improve understanding about the origins and contents of early annual reports and, therein, related disclosure forms.

INTRODUCTION

This paper is an original, descriptive, archival study which explores the development of reporting and disclosure practices in a dynamic economic and technological context.

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The earliest annual reports of the Baltimore and Ohio Railroad (B&O) are catalogued and analyzed as to their content. These reports, from 1827 to 1856, cover the years of formation, construction, and early operations of a leading early American corporation. From the analysis of management's disclosure to outside investors, the evolution in a corporation's reporting is traced. The B&O's 1827 charter which mandated an annual "statement of affairs" be published represents a major historical root of today's practice of corporate annual reports.

HISTORICAL BACKGROUND

Aware of the need for transportation networks to move the new nation westward, George Washington was among the first to propose a national road that would stretch from the East Coast to a connecting point in the West. The high expenditure, in terms of time and money, of moving goods overland was a constraint to expansion and settlement. Existing transport was slow and expensive. Freight charges raised the cost of goods more than sixfold of the value of the merchandise being carried even relatively short distances overland. Washington died before the act passed Congress in 1806 to create the westward road. As such, the National Road was the first federally funded interstate highway, but in an age when five miles per hour was near to top speed [Snook, 1998, p. 1]. Elsewhere, corporations were chartered by states to build canals and toll roads as part of the transportation infrastructure to afford access to inland destinations. Many of these enterprises were doomed to failure when costs of construction greatly exceeded the limited capital. Ultimately, states took over some of these projects. The National Road (or Great National Pike), begun in 1815, extended due west 800 miles, connecting the eastern seaboard to Vandalia, Illinois near a river port and the portal of St. Louis. Building this westward road took 25 years, a generation of effort to reach the Mississippi from the East Coast starting point.

By the time of its completion in 1840, this "road" had already begun to lose some of its significance as "rail roads" gained in importance for the migration west. Except for the National Road, waterways and canal systems had become the principal means of westward movement of goods and people. Linked to the National Road by the Cumberland Road, Baltimore was seen as a prime port for western commerce. But the opening of the Erie Canal on October 26, 1825 threatened Baltimore's commercial position with its cheaper waterborne

transportation linking the port of New York with the west via the Hudson River and Great Lakes. The Erie's success encouraged more canal efforts; the most direct threat to Baltimore was the Chesapeake and Ohio Canal, which began by following the Potomac and which would have made Washington, D.C. a seaport with the potential to supplant Baltimore. The merchants of Baltimore sought alternative transport technology to preserve Baltimore's preeminence as the country's third largest city, placing their support behind the potential of horse-drawn carts and cars moved along a fixed "rail road," leading west to the Ohio River. In this way, the B&O was proposed, promoted, and supported. Horse-drawn vehicles were the expected means of motive power; the steam locomotive would soon, however, transform and assure the B&O's future role.

The evolution of this transportation company, founded in Baltimore, and its progression into a major corporate organization have been studied with particular reference to its innovations in the technology of transportation. However, prior research has not undertaken an extensive assessment of the annual financial reporting archives of the B&O. This paper initiates that potentially significant dimension—the archival study of an early 19th century corporation's published annual reports prepared by the management and board of directors as a communication vehicle to a variety of constituent investor groups, the government, and the public [Fleischman and Tyson, 1998].

The B&O was a major innovator in American railway transportation. Not only a technology leader, the company created an organizational structure and developed new capital sources as well as refined disclosure and reporting processes. Its engineers experimented with various sources of power (horse, wind [sail], and steam); with configurations of wheels and tracks; and with the design of train engines, carriages, and freight cars. The company developed telegraphic communication systems and accomplished unprecedented engineering feats, including bridge and tunnel construction at a time when civil engineering was just developing as a profession to meet the challenge of railroad building. Management created an organizational structure, internal controls, relationships with political entities, and financing sources. These innovations, often publicized in its annual reports, provided examples for other railroads and led to the company's being identified as "B&O University" by aspiring careerists [Hungerford, 1928, Vol. 1, p. 112].

The B&O annual reports reflect the company's experimentation, evolution, and development in the process of disclosure

to capital providers, potential investors, and the public. As a pioneer corporate entity, the B&O's disclosure practices influenced other railroads, shaping expectations and methods to be employed by future industrial corporations. Previous research suggests the B&O was an important source of influence [Boockholdt, 1978; Giroux, 1997; Pollens, 1956; Vangermeersch, 1979]. The importance of company records in developing an understanding of 19th century enterprises has been studied by Edwards [1984] and others. The B&O became the first interstate common carrier of passengers and cargo and was a predecessor to other major trunk-line railroads, such as the Mobile & Ohio (1847), Pennsylvania (1847), Illinois Central (1851), Delaware & Lackawanna (1856), and the New York Central (1857). This research adapts a methodology employed in 1945 by Claire to examine a single major company's changes in content, quantity, type, and quality of disclosure over an extended 30-year period [Claire, 1945]. The antebellum operations of the B&O, during the period of formation and development when the corporation sought to meet its objective of bridging the Alleghenies to connect with the Ohio, are studied herein as a distinct period, prior to the subsequent events during the American Civil War which severely impacted the B&O's operations and facilities. Mileages provided in Table 1 reflect the progress in building the railroad over the Allegheny Mountains during this period.

TABLE 1
B&O Construction Progress Mileage Timetable

<u>Place Reached</u>	<u>Date</u>	<u>Miles from Baltimore</u>
Frederick, MD	1831	61
Harpers Ferry, VA (WV)	1834	83
Washington, DC	1835	35
Cumberland, MD	1842	178
Piedmont, MD	1851	198
Grafton, VA (WV)	1852	265
Wheeling, VA (WV)	1853	379
Parkersburg, VA (WV)	1857	344

This paper is organized as follows. After this introductory section, a rationale for the B&O's corporate disclosure is addressed. This discussion relates to the examination of the B&O's corporate charter. Next, we consider use of a single company in a longitudinal study and the methodology employed. The contents of the B&O's annual reports from 1827 to 1856 are then described. Next, the developments in reporting are put

into context with the life-cycle development of the company. The paper then concludes with an assessment of the impact which the B&O had on corporate reporting practices of the era.

In the content analysis section, which represents the focus of the paper, a comparative measure of the extent of disclosure is developed to identify changes in the amount and type of information. Given the original and archival scope of this study, hypotheses are not specified. However, potential reasons for changes in the types of items included in the reports are explored to provide a hypothetical framework for future work.

RATIONALE FOR DISCLOSURE

From its inception in 1827, the B&O met the terms specified in its Maryland corporate charter that stockholders be issued an annual "Statement of Affairs." No mandates or standards were in place to provide specification on how to fulfill this obligation. The corporate charter, as a social contract, implied the duties of management and flowed from the powers that the state and the public bestowed on the B&O as a corporation. This meant endowing the company with an unlimited legal life and capital sourcing capacities that would lead to the popular development of corporate-based commerce [Nash, 1964].

As the first annual report states, it was "to the stockholders of the Baltimore and Ohio Railroad Company." Shareholders who provided the capital for the B&O were not managers of the enterprise. This separation is now common in corporate America as a modern business characteristic. Subsequently, a class of professional, salaried managers developed. This professional class had the expertise and skills needed to make the railroad efficient. Annual reporting became the communication medium for management to convey to the individual owners and public officials alike the performance, plans, and problems of the B&O. In the operation of this collective corporate property, the managers were accountable to the community of investors and, as such, were the stewards of the community's resources. The charter requirement for annual disclosure was a fundamental contract to discharge this agency and stewardship role. The importance of the B&O having ready access to capital to support its expansion westward meant it was also in its economic self-interest that dissemination be extensive, to reduce concerns about "information risks" by capital providers [Michael, 1996]. A willingness to be forthcoming was economi-

cally rational in order to minimize the cost of capital and to instill confidence in management actions. How extensively and rapidly these practices would develop to include details useful to proprietary capitalists and government officials who underwrote the venture is one aspect which is important to this study.

THE CORPORATE CHARTER: A PUBLIC-PRIVATE ENTITY

The B&O was a private, “for profit” business, but also a public entity reliant upon a state charter, public capital, and an implied governmental relationship. In this way, it was quasi-public. First, the B&O’s formation was viewed as a “community enterprise” since almost every citizen of Baltimore purchased a share of stock [Jacobs, 1995, p. 13]. Second, preserving and enhancing the City of Baltimore’s commercial position via trade with the west was the reason for the B&O’s existence and the reason that people invested in its stock. Nowhere were profits or dividends mentioned as a reason for forming the company. At the B&O’s dedication ceremony, a scroll was placed in a hole drilled inside the foundation stone. It read:

The stone is deposited in commemoration of the commencement of the Baltimore and Ohio Railroad, a work of deep and vital interest to the American people. Its accomplishments will confer the most important benefits upon this nation by facilitating its commerce, diffusing and extending its social intercourse, and perpetuating the happy union of these confederated states [Jacobs, 1995, p. 5].

In the early 1800s, corporate forms of business were not commonplace; proprietary and partnership forms were the norm. Each corporate charter required an act of a state legislature. The B&O was chartered in Maryland (February 18, 1827), Virginia (March 8, 1827), and Pennsylvania (February 22, 1828). It would be at least a half-century before John D. Rockefeller successfully employed the “trust” as a device to manage multiple-state chartered enterprises to achieve a single national corporate form. From the outset, many of the political and economic challenges faced by the B&O would relate to the interstate character of its developing business and the relationships with each state in which it was chartered to operate as a corporation.

