

Paper as a Critical Commodity During the American Revolution

THERE was a paper shortage in the American colonies even before the Battle of Lexington, but it grew more serious as the war progressed and the need for paper increased. Prior to 1765 most of the paper used in the colonies was imported, and the struggling colonial paper mills, mostly located in Pennsylvania, were not able to meet the needs of the growing colonies. Therefore, when the merchants and colonial assemblies passed nonimportation agreements following the passage of the Stamp Act in 1765 and the Townshend Acts in 1767, the shortage soon became serious.

By 1775 the residual of imported paper was nearly exhausted, and the fifty-three paper mills located in the colonies were soon found inadequate to the demands made upon them. Evidences of this shortage of paper are found in governmental documents, military orders and correspondence, publications of all kinds, and in the personal correspondence of the colonists.

To meet the need the paper makers, the colonial governments, and even the Continental Congress took action to augment the output of paper. On July 19, 1776, the Continental Congress passed a resolution "that the paper makers in Pennsylvania be detained from proceeding with the associators to New Jersey,"¹ where patriots were joining the armed forces. In the following month the Continental Congress faced an emergency in the shortage of paper for currency. The stock of paper at the Ivy Mills, built by Thomas Willcox and Thomas Brown in 1729 near Philadelphia, on which the Continental currency had been printed, was entirely exhausted. Even more serious was the fact that the English-made paper molds used at the Ivy Mills were so badly worn as to be worthless. Nathan Sellers was the one man on whom Willcox depended to reface the paper molds, and a search for him revealed the fact that he had

¹ Worthington C. Ford, ed., *Journals of the Continental Congress* (Washington, D. C., 1906), V, 593.

joined the Army and was on his way to Long Island. Realizing the seriousness of the situation, several paper makers joined Willcox in a petition to the Continental Congress asking that Sellers be ordered to return to construct the necessary molds and other tools of the trade. The petition was granted, and Sellers returned home on September first. Two days later he was busy brassing and water-marking the molds for Willcox's Ivy Mills. The emergency led to the decision of the Continental Congress to own the molds upon which the paper for the currency was made, and Sellers was therefore hired directly by the Congress to prepare them. A page from the account book of Nathan Sellers shows that he spent part of September, October, and November of 1776 on these molds.²

Paper for the currency of the Continental Congress continued to be made at the Ivy Mills, which also supplied the Congress with other types of paper for its records and correspondence. So far as could be ascertained, the Continental Congress did not again suffer for lack of paper. Meeting in Philadelphia, it was near the largest supply of paper in the colonies. Its order restraining the Pennsylvania paper makers from joining the Army was emphasized by the Council of Public Safety of Pennsylvania in a resolution passed on August 9, 1776, calling attention to this order of the Congress and notifying all officers of the State "to pay a strict regard to the same."³ Hence the paper mills of the vicinity were not immediately faced with the problem of a shortage of skilled workers, as were the paper mills in most of the colonies.

As early as May 15, 1775, the Provincial Congress in Massachusetts acted upon a petition of James Boies and Hugh McLean, owners of the paper mills at Milton, Massachusetts, that the four apprentices recently enlisted in the militia be released from service and sent back to the mills, as they "have attained to so great a knowledge in the art of paper making that their attendance in the business is absolutely necessary to its being carried on." The Provincial Congress the following day

Resolved—that the prayer of the within petition—Be so far granted, that considering the small number of persons within the colony who carry on the manufac-

² Joseph Willcox, *Ivy Mills, 1729-1866* (Philadelphia, 1917), 11 f.

³ Minutes of the Council of Safety of Pennsylvania, *Colonial Records* (Harrisburg, 1851-1853), X, 680; hereafter cited as *Colonial Records*.

tory of paper, and the great Demand and Necessity of that article for the use of the said Colony, that the petitioners be desired to apply to General Thomas, that he may order the within named four soldiers to serve the public in carrying on the manufactory of paper at the said petitioners paper works at Milton.⁴

On the same day, the Provincial Congress of Massachusetts ordered a prisoner at Worcester, who was a paper maker, to be released and sent to the paper mill.⁵

The paper makers in New York also petitioned the provincial government for the exemption of themselves and their workers from military service. Charles Loosley and Thomas Elms submitted a lengthy petition to the Provincial Congress of New York on May 29, 1776, for their personal exemption from military duty and particularly from the fines to which they were subject and the "penalty of being advertised and held up as enemies to the country." This petition was tabled while the whole problem of exemptions for several types of workers was being studied.⁶ In August, 1776, John Holt joined Charles Loosley and Thomas Elms in renewing the petition, and the Provincial Congress, meeting at Harlem, August 12-21, passed a resolution exempting workers in certain industries from military service. Among those mentioned were "The Master workman, and two attendants at each papermill."⁷

In 1778 the Rhode Island Provincial Congress voted to exempt from military duty all persons engaged in the manufacture of military stores and other articles for the use of the colonies, and paper was classed under this head.