The public nature of the B&O was also related to its economic objective—to increase the well-being and wealth of the

City of Baltimore and to secure its place on the seaboard as a leading port city for trade and commerce to the west. New York (with its Hudson River and Erie Canal), Boston, Philadelphia, Richmond, Charleston, Savannah, Mobile, and New Orleans were all rivals for the western trade, and each had or sought connections with the Great Lakes and the Ohio and Mississippi Rivers.

The B&O's Maryland charter allocated half of the authorized shares to governmental entities. It specified that the company was to start with \$3,000,000 of capital (30,000 shares of \$100 stock). The City of Baltimore initially underwrote 5,000 shares and the State of Maryland 10,000 shares. Table 2 compares the government ownership to individual ownership at the B&O's inception and a quarter-century later when the Ohio had been reached.

TABLE 2
B&O Stock Ownership
1827 and 1853

1827			
	<u># of Shares</u>	<u>% of Shares</u>	<u>\$ of Capital*</u>
State of Maryland	10,000	33%	\$1,000,000
City of Baltimore	5,000	17	500,000
Individuals	15,000	50	1,500,000
Total	<u>30,000</u>	<u>100%</u>	<u>\$3,000,000</u>

*Note: These shares were the numbers subscribed. The charter required investors to pay \$1 upon subscription and the remainder in annual installments of an amount not to exceed one-third the unpaid amount.

1853			
	<u># of Shares</u>	<u>% of Shares</u>	<u>\$ of Capital*</u>
<u>Common Stock</u>			
State of Maryland	6,855	5.2%	\$685,500
City of Baltimore	42,582	32.5	4,258,200
City of Wheeling	5,000	3.8	500,000
Individuals	46,478	35.4	4,647,800
<u>Script</u> (not funded)			
[Subscribed] Stock	274.02	.2	27,402
<u>Preferred Stock</u> —"held by the State of Maryland on which a dividend in perpetuity of 6 per cent per annum (not more, not less) out of profits of the Road, is guaranteed by the Company to the State."	30,000	22.9	3,000,000
Total	<u>131,189.02</u>	<u>100 %</u>	<u>\$13,118,902</u>

The Maryland legislature also retained rate-setting authority as part of the exchange for the unique power granted to the railroad. Being major suppliers of capital, the State of Maryland and the City of Baltimore had a “proprietary” as well as a “political” reason to take all the necessary steps to see that the B&O succeeded. Another public-private economic element was the charter provision whereby Maryland granted the B&O a tax exemption. These processes, including “election” of the board of directors, the annual meeting, and the stewardship aspect of required annual disclosure of company business, were also consistent with a public participative style of relationship between government and its citizens.

Another public dimension of the B&O involved the technical services it received from the federal government, which supplied topography specialists from the U.S. Army to survey and lay out the railroad’s route. The federal government did not provide direct financial support, however, and declined to invest or lend the B&O money when the company was in financial difficulty. Congressional support for land-grant funding of railroad development would grow later in the century when southern, western, and agricultural groups influenced legislation.

Private landowners also participated in the B&O’s development. The right of way for the railroad was obtained free of charge from those willing to accept the potential appreciated value of their surrounding tracts as part of the economic payment.

The advent of the B&O as an unprecedented element in the economic development of a city, state, region, and nation presented an equally unprecedented need for information about its operations and for performance measurement techniques to guide both management and those with capital at risk. This archival study seeks to achieve a better understanding of the content and context addressed by this set of initial reports.

SINGLE-COMPANY CONTENT ANALYSIS: A MODEL FOR MEASURING PROGRESS

Writing in 1945, Claire [1945, p. 40] observed:

One approach to the measurement of reporting progress would be to survey the changes in the annual reporting style of a single company, especially one which has a long history in the field of presenting annual reports, has shown an interest in presenting them

in a rather full and complete manner, and has displayed a desire to increase their effectiveness and attractiveness.

He continued by identifying the U. S. Steel Corporation, the first billion-dollar American public company, as a 20th century corporation possessing the requisite qualities for such a survey to measure progress in business reporting. Other researchers such as Levenstein [1992], McKinsty [1996], Napier [1995], Nikitin [1990], Reed [1989], Spraakman [1999], Stone [1984], Vollmers [1993, 1997, 1999], and Williams [1999] have also employed a single or limited company methodology to examine changes over time for a variety of companies and a variety of accounting issues. Employing Claire's single-company model to the reports of the B&O to determine the changes in corporate disclosure and reporting for the first half of the 19th century seems as appropriate as using U.S. Steel for a comparable period of the 20th. The unique attributes of each company in its respective period and industry, as well as the duration of each company's importance in its respective industry and the economy as a whole, are comparable. As the initial step in a process of employing a single company as a surrogate measure for early 19th century disclosure development, the published company reports stipulated under the B&O corporate charter are measured in terms of fundamental attributes such as length, size, and content of said reports.

Table 3, "Reports to Stockholders," begins the study, providing a display of the length in pages of each annual report and the number of exhibits and tables in each. As shown in these data, the reports increased in pages and tables over the 30-year period. Several of the very large reports in the earliest years are identified with special management studies presented to the board of directors, which in turn were included within the annual report. Table 3 suggests that a relationship existed between the annual report's length and the leader of the management, in this case the president. A change in the person holding this office is also consistent with noticeable changes in the size, format, and contents of the report. For example, Louis McLane's appointment in the mid-1830s is reflected by a reduction in the annual report, including fewer special reports by officers to the board. This initial reduction in size was short-lived, however, because under McLane's administration the reports were expanded to include discussions of operations by both the chief of transportation and the chief engineer. These

discussions became standard content for the B&O and for other railroads as well, such as the Louisville & Nashville Railroad (1861) and the Illinois Central Railroad (1856).

TABLE 3
Reports to Stockholders*

<u>Year</u>	<u>Report Number</u>	<u>President</u>	<u>Page Length</u>	<u>Number of Exhibits and Tables</u>
1827	1	Thomas	5	0*
1828	2	Thomas	55	1
1829	3	Thomas	105	12
1830	4	Thomas	153	15
1831	5	Thomas	135	19
1832	6	Thomas	136	19
1833	7	Thomas	193	16
1834	8	Thomas	57	13
1835	9	Thomas	108	33
1836	10	Patterson**	92	15
1837	11	McLane	29	2
1838	12	McLane	21	4
1839	13	McLane	16	3
1840	14	McLane	17	4
1841	15	McLane	24	4
1842	16	McLane	30	6
1843	17	McLane	18	6
1844	18	McLane	75	13
1845	19	Jones***	28	6
1846	20	McLane	30	6
1847	21	McLane	68	13
1848	22	McLane	55	17
1849	23	Swann	58	18
1850	24	Swann	63	17
1851	25	Swann	68	17
1852	26	Swann	96	17
1853	27	Harrison	58	23
1854	28	Harrison	95	41
1855	29	Brooks	91	33
1856	30	Brooks	115	33
1857	31	Brooks	155	39
1858	32	Brooks	159	41

* refers to Statement of Affairs

** Joseph W. Patterson served as "temporary" president.

*** Jones served as "interim" president and signed the 1845 report while McLane was in England raising capital and studying British railways.

McLane's predecessor, Philip Thomas, initiated the publishing of manager reports in the second (1828) annual report. McLane, however, made it a continuous practice to provide

such reports. These first two permanent presidents of the B&O were “money men” with skills and understanding to raise the needed capital. Thomas was a banker, president of the Mechanics Bank of Baltimore, when he organized the B&O. McLane was the Secretary of the U.S. Treasury Department prior to being elected to the presidency of the B&O. It probably was not a coincidence that the first two presidents had banking and finance backgrounds, given that the major role of both was raising capital for the B&O. Indeed, McLane made two lengthy trips to England to raise money to finance construction during this term. Their knowledge of banking and financing may have made Thomas and McLane sensitive to the investors’ information needs. This may have set the B&O’s disclosure practice firmly in place for subsequent presidents who had skills other than finance.

Documentation marked Table 4 (A), (B), and (C) represents a detailed and comprehensive spreadsheet basis for a “Content Analysis of Reports.” These exhibits identify the categories/types of information disclosed to stockholders in three phases of the 30-year period of study. Table 4 (A) relates to the period of initial construction (1827-1831) and the first year of steam locomotive operations (1832). These reports are focused on disclosing information about the “development” of the company’s capacity. Table 4 (B) identifies a stage of report evolution that focuses on initial operating, revenue, and cost information from 1833 to 1836, at a time when the main road was open as far as Harper’s Ferry and the branch road to Washington, D.C. had been completed. Table 4 (C) chronologically relates the expansion of disclosure employed in the annual report as the company matured into full-scale and continuous operation (1837-1856). These exhibits identify a particular table or report information and its timing. More often than not, once a type of information had been disclosed, it was continued, with the particulars of the report becoming ever more detailed and elaborate with the passage of time.