In New England and the southern colonies, where there were few if any paper mills, the colonial governments offered encouragement to anyone who would develop the industry. In Massachusetts, where there were four inadequate paper mills that were kept running only with the greatest difficulty, the delegates from Worcester County,

⁴ Albert Kendall Teele, *The History of Milton, Mass., 1640 to 1887* (Boston, 1887), 377.

⁵ William Lincoln, ed., *Journals of Each Provincial Congress of Massachusetts, 1774-1775* (Boston, 1838), 549.

⁶ Peter Force and M. Clarke, eds., *American Archives, Fourth Series* (Washington, D. C., 1848-1853), VI, 615.

⁷ *Calendar of Historical Manuscripts Relating to the War of the Revolution in the Office of the Secretary of the State of New York* (Albany, 1868), I, 459.

meeting in Worcester, enacted the following resolution on May 31, 1775:

Resolved; That the erection of a paper mill in this county, would be a great public advantage, and if any person or persons will undertake the erection of such a mill and manufacture of paper, that it will be recommended to the people of the country to encourage the undertaking by generous contributions and subscriptions.⁸

In order to give wider publicity to the above act, Isaiah Thomas published a notice in his newspaper that "Any persons that will incline to set up that useful Manufactory the making of Paper, may hear of one who will undertake to give directions for building the Mill, and will carry on the business."⁹

In response to this appeal, Abijah Burbank of Sutton undertook to establish a mill. In June, 1776, he produced samples of ordinary coarse paper, and a little later he announced in *The Massachusetts Spy* that he had obtained the services of a skillful paper maker, "and hopes for the future (provided the good people of this county will be careful to save their Rags) to be able to supply them with as good Paper as any Paper Maker in the State and at least as cheap."¹⁰ Burbank's mill was the first paper mill in western Massachusetts, and the fifth paper mill to be built within the present limits of the state. It was considered to be one of the best-equipped mills in the colonies, having two vats and two hollanders with rolls two feet long and twenty-six inches in diameter. Its capacity was between four and five thousand sheets of demy paper per day.

With the outbreak of the war, the people of New Hampshire found it increasingly difficult to get paper from the other colonies, and they had yet established no paper mill of their own. On November 28, 1777, therefore, the provincial government of New Hampshire heard and took action on the petition of Richard Jordan of Exeter, whereby £200 of "public monies" were lent to him "for the term of two years without interest for an encouragement to carry on the paper business within this State."¹¹ Before a year had passed,

⁸ Lincoln, 65.

⁹ *The Massachusetts Spy*, July 5, 1775.

¹⁰ Ellery B. Crane, "Early Paper Mills in Massachusetts, Especially Worcester County," *Collections of the Worcester Society of Antiquity*, VII (1885-1887), *Proceedings* (1886), 120.

¹¹ Isaac W. Hammond, ed., *Provincial and State Papers of New Hampshire*, Vol. XVIII, *Miscellaneous, 1725-1800* (Manchester, N. H., 1890), 721.

the paper mill had been built and was in need of help in gathering enough rags to keep it going to full capacity.

Ebenezer Watson and George Goodwin, publishers of the *Connecticut Courant*, established the second paper mill in Connecticut at East Hartford in 1775. This mill not only supplied the paper for 8,000 copies of the newspaper per week, but also made most of the paper used in the state and sent paper to the army and the Continental Congress.¹² On January 27, 1778, the paper mill was completely destroyed by fire. Within a week, the General Assembly of Connecticut had met and approved a plan for raising the money for the immediate rebuilding of the mill. The resolution granted to Sarah Ledyard and Hannah Watson, owners of the paper mill at Hartford, the "liberty, and authority . . . to set up and cause to be properly drawn a lottery at their risque and charge, to raise a sum not exceeding fifteen hundred pounds, money, to be to the memorialists in proportion to their loss sustained in said mill. . . ." ¹³ The lottery was highly successful, and the paper mill was rebuilt in a few months.