From Table 4, the growth in the volume of detail disclosed can be appreciated; also, the scope of activity described by the reporting can be traced across time. A prominent feature identified is the multiple-column, multiple-row, tabular format utilized frequently in these reports. This level of detail and categorization reflects the emphasis that B&O management placed on such information for decision making and control. For the first time, a business enterprise needed, collected, and used such accounting and statistical data to manage its enterprise and

TABLE 4 (A)
Content Analysis of B&O Annual Reports
Years 1827-1832: Experimental Years
Table Contents and Size

<u>1828</u>	<u>Columns x Rows</u>
Construction Report	7 x 22
<u>1829</u>	
Alternative Route Comparison	3 x 4
Aggregate Construction Cost	14
Budgeted Cost for Next Year	16
Subdivision Location	3 x 32
Comparative Statistics on Alternative Routes	8 x 10
Courses and Distances	3 x 25
Cost of Construction—Incurred and Estimated—Division I	11 x 27
Cost of Construction—Incurred and Estimated—Division II	11 x 27
Materials Contracted	8 x 15
Construction Contracts	8 x 135
Synopsis of Grading Completed	7 x 64
Synopsis of Masonry Completed	6 x 44
<u>1830</u>	
Budgeted Cost for Next Year	24
Cost Estimate of per Mile of Track	18
Cost Estimate of Iron Rail per Mile	12
Cost Estimate of Second Section of Track	15
Cost of Track Estimation	13
Cost of Contracted Work—per Mile	11
Cost of Masonry	4
Station to Station Distances and Grades—Division I	3 x 12
Station to Station Distances and Grades—Division II	3 x 34
Quantities of Excavation and Embankment	6 x 38
Amounts Expended	5
Bridge Expenditures	9
Estimated Cost of Construction	66
Canal—Railway Cost Assessment	2 x 21
Canal—Railway Cost Alternatives	40
<u>1831</u>	
Quantities of Excavation and Embankment	6 x 31
Estimated and Actual Cost to Finish Sections	33
Cost of First 13 Miles of Track by Section—Division I	4 x 1
Length, Poles, Miles—Division II	7 x 27
Length, Rods, Miles—Division III	5 x 42
Length, Poles, Miles—Division IV	3 x 27
Distance and Cost of Construction by Division	8 x 8
Aggregated Costs	1 x 25
Lengths of Sections—Division V	3 x 16
Lateral Road Statistics	3 x 5
Cost of Damages due to Riot (Workers Protest)	24
Cubic Yards Excavated	3 x 22
Elevation and Descent of Track in Feet	21

TABLE 4 (A) (continued)

	<u>Columns x Rows</u>
Recapitulation of Elevation and Descent	7
Distances and Elevation	4 x 10
Masonry Budget	6
Quantity of Excavation and Embankment by Division	8 x 22
Revenue from Passengers by Station by Month	10 x 10
Expenses of Transportation by Category by Month	7 x 10
 <u>1832</u>	
Revenue from Passengers by Station by Month	12 x 13
Cost of Construction	9
Daily Cost of Running by Steam Engine	8
Washington Branch Construction Cost	8
Bridge and Viaduct Construction Cost	35
Gradation and Masonry Average Cost per Mile	6 x 8
Expenditures to Date—Masonry and Gradation	6
Rail Laying Costs	50
Disbursements for Construction Costs	35
Expenditures and Repairs of Railroad Cars	5
Comparison of Cost of Shipping Freight—Train vs. Wagon	8
Cost of Power: Horse vs. Steam	9
Revenue from Freight Transported East, West by Month	6 x 13
Monthly Comparison of Passenger and Freight Revenue	6 x 13
Expense—Monthly by Category	5 x 13
Revenue, Expense and Net Revenue by Passenger or Freight Activity by Month	9 x 13
Six Month Revenue, Expense and Net Revenue	9 x 7
Cash Receipts and Disbursements	27

TABLE 4 (B)
Content Analysis of B&O Annual Reports
Years 1833-1836: Commencement of Operations
Table Content and Size (Number of Columns x Rows)

<u>Tables</u>	<u>1833</u>	<u>1834</u>	<u>1835</u>	<u>1836</u>
Revenue from Passenger by Station by Month	10 x 13	10 x 13		11 x 13
Revenue from Freight—East-West by Month	6 x 13	6 x 13	6 x 13	7 x 13
Revenue from Passenger and Freight by Month	5 x 13	5 x 13	5 x 13	5 x 13
Expense by Category	3 x 13	3 x 8	7	4
Receipts and Expenditures	11	8	8	3 x 6
Cash Receipts and Disbursements	21	34	29	23
Six Month Profit—by Month	1 x 7		86 pages	
Six Month Receipts and Expenditures	2 x 2			
Six Month Revenue Comparison	3 x 7			
Engines and Cars	1 x 15			
Expenditure for Railroad Cars	1 x 6		4	
Probable Costs of Five Route Alternatives	1 x 600			

TABLE 4 (B) (continued)

Tables	1833	1834	1835	1836
Cost Comparison of Two Routes	1 x 12			
Estimate of Annual Repair Costs	1 x 35			
Table of Contracts (Construction)	6 x 8		7 x 13	
Masonry Costs on Washington Branch	9 x 8		11 x 39	
Knight's Study	3,600		86 pages	
Washington Branch—Cash Receipts & Disbursements		16	21	4 x 10
Cost per Train per Day		6		
Coach Usage—Miles		9		
Revenues—Expense Two Years Compared		3 x 3		
Distances and Elevations from Cumberland			4 x 24	
River Elevation			4	
Distances and Descents of Creeks			58	
Cost per Mile Comparison to Other Railways				2 x 6
Locomotive Performance Comparison				11 x 12
Actual Locomotive Engine Performance				12 x 14
Summary of Affairs			22	53
Abstract of Monthly Tonnage of Freight Shipment				8 x 13
Statement of Monthly Revenues—Washington Branch				5 x 13
Statement of Expenses—Washington Branch				4

TABLE 4 (C)
Content Analysis of B&O Annual Reports
Developmental Stage: 1837-1856

Description of Content	Year(s)
Summary Statement of Affairs	1837 – 1841 ••
Receipts and Expenditures	1837
Revenues and Expenses	1838 – 1856 •
Statement of Affairs—Washington Branch	1838 – 1839
Revenues & Expenses—Washington Branch	1838 – 1856 •
Balance Sheet	1840 – 1856 •
Balance Sheet—Washington Branch	1840 – 1856 •
Passenger & Freight Tonnage Comparison 2 years	1842
Passenger & Freight Tonnage Comparison 2 years—Washington Branch	1842
Operations	1843 – 1844
Operations—Washington Branch	1843 – 1844
Cost of Coal Hauling	1844
Estimated Coal Revenues	1844
Revised Estimation with Coal Car Improvement	1844
Rate Increase Projection of Revenue	1844
Retained "Nett"	1849 – 1856 ••
Retained "Nett"—Washington Branch	1849 – 1856 ••

TABLE 4 (C) (continued)

Description of Content	Year(s)
Comparative Operation Summary—10 years	1845 – 1847
Details of Operation	1845 – 1849 ••
Details of Operation—Washington Branch	1847 – 1852 ••
Passengers by Station	1848 – 1856 ••
Abstract of Commodities—Transported Westwardly	1848 – 1856 ••
Abstract of Commodities—Transported Eastwardly	1847 – 1856 ••
Expenses—Passenger and Freight	1847 – 1848
Trade Revenue, Expense, Profit and Dividend— Yearly Comparison	1847 – 1852 ••
Comparison with Leading Railroads	1847 – 1853 ••
Cost of Repair—by Type of Track	1847 – 1848
Wage Analysis—2 Year Comparison	1847 – 1852 ••
Two Year Comparison of Monthly Revenues Expenses & Trade	1847 – 1852 ••
Locomotive Listing	1848 – 1856 ••
Burden Car Listing	1848 – 1856 ••
Passenger Car Listing	1848 – 1849
Performance—Miles Run	1849 – 1856 ••
Coal Report	1853 – 1856
Siding Statistics	1853 – 1856
Siding Recapitulation	1853 – 1855
Washington Branch Sidings	1853 – 1856
Recapitulation of Main & Second Track	1853 – 1855
Cost per Mile for Labor of Maintenance	1853 – 1854
Miles of String Changed to Crosstie	1853 – 1855
Cost of Repair by Month	1853 – 1855
Value and Condition of Locomotives	1853 – 1854
Value and Number of Freight Cars	1853
Value and Number of Passenger Cars	1853
Amount Spent on Each Water Station	1854 – 1856
Revenues by Month—Passenger & Tonnage	1854 – 1856
Livestock Shipment Report	1854 – 1856
Flour Shipment Report	1854 – 1856
Wheeling to Baltimore Freight Report	1854 – 1855
Expenses of Main Line	1854 – 1856
Fuel (Coal & Wood) Inventory	1854 – 1856
Abstract of Package Shipment	1856
Abstract of Commodity Shipment	1856
Expenses of Washington Branch	1854 – 1856
Cars Transported to Baltimore	1856
Number & Condition of Bridges	1856
Comparative Cost of Repair of Track, Bridges, Waterstation and Depot	1854 – 1856
Subdivision Lengths	1854 – 1855
Gradation Expenditures	1854 – 1856
Expenditures on Each Bridge—Labor & Materials	1854 – 1856
Details of Cost of Ellysville Bridge	1854
Details of Cost of Monocracy Bridge	1854
Waterstations Costs	1854 – 1855

TABLE 4 (C) (continued)

Description of Content	Year(s)
Mount Claire Engine House Costs	1854
Martinsburg Engine House Costs	1854
Cumberland Engine House Costs	1854
Amount Spent on Each Depot	1855 – 1856
Comparative Statement of Expenses of Maintaining Rolling Stock	1854
Comparative Statement of Expenses of Maintaining Rolling Stock—Washington Branch	1854
Comparative Costs of Machinery Dept.	1856
Machinery Dept. Inventory of Materials & Tools on Hand	1856
Monthly Expenses of Machinery Dept.	1856

- Indicates ten years or more
- Indicates five years or more

operate the business. Beyond the stratification and combination of the data in innovative ways to produce useful information, the B&O experienced a high volume of transactions that heretofore had not been encountered, even by the largest trading or manufacturing firms of the day. Finally, the table communicates the fact that railroad operations, complex, multitasked, and far-flung as they were, required close coordination and control to operate in a safe, timely, and efficient manner. This required the data to be gathered and processed quickly and reported to operating managers, in turn causing railroads to employ more accountants and auditors before the Civil War than were employed by the federal and state governments altogether [Chandler, 1977, p. 110]. The training of accountants by railroads would be an important factor in the subsequent industrial revolution and the rise of the accounting profession.