In the southern colonies it is doubtful if there were any paper mills built before 1776, although in 1775 both North and South Carolina had offered bounties to anyone who would build such a mill within their provinces. A resolution to this effect was passed by the Legislature of North Carolina on Sunday, September 10, 1775:

Resolved, That a premium of 200 and fifty pounds be given to the first person who shall erect and build a mill for manufacturing of Brown, whited Brown, and good writing paper, and which mill shall be actually set to work and Thirty Reams of Brown, thirty reams of Whited Brown, and thirty reams of writing paper, at least be produced to the Provincial Council, and approved of by the said council within eighteen months from this time. . . .¹⁴

A mill was built by John Holgan in 1777, in response to this offer, and public announcement was made of the fact in the issue of the *North Carolina Gazette* of November 14, 1777.

By our unhappy contest with Great Britain, and the Necessary Restrictions on our Trade, Paper has been an Article for which we, in this State, have much suffered

¹² James Leander Bishop, *A History of American Manufactures from 1608-1860* (Philadelphia, 1864), I, 205.

¹³ Charles J. Hoadly, ed., *Public Records of the State of Connecticut* (Hartford, Conn., 1894-1922), I, 503.

¹⁴ William L. Saunders, ed., *State Records of North Carolina, The Colonial Records* (Goldboro, N. C., 1886-1890), X, 217.

for though there are many paper mills in the Northern Colonies, where paper is made in great Perfection, yet, by the Interruption of the Colony Trade by water, the Southern Colonies have experienced a great Scarcity of the necessary Article. To remedy this Evil and throw in their Mite towards the Perfection of American Manufactures, the Proprietors of a Paper Mill just erected near Hillsborough, in Orange County, give Notice to the Public, that their Mill is now ready to work, and if a sufficient Quantity of Rags can be had, they will be able to supply the State with all Sorts of Paper.¹⁵

Since Holgan was unable to produce enough paper to meet the stipulated requirements for the premium, the state Legislature extended the time until the first of February, 1777.¹⁶

The Provincial Congress of South Carolina in November, 1775, offered £500 currency as a bounty to the first person who would erect a paper mill within the province, but there is no evidence that anyone accepted the offer.¹⁷ On March 22, 1776, however, William Bellamy appeared and offered to build a mill for making paper and files if the Congress would lend him sufficient money. The matter was considered and the following resolution adopted:

Resolved, That the sum of three thousand Pounds, currency, be advanced to the said William Bellamy out of the Colony Treasury, on loan, for the term of five years, free of interest, in consideration and for the express purpose of his forthwith erecting a proper mill for making Paper and cutting Files, in as great perfection as in any part of Europe: he, the said Bellamy, giving undeniable security to . . . Commissioners of the Colony Treasury for the performance thereof, and for repayment of the same sum into the said Treasury, by the expiration of the said term of five years.¹⁸

In the same year the Maryland Convention, acting on the recommendation of a committee that had been set up to devise ways and means of developing the paper industry in the province, on Saturday, May 25, 1776, passed a resolution advancing "400 pounds, common money" to James Dorsett of Baltimore County for two years without interest to build a paper mill. The payment of the loan was to be made "either in cash or Writing or Cartridge Paper," as the provincial government should direct.¹⁹

¹⁵ *North Carolina Gazette*, Nov. 14, 1777.

¹⁶ Walter Clark, ed., *State Records of North Carolina* (Goldsboro, N. C., 1909-1914), XII, 875.

¹⁷ *American Archives, Fourth Series*, IV, 72.

¹⁸ *Ibid.*, V, 606.

¹⁹ *Ibid.*, 1600.

The provincial governments of three colonies also voted to have official rag collectors appointed to assist the paper makers in acquiring sufficient raw material to keep their paper mills in full production. In Massachusetts, the records of the House of Representatives include the following resolution for February 16, 1776:

Whereas, the Colony cannot be supplied with a sufficient quantity of Paper for its own consumption, without the particular care of its inhabitants in saving rags for the Paper-Mills:

Therefore, Resolved, That the Congress of Correspondence, Inspection and Safety, in the several Towns in this Colony, be, and they hereby are required immediately to appoint some suitable person in their respective towns, (where it is not already done) to receive rags for the Paper-Mills; and the inhabitants of this Colony are hereby desired to be very careful in saving even the smallest quantities of rags proper for making Paper, which will be a further evidence of their disposition to promote the publick good.