As can be determined from Table 4 (A), the first reports are oriented toward information about the construction of the railroad. Detailed descriptions of surveys of routes and alternatives are given, even though it might be a decade before the rail line was actually built in these places. Technological developments and innovations are also described in these early reports, with full engineering details. Detailed disclosures of plans and progress were necessary to keep shareholders informed and, hopefully, enthusiastic, especially since construction was slower than predicted during the early, optimistic stages of company promotion. Revenues would begin in the fourth year. Comparisons of alternatives were closely documented such that

readers could follow the company's progress. The construction was celebrated at important points. Charles Carroll of Carrollton (at the age of 92 and the sole surviving signer of the Declaration of Independence) presided at the inauguration of the B&O, a ceremony for the laying of the "First Stone," July 4, 1828 [Previts and Merino, 1998, p. 62]. This portion of the road, from Baltimore to Ellicott's Mill, would be 13 miles of double-track line. Carroll, a director of the road, said: "I consider this among the most important acts of my life, second only to my signing the Declaration of Independence, if even it be second to that" [Jacobs, 1995, p. 14]. Carroll's insight into the future was clearer than President John Quincy Adams', who was in Washington, D.C. that day celebrating the commencement of the rival C&O Canal, because he thought that railroads would fail and that canals would be the main transportation means [Jacobs, 1995, p. 14].

As reflected by the listing in Table 4 (A), the first years' reports focused on construction costs and cost measures and comparisons. After the initial enthusiasm of founding the company, cost overruns occurred, and criticism centered on bridge construction and large expenditure amounts that could be labeled as part of an "experiment." A cost disclosure focus, consistent with stewardship, became an institutional feature of the reports throughout this 30-year period. The managers recognized that shareholder support required that investors appreciate that the company was prudently employing scarce investment resources. Disclosure of information about construction and operating costs was needed to maintain investor confidence in management and to address concerns, such as those which led to the appointment of William Woodville in 1830 to control disbursements for construction [B&O, Minute Books, 1830].

BUSINESS LIFE CYCLE AND REPORTING

These initial annual reports, 1827-1856, characterize the developmental stage in the company's life cycle. The first report (1827) contains a president's letter to shareholders, describing company plans and emphasizing that the company has just been organized; it contains prose describing the company but no quantitative measures. The second report (1828) again focuses on a description of plans, this time more concrete and complete since initial surveys of routes had commenced. Also, the president's letter in the second annual report discusses the

need to raise capital. This report includes not only the president's letter but reports from the company's board of engineers describing the proposed route and introducing a "departmental commentary." Here also appears the first table with figures, giving distances, furnishing engineering data relating to excavation (in quantity of cubic yards of earth), and describing bridges constructed for the first seven miles of track. No dollar amounts are provided, only physical measurements.

In the third report (1829), dollar amounts are included, so that cost as a measure of progress is introduced as a subject of reporting. Construction cost overruns (along with the capital raised and the distances traversed) are featured items in the president's letter to shareholders. Costs are also a focus throughout the board of engineers' reports, which detail expenses, along with physical measures, locations, and activities. The information reported includes the actual amount spent, along with the estimated capital needed to complete various parts of construction. Costs per quantity (per yard, per "pole") are used as statistical measures of expenditures and construction contracts. Cost projections and budgets were also used, as well as cost-per-mile (\$20,000 per mile) estimates for a section of track. The third annual report concludes with two extensive tables detailing construction contracts and the arrangements for compensation, in cents per yard, for excavation.

The next stage of development in the reports is distinguished by the receipt of revenues. This is mentioned in the president's 1830 report, almost as an anecdote, because full operations were not yet underway and the focus was still upon construction and testing of equipment. One such test included a competition between steam power and "horse" power. The *Tom Thumb*, believed to be the first steam locomotive built and operated in the U. S., raced a horse-drawn coach over the B&O's first stretch of double track on August 28, 1830. The horse won, but the event publicized the debut of steam engine technology. The B&O would increasingly employ steam engines in the next stage of its operation.

The 1831 annual report introduces tables reporting railroad revenues and expenses. These two tables appear to be supplemental to the disclosures about construction, which continued as a major emphasis. Now the public was becoming involved as passengers, for riding the railroad as an excursion was popular, much as a trip to Disney World is today. The 1831 revenue solely from passengers reflected this novelty. By the following year, the route was sufficiently developed to attract freight, a

strategic service objective of B&O operations. In the 1831 annual report, information about revenue was developed by month and by station boarded, and expenses were measured by month and by category of expenditure.

Revenues and expenses were first “netted” (today we might say “matched”) in an attempt to measure the outcome of operations in 1832 when the emphasis placed on operations became equal to that given to construction. Significantly, revenues were broken down into passenger and freight sources. Further analysis was done on each source; passenger and freight statistics were kept by month. Within a few years, revenues would be categorized by type of commodity (east and west shipped and by station boarded or shipped from and to). Expenses were also collected by month. Expenses were not only categorized but also allocated to passenger revenue and to freight revenue, such that profitability (“net revenue”) of each activity was measured. These “breakouts” are similar to reports on segments and cost allocation.

The 1832 report contains several new elements. A six-month “interim” report is included (see Table 5) as is a cash receipts and disbursements statement. This information was perhaps a response to liquidity concerns. Cash shortages plagued the company (see Table 6). During this period, “net revenue” (operating income) reports were employed. These appeared several years before a proto-balance sheet and suggests that profitability was most important. However, in the 1832 annual report the treasurer did include a listing of the real estate owned by the B&O, a step toward the development of a balance sheet (see Table 7).

TABLE 5
1832 Interim Income
(6 months)
(M. No. 6.)

A detailed Statement of the Receipts, Expenses, and Net Revenue of Transportation, on the Baltimore and Ohio Rail Road, from the 1st of April to the 30th September, 1832.

	PASSENGER			TONNAGE			TONNAGE		
	Receipts	Expenses	Net Revenue	Receipts	Expenses	Net Revenue	Receipts	Expenses	Net Revenue
April,	7,049.73	2,885.32	4,164.41	7,949.04	3,666.86	4,282.18	14,998.77	6,552.18	8,456.59
May,	8,240.25	2,949.—	5,291.25	8,243.14	3,394.40	4,848.65	16,483.39	6,343.49	10,139.90
June,	8,661.29	3,019.—	5,642.29	5,887.36	3,025.55	2,861.81	14,548.65	6,044.55	8,504.10
July,	8,614.39	3,085.55	5,578.84	5,393.67	3,062.39	2,331.28	14,008.06	6,097.94	7,900.12
August,	8,691.23	3,054.08	5,637.15	7,377.23	3,433.39	3,943.84	16,068.46	6,487.17	9,580.99
September,	5,554.53	3,068.32	2,486.21	9,340.82	3,692.19	5,648.63	14,895.35	6,760.51	8,134.84
Totals	46,811.42	18,011.27	28,800.15	44,191.26	20,274.87	23,916.39	91,002.68	38,286.14	52,716.54

TABLE 6
1832 Annual Report Exhibits of Cash
Disbursements ["N. No. 1"], Cash Receipts ["N. No. 2"]
and Cash Account Activity ["N. No. 3"]

[N. No. 1.]

An exhibit of the entire disbursements of the company from its first organization to the present time:

Expenses incurred in obtaining the charter, and in the organization of the company, and expenses of various committees since,	\$ 5,446.28
Mission to England, and salaries of the board of engineers,	21,160.95
Salary of the Chief Engineers, since the new organization of the officers,	5,250.00
Office expenses, including stationary, postages, printing, advertising, etc.	10,346.44
Surveys for the lateral branch road to Washington,	\$ 16,650.00
Interest,	38,390.85
Law expenses, fees of counsel and chancery expenses,	24,158.94
Preliminary surveys of the various routes previous to the location of the roads, including instruments, estimated at	<u>24,000.00</u>
Expenses of final surveys and location, including instruments,	103,199.79
Construction of a bridge for the accommodation of the Washington road over the railway,	3,534.98
Expenditures by the department of graduation and masonry,	1,193,744.79
Expenditures by department of construction, including materials to the value of above \$36,000 remaining on hand,	822,055.14
Expenditures by other departments on account of graduation and masonry, and expenses incurred in obtaining right of way for road bed, damages paid to landholders, salaries to other officers than engineers, and including small unexpended balances now remaining in the hands of the disbursing officers,	<u>56,363.89</u>
Contingencies,	2,072,163.82
Expenditures on account of moving-power; including carriages, wagons, steam engines, horses, etc.	1,525.97
	184,634.22

TABLE 6 (continued)

Construction of depots, including purchase of property, building, stables, etc.	<u>83,445.87</u>	<u>268,080.09</u>
		<u>\$2,507,356.58</u>

NOTE. Of the above expenditures, it will be perceived that the sum of \$268,080.00 has been disbursed in the acquisition and improvement of real property and in the procurement of machinery and moving power, besides \$16,650 paid on account of surveys for the Washington Rail Road, \$24,000 paid for preliminary surveys required over a great district of country for the ascertainment of the best practicable route for the final location of the road, \$38,390.85 paid for interest on loans obtained in anticipation of the installments, and \$24,158.04 paid for law expenses, leaving the sum of \$2,136,076.70 for the construction of the road and all the various expenses incident to the organization and operations of the company up to this period. At the same time, it may be remarked, that the real estate, machinery and moving power, owned by the company is now fully worth the cost at which it stands charged.

[N. No. 2.]

Statement of the receipts from Transportation and of the amount of dividends paid

Amount received from the Transportation of passengers and tonnage, up to the 1 st October, 1832,		\$183,053.21
Amount paid for dividends declared,	\$69,075.00	
Expenses of Transportation,	<u>98,653.01</u>	<u>167,728.01</u>
Balance on hand in favor of Transportation account,		\$15,325.20

[N. No. 3.]

The Baltimore and Ohio Rail Road Company, In account with George Brown, Treasurer, Cr.		
By cash received on 39,900 shares up- on which \$55 per share has been paid,	\$2,194.500	
Cash received, on 100 shares paid up in full \$100 per share,	10.000	
Cash received, on loan from the Bank of the United States,	200.000	
Cash received, on loan from the Mechanic's Bank of Baltimore,	100.00	
Balance on hand from Transportation account,	<u>15.325.20</u>	\$2,519,825.20
To amount of disbursements from the organization of the company the 1 st October, 1832, per Statement, N. No. 1.	2,507,356.58	
Balance at the Cr. of the Company,	<u>12,468.62</u>	\$2,519,825.20

Baltimore, October 1st, 1832

GEORGE BROWN, *Treasurer*,
Of the Baltimore and Ohio Rail Road Company.

TABLE 7
An Inventory Listing of Assets from the
1832 Annual Report
A Preliminary Balance Sheet

[N. No. 4.]

List, and description, of the real estate acquired, and now held by the Baltimore and Ohio Rail Road Company.

1. Two entire squares of ground, containing nearly three acres and a half, situated at the eastern termination of the rail road on the City Block, bounded by Exeter, Lancaster, Fleet and Canal streets, and divided by Alice Anna street; fronting on these several streets two thousand two-hundred and twelve feet, of which front, two hundred and fifty-seven feet lies on the city dock, affording a direct communication between the railway and the shipping in the harbour. This property was a donation to the company from the corporation of the city of Baltimore and was conveyed by deed, bearing date the 22d day of June, 1832, recorded in Baltimore county.

2. Three parcels or lots of ground situated on Pratt and Charles streets, in the city of Baltimore, near to Light street wharf; conveyed by John White, trustee, and William Patterson, by deed bearing date the 29th day of July, 1831, recorded in Baltimore county.

3. Four undivided fifth parts of a lot of ground on Pratt street, and of a lot adjoining thereto, conveyed by William Gwynn and others, trustees, by deed bearing date the 6th day of July, 1831, recorded in Baltimore county.

4. A lot of ground at the intersection of Charles and Camden streets, adjoining the last mentioned lots, assigned by Robert Miller, by indenture bearing date the 6th day of June, 1831, recorded in Baltimore county.

N.B. On the above described pieces of ground situated between Light, Pratt, Charles and Camden streets, there are erected six commodious warehouses, now partly occupied as the principal depot of the company in the city of Baltimore.

5. A lot of ground containing nearly ten acres of land, situated near the intersection Pratt street and the Washington turnpike road, bounded on three of its outlines by James, Stockholm and Republican streets, being now used as a depot, and is the point at which the locomotive engines of the company arrive and depart. There is erected upon this lot, an extensive house for the protection of the carriages, a weighing house, offices for the forwarding agents of the company, work shops, and other conveniences and fixtures. This property was a donation to the company, from James Carroll, Esq., and was conveyed by deed, bearing date the 1st day of December, 1830, recorded in Baltimore county.

6. A lot of land situated on the tenth section of the first division of the rail road immediately at its intersection with the Washington turnpike road, about six miles from Baltimore, conveyed by Joshua and Harriet Trimble, by deed, bearing date the 11th day of June, 1830, recorded in Baltimore county.

7. A lot of ground situated at the first intersection of the rail road with the Frederick turnpike road at Ellicotts' Mills, binding on that turnpike two hundred and twenty-nine feet, and containing about one acre of land, upon which is erected a substantial and appropriate warehouse and necessary offices for the accommodation of the trade at that depot.

This property was a donation from George, Samuel, Andrew and John Ellicott, and was conveyed by deed bearing date the 2d day of December, 1830, recorded in Anne Arundel County.

TABLE 7 (continued)

8. A parcel of land containing about five and one-third acres at the commencement of inclined plane number one, extending one hundred and fifty feet on each side of the centre of the rail road, and running parallel therewith seven hundred and sixty-eight feet. This land is intended for additional rail tracks, turnouts, and buildings necessary at the foot of that plane. The title was acquired by the inquisition of a jury, whose verdict is recorded in Baltimore county.

9. A parcel of land containing about two and a half acres extending three hundred and fifty-eight feet in length by three hundred feet in width, at the head of plane number one. This ground is intended for the accommodation of a stationary engine and other fixtures. The title to it, was acquired in the same manner as to the preceding lot, and the verdict is lodged for record in Baltimore county.

N.B. Objections have been filed to the ratification of the last mentioned verdict, which are now *sub judice*.

10. A tract of land containing eight and a half acres, on the summit of Parr's Ridge, extending one hundred and eighty-three feet on each side of the centre of the rail road for a distance along and parallel therewith seven hundred and eighty-seven feet, and thence continuing to the south side thereof only, the further distance of one thousand feet. The title to this land was acquired in the same manner as the two preceding tracts, and the verdict is recorded in Frederick county.

This piece of land is intended for the accommodation of the stationary engines and their necessary appendages to be erected at that place, for working of planes number two and three. The extension of the line one thousand feet on the south side further than on the north side of the road, was for the purpose of securing a spring required to afford the necessary supply of water for the engines.

11. A tract of land at the head of incline lane number four, containing between seven and eight acres, intended for the accommodation of a stationary engine. This tract is, in length, nine hundred feet, and in width one hundred and fifty feet, on each side of the centre of the rail road, excepting for a short distance on the south side, where the width was enlarged to take in a spring necessary to afford a supply of water for the engines.-The title was acquired in the same manner as the preceding, and the verdict is recorded in Frederick county.

12. A tract of five and a half acres at the foot of inclined plane number four, extending in length eight hundred feet, and one hundred and fifty feet in width, on each side of the centre of the road. This land is intended for similar purposes, as that owned by the company, at the foot of incline plane number one. The title was acquired in the same manner, and the verdict is recorded in Frederick county.

13. A lot of ground containing six acres, situated in the city of Frederick, upon which, the company are now erecting a substantial and commodious warehouse and offices for the accommodation of the depot established at that place, as also the requisite car houses and other convenient fixtures. This property was a donation for the city of Frederick, and was conveyed by a deed executed by Lewis Birely, Esq., dated the 30th day of May 1831, recorded in Frederick county.

Respectfully submitted,

G. BROWN, *Treasurer,*
Balt. & Ohio Rail Road Company.

The evidence to date indicates that early financial statements evolved from operations reports. The prototype of an income statement, issued in 1831, began as a volume-of-traffic report detailing the number of passengers and dollars collected from ticket sales by month.

Over time, a number of individual managers with different titles became identified with the information in the financial reports. The report immediately following the statement of revenues was the monthly transportation expenses by category and was prepared by William Woodville, "Auditor & Superintendent of Transportation." Woodville, appointed in February 1830 as auditor, was charged "to keep the books of the company, to examine and certify to all claims or accounts against the company, and to perform such other duties as the President may require of him." As such, this was a controllership function. "Auditing" was performed by a Committee of the Board of Directors [B&O, Minute Books, 1830, p. 287].

In 1837, George Brown, the treasurer, reported on cash receipts, disbursements, and cash balance. This reporting responsibility changed when Woodville, who had held the title "auditor," became the superintendent of transportation, reflecting the increased importance of train operations. Later information about the revenues and expenses of the transportation department and the treasurer's reports about cash became the responsibility of J. I. Atkinson, whose title was initially "secretary." After several years of secretary reports, Atkinson became the secretary-treasurer, then simply the "treasurer." Much of the consistency in the financial statements during this period of rapid development and change can be associated with Atkinson's terms of office from 1837 until 1866.

The income statement, as noted, appeared initially as an operating report of quantity of freight and number of passengers. It evolved into separate transportation department statements of revenues and expenses before being "netted" together. It then appeared in 1834 in a "T-account" format and thereafter in a vertical format, starting in 1840 (see Table 8). "Earnings of the road for the year" was shown before interest expense and dividend income of the Washington branch. This reflected a modern operating income concept, separating and calculating operating income before other investing expense and revenue.

The 1840 annual report contained the first full balance sheet. It appeared as a large "T-account," with a side marked "Dr." (listing the asset accounts with balances) and a side marked "Cr." (detailing the equity and liability accounts) (see

TABLE 9
B&O's First Reported Balance Sheet
1840 Annual Report: "T"-Account Format

(A)

The Baltimore and Ohio Rail Road Company, October 1, 1840

DR	CR.	
Stock in the Washington Branch Road,		
Cost of Road to Harpers Ferry	\$3,465,048.79	
Real Estate and Depots,	266,136.86	
Locomotives, Horses, Mules, and Harness, Passenger and Burden Cars	480,329.99	
Cost of Road west of Harpers Ferry		
John I. Donaldson and Fielding Lucas, Jr. Commissioners, for this amount of City Six per cent. Stock placed in their hands for the redemption of Stockholders,	4,211,535.64	
Baring, Brothers & Co. London, City Six per cent. Stock on hand, Bills Receivable, Expenses of Stock Certificates of the State, to be refunded by the Commissioner of Loans, Cash in the hands of Disbursing Officers,	1,094,639.85	
Cash in hand,	700,000.00	
	3,181,005.11	
	176,322.53	
	3,234.92	
	1,711.40	
	1,379.88	
	109,556.45	
	\$10,511,985.78	
Loan at Six per cent for the purpose of taking Stock in Washington Road	\$4,000,000.00	\$1,000,000.00
Less instalments unpaid, Stock,	257.50	
Suspense Account, Stock Orders issued, Due the Washington Branch Road, Loans from Banks on City Stock, on account of the City of Baltimore, City of Baltimore, State of Maryland Five per cent Sterling Bonds, Premiums on Sterling Bills, Revenue,	583,469.00	3,999,742.50
Less Expense, Repairs and Interest,	336,522.00	1,260.21
		515,000.00
		96,790.15
		374,962.54
		1,074,694.59
		3,200,000.00
		2,588.79
		*246,947.00
		\$10,511,985.78

Office of the Baltimore and Ohio Railroad Company, October 1, 1840
J. J. ATKINSON, Sec'y.
*To this amount will be added the dividend from the Washington Branch Road due the Main Stem, \$46,467, and make the net Revenue \$293,414.

titled, except for the "(A)" caption. It was referenced as "statement A" in the letters to shareholders. In 1853, the reformed statement became the "Statement of Accounts." The ordering of assets during the first 30 years was basically from long-term, permanent assets to liquid assets, with cash listed last, consistent with a British style. The sources of assets were a mixed ordering of liabilities and equity during the 1840s to 1853. When the "T" format was replaced by the vertical format in 1853, "Liabilities" (which included equities) appeared at the top of the statement, with assets at the bottom. The first accounts listed in this section were the common stock accounts, followed by long-term debts, then short-term debts. As was done in the 1840s, the "statement of accounts" showed the "profit and loss" account balance (formerly "revenues less expenses") last, after the current liabilities.

Financial statements seemed to assume new levels of importance during the administration of President McLane. Starting in 1837, statements were placed before construction, engineering, and transportation reports, immediately following the president's letter to the shareholders. Thus, by advancing in relative placement, financial statements were assigned a more prominent position, reflecting the role that financial information played and supplanting operational reports by individual managers. At first, McLane eliminated subordinate reports when he took office in 1837, only to reinstate them after "reorganizing" the railroad late in his tenure. McLane's "reorganizing" initiative occurred after a year-long (second) trip to England to raise capital and to study British railroads and their structure and operations, including such diverse matters as locomotive engines and management. McLane and Chief Engineer B.H. Latrobe were active in securing data which permitted comparisons between other U.S. roads as well. McLane is identified with the introduction of reports by three principal superintendents: (1) the master of transportation, (2) the master of machinery, and (3) the master of roads. However, the origins of this practice also trace back to the second (1828) annual report, which includes reports from the board of engineers. The three superintendents reflected McLane's structuring of the B&O around these major railway functions. Duties and responsibilities appeared to be carefully defined. It is unclear, however, if this new structure was the result of the influence of the British railroads or by the companion study by Latrobe of New England railroads, especially the Western. Examples of such studies include the 1838 reports by B&O engineers Knight and

Latrobe. Their January and May publications to McLane report on "several of the most important rail roads in the middle and northern States of the Union . . . which we visited under your directions" [Knight and Latrobe, 1838, p. 3]. Perhaps the source of the organizational structure was both. In any event, the B&O as "the B&O University" would influence other railroads; railroading, itself, would have an impact on the structure of larger manufacturing companies later, during America's industrial revolution of the 1880s and after [Chandler, 1979].

McLane's administration developed fundamental reporting schemes such as assigning alphabet letter labels to statements, "(A)," "(B)," "(C)," etc., and referencing the statements not as "the income statement" but as "the statement marked B." This practice of alphabet labeling used up the single alphabet by 1857, and some reports were being number labeled. By 1859, the last exhibits were given double letters (e.g., "AA," "BB," etc.). The practices of labeling reports by letters and numbers and referencing them as "exhibits" or "tables" were employed by other railroads such as the Illinois Central Railroad (1856) and the Delaware, Lackawanna & Western Railroad (1856). This is possibly evidence of the B&O's influence.

As noted above, the first, full B&O balance sheet was published in 1840 under McLane's presidency. Revenues less expenses were shown on the right side as part of the determination of the equity amount. This practice continued until 1849, when President Swan issued his first B&O annual report and included a statement calculating the amount of profit retained in the business (see Table 10). "The policy of President Thomas Swann (1848-1853) was the completion of the road to the Ohio at any costs. . . . Earnings were used as capital and dividends declared in stock. . . ." [Reizenstein, 1897, pp. 80-81]. This disclosure provides some of the earliest evidence of what Leland Jenks [1944] attributed only to post-Civil War railroads; namely, the practice of "companies to invest their earnings in necessary improvements and extensions. . .," which meant foregoing dividends, a practice about which foreign security holders complained bitterly. But as Jenks observed: "This financing of corporate growth from within may fairly be claimed to be an American innovation in capitalistic technique, which has only recently been diffused to the British Isles" [Jenks, 1944, p. 10]. The B&O's annual reports may evince one of the first uses, if not the origin, of this practice among significant early 19th century U.S. corporations. The statement calculating the amount of earnings retained by the B&O first appeared in the

1849 annual report. It remained as an untitled schedule until 1854, when it was labeled “Statement of Profit and Loss” and linked the “*Nett Receipts Statement*” to the balance sheet for the first time.

Table 10 shows the 1849 profit and loss (retained earnings) statement. It appears as an account labeled with “debit” and

TABLE 10
The Baltimore and Ohio Rail Road Company
Retained Profits Report in “T”-Account Format

DR.				CR.
Oct. 1, 1848, Dividend in Stock		\$245.00	Net receipts for the year ending this day	\$551,558.07
Oct. 1, 1849, Debits paid during the year, including			Dividend from the Washington Branch,	30,978
Interest on Bonds		313,960.36	do. "	30,978
Appropriation for the Sinking Fund		40,000	Gross Receipts for the year ending this day,	\$1,241,205.45
Improvements and Stocking the Road,		218,372.93	Less expenses of working the road and keeping it in repair,	644,634.15
Dividend of five per cent. in Stock on				
\$7,227,400 now declared		361.370		
Balance		31,382.08		
		\$1,210,085.37		596,571.30
				\$1,210,085.37

Office of the Baltimore and Ohio Rail Road Company, October 1st, 1849.

J. I. ATKINSON, *Treasurer.*

“credit” sides. The account is in balance because the balance amount is computed, or supplied, for the debit side. This amount (\$31,382.08) is the retained earnings. “Nett receipts” taken from the previous year’s retained profits are the starting point of the calculation. The income statement’s gross receipts and “working expenses” are netted for that year (after being shown on the “nett-receipts” statement). The cost of interest (on debts), as well as the cost of improvement of the railway, are treated as “debits,” just as dividend declarations, reducing the balance of retained earnings. This treatment indicates that the cost of interest was not treated as an expense, but rather as a distribution of operating profits to debtholders. Also, certain types of expenditures on railway improvements, which now would be capitalized as assets and depreciated over time or expensed directly on the income statement, were treated as a direct reduction in the retained-profit balance. This view of income and of expense treatment, which differs from the modern accrual and matching model, challenges our contemporary comprehension of the concept of profitability.

Table 11, an exhibit taken from the 1851 annual report, reflects not only revenues by source, expenses, and “nett receipts” for each year of operation, but also shows dividends and surplus reinvested during this period. While dividends were not an annual event, by the late 1840s and early 1850s, reinvested profits became a major source of the capital employed to complete the link to the Ohio River.

Revenue and Profitability: Table 12 reports the invested cost of the railroad originally estimated (1827) versus actually incurred (1853). Estimated (1827) vs. actual (1853) annual revenues for the entire route are also given. Growth of revenues occurred as the rail line expanded—in particular after reaching Harper’s Ferry in 1834 and Cumberland, Maryland in 1842. In 1853, the whole line from Baltimore to Wheeling on the Ohio River (a distance of 380 miles) was opened for use, generating revenue increases as each section of track extended service between east and west.

Annual documents reveal the profitability of the B&O where, in relation to revenue, profits often reached 50% or more. This margin indicates the economic value added by the B&O to shippers and passengers when compared with the costs of shipping freight or traveling by other means (wagon or canal). The high profit margin contrasts with the significant fixed and long-term investment of constructing the railroad. How-

TABLE 11
Schedule of Dividends
Table O
Trade, Revenue, Expenses, Profits and Dividends of the Baltimore and Ohio Rail Road, from the time of its opening, in 1830, to the present date, September 30, 1851

Years ending Oct. 1st	RECEIPTS										Expenses			Dividends		Surplus Reinvested
	Passengers					Tonnage					Total Receipts Passengers and Tonnage	Total for Passengers and Tonnage	Per cent	Amount		
	Carried in Washing- ton Branch Trains	Carried in Main Stem Trains	Total Number of Passengers on Both Road	Receipts from Passengers and Mails	Eastward Freight Tons	Westward Freight Tons	Total Freight Tons	Receipts from Tonnage	Total Receipts Passengers and Tonnage							
1830		81,905	81,905	\$27,250	3,876	2,055	5,931	\$4,155	\$14,711	\$11,985	\$ 2,726					
1831		89,022	89,022	67,910	29,445	11,640	41,085	69,027	31,405	10,995	20,410			\$69,975	\$15,325	
1832		88,633	88,633	83,233	37,166	25,589	62,755	112,447	136,937	75,673	61,264					
1833		94,844	94,844	89,182	36,192	19,929	56,121	116,255	195,680	138,485	57,195			30,061	27,134	
1835	12,147	85,611	97,758	93,540	46,979	23,655	72,634	169,828	263,368	161,216	102,152			45,002	57,150	
1836	75,416	81,686	157,102	128,126	40,805	25,898	66,703	153,186	281,312	212,937	68,375				68,375	
1837	73,474	67,225	140,699	145,625	40,697	33,901	74,598	155,676	301,301	289,125	12,176					
1838	83,749	60,767	150,516	166,694	47,447	30,079	77,526	198,530	365,224	271,581	93,643				93,643	
1839	86,964	65,537	152,501	173,860	54,573	45,878	100,451	233,487	407,347	312,700	94,647				94,647	
1840	87,202	65,216	152,418	170,035	62,736	25,638	88,374	255,848	432,885	275,189	157,694				157,694	
1841	107,136	64,493	171,629	179,616	42,056	23,443	65,499	211,454	391,070	239,622	151,448				151,448	
1842	94,566	60,002	154,568	181,177	37,600	30,243	67,843	245,315	426,492	216,715	209,777				209,777	
1843	78,425	71,108	149,533	274,617	55,523	27,191	82,714	300,618	575,235	295,833	279,402				139,402	
1844	99,106	74,661	173,821	336,876	69,886	33,224	103,110	321,743	658,619	311,633	346,986				171,986	
1845	103,588	98,870	262,458	369,882	90,865	50,541	141,406	368,721	738,603	363,841	374,762				374,762	
1846	157,157	123,107	280,264	413,341	110,356	83,559	193,915	468,346	881,687	454,840	426,747				216,847	
1847	151,753	136,921	288,674	447,020	183,824	79,511	263,335	654,917	1,101,937	590,829	511,108				301,108	
1848	170,196	160,974	331,170	488,376	205,174	66,078	271,252	725,288	1,213,664	662,106	551,558				551,558	
1849	171,573	165,309	336,882	394,497	287,894	63,761	351,655	846,708	1,241,205	644,634	596,571				596,571	
1850	214,360	180,905	395,265	438,375	402,905	74,650	477,555	909,430	1,343,805	609,589	734,216				734,216	
1851	164,862	164,054	328,916	406,796	459,000	75,921	535,020	942,427	1,349,223	695,919	653,303				653,303	
Totals	1,931,728	2,086,840	4,018,578	\$5,083,028	2,345,098	854,584	3,200,482	\$7,459,400	\$12,557,147	\$6,983,849	\$5,573,295			\$1,089,138	\$4,484,157	

TABLE 12
Estimates Versus Actual Costs, Miles and Revenues

Estimated cost of construction reach Ohio River – Feb. 1827	<u>\$ 5,000,000</u>	
Actual cost of construction		
Baltimore to Harper’s Ferry	\$4,000,000	
Harper’s Ferry to Cumberland	3,623,606	
Cumberland to Wheeling	<u>6,631,721</u>	
Total actual cost to reach the Ohio River (Jan. 1853)	<u><u>\$14,255,327</u></u>	
Estimated length of road – Baltimore to the Ohio River (Feb. 1827)		290 miles
Actual length of Road – Baltimore to the Ohio River (Jan. 1853)		379 miles
Estimate revenues per year (Feb. 1827)	<u>\$ 750,000</u>	
Actual revenues per year (Oct. 1, 1853)	<u><u>\$ 2,033,420</u></u>	

Source: Reizenstein [1897, p. 86]

ever, caution must be used when introducing such “present-minded” analysis. The income numbers and the asset numbers were measured without the benefit of many late 20th century concepts and thought habits, such as the capital-revenue distinction for expenditures. That is, these early B&O amounts for income and asset numbers do not reflect cost of renewals and betterments, which today would be capitalized but were then deducted directly from the retained profits, since the practice of “matching” and the concept of depreciation were, at best, nascent.

Special Reports: The B&O annual reports over the first 30 years included a variety of “special reports” to inform shareholders about transitory conditions or events. Often the practice of including them would evolve into a continuing process. For example, special reports began with the second annual report (1828), when the letter to the directors from the board of engineers was printed. This letter described the surveyed route and discussed distances, elevation, and the difficulties of various possible alternative routes. Forty-two pages in length, it overshadows the contents of the other 13 pages of this annual report.

The third annual report follows the pattern of the second, with a 13-page president's letter and eight pages of reports from the board of engineers. These reports are even more detailed and included data for alternative routes.

The fourth annual report (1830) continues the trend of disclosing internal management information to investors. It includes not only construction and route alternatives, but also a very detailed analysis of wheels and rail design (with formulas and calculations) and a cost analysis of rail versus canal transportation and steam versus horse as sources of motive power. These types of cost analysis continued to be presented throughout the 1830s and 1840s.

The 1855 report carries a two-page safety report with a seven-page appendix detailing each of the deaths and severe injuries that had occurred on the road and its property during the year. No clear need was identified for the initiation of this report. In it, the railroad denied responsibility for many of these hazardous episodes; however, B&O management seemed concerned about passenger safety. This report appeared only once although in other annual reports before and after 1855, injury/fatality data are mentioned.

Comparative Reports: An Early Example of Benchmarking: Rate-adjustment information provides the basis for another type of special study. This kind of report first appeared in the 1836 annual report (see Table 13 (A)). Typically, the B&O sought to portray itself as the lowest-priced provider of transport of goods and passengers compared with other competitors. The granting of rate increases was controlled by state legislatures and was difficult to achieve. It appears that it had to be demonstrated that an addition to the rate was needed in order to offer a competitive return on the cost of capital. Given the significant investment by city and state governments, the Maryland legislature did have an interesting dilemma in dealing with rate requests. Voters wanted low rates, but capital investment required a competitive return. Rate-proposal comparisons with other railroads were useful to demonstrate to stockholders that the B&O's costs were well managed. Table 13 (A) shows the rates of six other railroads for 1836, manifesting an early use of industry comparisons from annual report information (benchmarking). This may be one of the first such reported attempts at financial statement analysis. By 1852, New England railroads' financial data were being published comparatively in *Hunt's Merchants Magazine* [Previts and Merino, 1998, pp. 92-

93]. The comparisons to other railroads became more elaborate with the passage of time. Table 13 (B) is taken from the 1848 annual report. Here, the B&O compares itself with six other railroads as to both cost and revenue (freight-ton and passenger on a per-mile basis). The B&O also analyzed performance by the ratio of expense to revenue (the complement of profit margin). Thus, the B&O used financial ratios and industry comparisons early on. These innovations seem to represent another set of B&O innovations.

TABLE 13 (A)
1836 Annual Report
Rate Comparison—President's Letter

*(President arguing for rate increase)**

	<u>Passenger per mile</u>	<u>Freight/Ton per mile</u>
B&O Railroad	3¢	4½¢
Petersburg Rail Road	5¢	10¢
Winchester and Potomac	6¢	7¢
Portsmouth and Roanoke	6¢	8¢
Boston and Providence	5¢	10¢
Boston and Lowell	3½¢	7¢
Mohawk and Hudson	5¢	8¢

*President also explaining why profit level low and the reason why no dividends could be paid in 1836.

At an early stage, B&O reports contained yearly comparisons to demonstrate progress and growth to shareholders. Revenues and expenses for two years were first collated in 1834, only four years after the first revenue activity. Comparison of the current year to previous years was practiced off and on again until 1847, when it became standard to present long-term revenue and expense comparisons for all years going back to 1831 (see Table 11).

Illustrations and Diagrams: Early B&O annual reports provided terrain and route maps. The very first annual report (1827) contains a map of the intended route. This information was important to investors who wanted to follow the company's progress and evaluate management's plans and decisions. Subsequent years' reports continued this practice.

Only one illustration is to be found in the first 30 years of company annual reports. For 1830, there is a diagram of the rim and flange profile, detailing an innovation in the design of the rail and track. Along with this illustration are pages of engi-

TABLE 13 (B)
1848 Annual Report
Table N
Comparison of the cost of Construction and Operation upon seven of the leading Rail Roads of the United States, prepared from their most recently published annual reports

NAME OF ROAD	Length of Road in Miles	Cost of Road and Equipment	Cost per Mile	Receipts from Passengers	Receipts from Tonnage	Total Receipts, Including Mails, Rent, &c	Total Expenses	Ratio of Expense to Receipt per Cent	Cost per Mile Run	Cost per Passenger per Mile—Cents	Cost per Ton per Mile	Charge per Passenger per Mile	Charge per Ton per Mile
Boston and Lowell	25 3/4	1,956,719	75,990 .00	209,612	234,815	448,556	253,409	56.5	101.1	1.749	1.220	2.20	3.30
Boston & Providence	41	2,544,715	62,066.00	226,103	118,173	363,328	175,346	48.2	77.5	1.821	2.286	3.14	6.10
Boston & Worcester	44 5/8	4,113,610	92,182.00	304,580	374,663	772,170	381,986	49.5	94.2	1.375	1.700	2.10	3.48
Eastern Rail Road	38 1/4	2,937,207	76,789.00	343,373	50,455	424,841	160,083	37.6	66.2	1.255	2.172	2.69	4.33
Western Rail Road	156	8,769,474	56,215.00	502,322	785,346	1,325,336	676,690	51.	82.6	1.094	1.716	2.81	2.80
Georgia Rail Road	213	3,447,398	16,185.00	157,695	280,486	477,053	175,553	36.8	62.9	2.077	1.638	4.17	4.73
Average of the above	86.4	3,961,520	63,238.00	290,614	307,323	635,214	303,844	46.6	80.7	1.562	1.789	2.85	4.12
Balt. & Ohio R.R.	179	\$9,500,067	\$53,073.00	\$445,254	\$717,212	\$1,213,665	\$662,106	54.5	72.4	1.092	1.829	2.04	2.59

The statements of the Boston and Lowell, Boston & Worcester, and Western Rail Road are for the year ending Nov. 30th, 1847; that for the Eastern Rail Road is for the year ending Dec. 31st, 1847; and that for the Boston & Providence Road for one or other of those dates. For the Georgia Rail Road the statements are for the year ending March 31st, 1848.

The statements for the Baltimore and Ohio Railroad include the cost of its expensive horse power establishment, which the other roads are not burdened with. Excluding this, the expense per mile run on this road is but 68.5 cents, and per passenger per mile, 1.030 cents, and per ton per mile, 1.759 cents.

The rate per ton and per passenger per mile for the Baltimore and Ohio Rail Road, in the above table, is different from and higher than that shown in table K. This is owing to the different way of dividing the expenses between passengers and tonnage, adopted in that table, and to the subtraction of a part of the apparent current expenses, and their treatment as "capital," in making up the statements of that table.

The proportions upon the several roads of engines in use on the road to those under repair and unemployed, are stated in the preceding report. See page 31.

neering formulas and calculations of wheel size and strength. This is the first known use of a technical illustration in U.S. corporate annual reporting. As Graves et al. [1996, p. 76] pointed out, the inclusion of pictures in annual reports was a rare phenomena until the 1940s.

INFLUENCE AND IMPACT OF B&O ANNUAL REPORTS

The B&O annual reports appear to have been prepared with a candor and openness on the part of management that are consistent with a relationship established between a company and an investing public supportive of the company's origin and purposes. There was a "common ground," the personal and public benefit from having this mode of transportation succeed. Details of operations, innovations, and discoveries were freely shared. But, not only did management communicate with stockholders, it informed all members in this new industry of its discoveries and innovations. This openness was hailed and appreciated. The editor of the *American Railroad Journal* stated in 1835:

We acknowledge the favor by the President of the Company, of a copy of the Ninth Annual Report of the Baltimore and Ohio Rail Road Company, and cannot refrain from here expressing our own, and we believe the thanks of the entire Rail Road community, as well in Europe as in America, for the candid, business-like liberal manner, in which they annually lay before the world the result of their experience.

It will not be saying too much, we are sure, to nominate them the Rail Road University of the United States. They have labored long, at great cost, and with a diligence that is worthy of all praise in the cause, and what is equally to their credit, they have published annually the results of their experiments, and distributed their reports with a liberal hand that the world might be cautioned by their errors and instructed by their discoveries. Their reports have in truth gone forth as a textbook, and their road and workshops have been a lecture-room to thousands who are now practising and improving upon their experience. This country owes to the enterprise, public spirit and perseverance of the citizens of Baltimore, a debt of gratitude of no ordinary magnitude, as will be seen from the President's report in relation to their improvements upon and performances with their locomotive engines, when compared

with the performances of the most powerful engines in Europe, or rather in imagination, in 1829, only six years ago [Hungerford, 1928, Vol. 1, p. 112].

As Hungerford noted, much of the detailed engineering information about such things as engine comparisons, plate-wheel inventions, switches, and turntables was technically beyond the level of knowledge or interest of shareholders. Yet these details of B&O experiments and innovations were invaluable to engineers and mechanics of other railways, and undoubtedly these disclosures advanced the industry. As the editorial suggests and Hungerford echoed frequently in his volumes, the B&O was truly a “railroad university,” sharing the results of its experiences through the “textbook” of its annual reports.

The B&O’s innovations and developments in financial reporting and disclosure influenced other railroads just as its technological advances did. By the 1850s, other railroads followed the B&O pattern of referencing financial statements as statement (A), (B), etc. Examples of other principal roads whose reports are similar to the B&O model include the Illinois Central (1855), the Delaware, Lackawanna & Western (1856), and the Louisville & Nashville Railroad (1860).

Similarly, the 1849 Delaware, Lackawanna & Western Railroad, the 1856 Illinois Central Railroad, and the 1860 Louisville & Nashville Railroad emulated the B&O practice of including the reports of the chief engineer and the general superintendent as part of their annual reports. While not conclusive, this evidence is consistent with the B&O’s leadership practices in the railroad industry and the “railroad university” view.

Assessing the Importance of B&O Reports: By 1860, 30,000 miles of railroad were operational in the U.S., representing about half of the known mileage in the world [Ratner et al., 1993, p. 330]. The B&O was the first among these roads to address the needs of investors for information to sustain the unprecedented scale of public-capital investment. This important early 19th century venture, marveled at because of its feats of engineering and technology, has only begun to be examined from the perspective of its contributions to accountancy, reporting and disclosure, cost control, and financial management.

The B&O can be identified with several important innovations. It was America’s first railroad operating regular passenger and freight service. It was America’s first big-business enterprise, with over \$30 million invested in construction by the

1850s (dwarfing the Erie Canal's cost of \$7.6 million to complete in the mid-1820s). The B&O was a technological innovator, experimenting with steam-powered locomotion (e.g., the *Tom Thumb*) and the development of multiple-wheeled engines and cars that rode on axles using a flange-rail design. It employed the first telegraph to operate the railroad and developed the first coal car, supporting development of that energy source to fuel an industrial revolution.

The B&O was inventive in other important organizational ways. It developed a management structure that allowed it to run a far-flung, multitasked, complex enterprise with the precision and efficiency for which railroad transportation became known. Financial reporting and accounting innovations were also produced by this early 19th century "high-tech" organization. Among our most important findings is that the B&O accounting system was oriented to producing financial statements as opposed to the accounting practice of the period which emphasized record keeping as the objective of the accounting system. This observation is consistent with Chatfield's [1974, p. 222] hypothesis that by the 1840s, financial statements had become the focus of the accounting system. This development became reflected in the accounting textbooks of the day. Information, rather than mere record keeping, became the output of the B&O's accounting system, a significant innovation to accounting practice in America during this pre-Civil War era.

This archival research has found annual report disclosure being employed to fulfill a stewardship obligation. However, stewardship is only one aspect of disclosure. Performance analysis presentations and resource allocation decisions of management are conveyed to the owners in these reports. The information detailed by the B&O even goes beyond these objectives. Much information is about internal operating activities of use to middle managers; other information is highly technical and complex, not comprehensible to individual investors but "textbook" material for engineers of other railroads.

Even considering a late 20th century view, the amount of disclosure, the types of disclosure, and the candor of these early reports, rendered when details of disclosure were voluntary, are impressive. Practical managers, trained in engineering, developed insights into cost accounting, which advanced accounting from its double-entry bookkeeping function to a tool for management for evaluating, planning, and controlling an enterprise. Internal control and comptrollership departments also were

instituted to safeguard assets and to process large volumes of transactions for timely, useful reports to manage operations. New ideas in financing (e.g.; using a forerunner of preferred stock, using retained profits as a financing source, issuing stock dividends) were used or described in its reports. Innovations in reporting included the income (operating) statement, which evolved from statements that quantified the number of passengers and the amount of freight moved and the expenditure statements, and a balance sheet, which evolved from a history of right-of-way ownership, to a "T" format of debit and credit listings of accounts and balances, to a near-modern form. A "retained earnings" statement appeared when the retention of profits proved to be a very important source of financing. B&O innovations—technological, organizational, and financial—were prototypes not only in the railroad industry, but also for the manufacturing companies that would emerge during the following decades.

FUTURE RESEARCH

This study is exploratory and preliminary. It examined one company, albeit a leading one, for the first 30 years of its 130-year life. Numerous issues have been raised, but resolutions must be left for future work. Certainly, a careful examination of other contemporary railroads' disclosure practices can provide insights as to the B&O's influence, as well as the influence of other railroads upon the B&O. British railroads of the period are one added area worthy of research attention because of their likely influence upon the B&O. European capital markets and information requirements are important to an in-depth understanding of the B&O's disclosure practices. American canals are a forerunner and a model for railroad development; this industry's accounting practices may offer greater insight into railroad reporting and may push the understanding of corporate financial accounting back a few decades further.

For the B&O itself, there is more work to be done; the minutes of directors' meetings and other company documents will certainly lend insight to the disclosures made in the annual reports. Further analysis of the management organization structure and the cost accounting developments of the B&O would give insight into how information was used to manage railway operations. Financial accounting at the B&O during and after the Civil War until the start of the 20th century offers another research direction.

A critical perspective of the B&O's disclosure practices may also prove to be a worthwhile stream of research. Certainly, points made by the paper as to the voluntary nature of disclosure by B&O's management can be challenged and examined in light of the charter's mandate that a statement of affairs be published annually. A second critical area is in the management attitude and disclosure of labor practices, problems, and worker safety issues. Strikes and violence in 1831 by unpaid workers, which precipitated the calling out of troops to suppress the strike, received relatively little mention in the annual report.

Other critical issues relate to railroad safety and environmental concerns. The 1855 annual report revealed for the first time the extent of how dangerous railroad construction and operations were for bystanders, passengers, and employees. Sixty-one deaths were reported. The company seemed only concerned over passenger safety. Deaths and dismemberment of employees and bystanders appeared not to have been a responsibility which management was willing to shoulder. This accident report was only issued once, with only the mention of casualty statistics again four years later. Neither fires nor environmental problems caused by railroad operations were mentioned in the first 30 annual reports. These, like the safety and labor problems, were not issues disclosed fully to outside investors. A 20th century view would find such disclosures significant. However, critics should view these shortcomings as reflective of 19th century management practice.

Finally, the issue of why the management of the B&O underestimated the cost of construction and the related timetable of the project, its impact as to a more immediate impression of success and the facilitation of capital funds, is left to future research. Thus, there is much interesting work to be done using the B&O's financial data as the foundation for historical research in accounting, business, and economic history.

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