In Council: Read and concurred.²⁰

The Pennsylvania Committee of Safety, on January 30, 1776, sent an advertisement to the printers of Philadelphia announcing to the inhabitants "that in the course of next week persons properly authorised under the hand of the Secretary of the Committee will call at their houses to receive the rags that were so greatly needed by the papermakers of the vicinity."²¹ And on November 11, 1778, the provincial Legislature of New Hampshire, having recently made a loan to Richard Jordan of £200 to build a paper mill in the province, passed a resolution for the appointment of rag collectors in the "several Towns and places in the State," similar to the resolution passed by the Massachusetts House of Representatives.²²

Private citizens also endeavored to meet the problem of the paper shortage. At least six paper mills were built during the war years by private enterprise. Dard Hunter has established the fact that William Hoffman worked in a paper mill near Baltimore before 1776, when Dorsett established his mill by public loan. However, little information is available and it is probable that the mill was discontinued early in 1776.²³ A third paper mill was built in Connecticut, at New Haven, in 1776 by Thomas and Samuel Green, printers. Two paper

²⁰ *Ibid.*, IV, 1308.

²¹ *Ibid.*, 1562.

²² Hammond, 802.

²³ Dard Hunter, *Papermaking: The History and Technique of an Ancient Craft* (New York, 1947), 505.

mills were built in New Jersey. From an advertisement in the *New York Gazette and Weekly Mercury* of April 15, 1776, we learn that William Shaffer at the Spotswood paper mill "Wanted, One or two Journeymen Paper-Makers, . . . Also a new Paper Mill to let, with a Farm belonging thereto, for a moderate Rent." The other paper mill built in New Jersey was located at Trenton. It was "now nearly compleated" when Stacy Potts and John Reynolds, owners, advertised for rags on December 23, 1778.²⁴ In 1780 Samuel Thurber established the second mill at Providence, Rhode Island, and began advertising for rags.²⁵ John Waterman, who had established the first paper mill in the colony, died in 1777, and his mill was closed down for a time, but in 1779 John Olney Waterman, his son, was again advertising for rags.²⁶ The only other paper mill built during the period about which we have found any real evidence is a wallpaper manufactory built in Philadelphia, which was advertised in the *Pennsylvania Packet* on May 27, 1775, as "A New American Manufactory" by Ryves and Fletcher, paper stainers.

The owners of the paper mills had two almost insurmountable obstacles to overcome. Their most insistent need was that of obtaining a sufficient quantity of raw material—*i.e.*, rags, rags, rags!—to keep their mills in full production. Their second problem—that of obtaining skilled workers—was even more critical, for when the services of skilled paper makers could not be had, the paper mills had to be shut down.

In spite of the aid from bell carts, official and unofficial rag collectors, pronouncements from governing bodies and repetitious advertising in newspapers and almanacs, there seems never to have been enough rags. Advertisements for rags appeared in nearly every issue of every newspaper and almanac published in the colonies during the period of the war. Most of these were short advertisements of from four to eight lines, but when there was space enough or the need was particularly acute, the advertisements were more elaborate. Isaiah Thomas' advertisement in *The Massachusetts Spy* for March

²⁴ *New Jersey Archives, Documents Relating to the Revolutionary History of the State of New Jersey, Second Series* (Trenton, N. J., 1903), II, 604-605.

²⁵ *Providence Gazette*, Aug. 19, 1780, and subsequent issues.

²⁶ *Ibid.*, Feb. 8, 1777, Apr. 13, 1779, and subsequent issues.

18, 1779, is such a one. It evidently was well received, for it was copied in part by several other newspapers.

RAGS

It is earnestly requested that the fair Daughters of Liberty in this extensive Country would not neglect to serve their country, by saving for the paper-mill in Sutton, all Linen & Cotton and Linen Rags, be they ever so small, as they are equally good for the purpose of making paper, as those that are larger. A bag hung up in one corner of the room, would be a means of saving many which would otherwise be lost. If the ladies should not make a fortune by this piece of economy, they will at least have the satisfaction of knowing they are doing an essential service to the community, which with twelve pence per pound, the price now given for clean white rags, they must be sensible will be sufficient reward. Cash given for Rags by I. Thomas.

In the *North Carolina Gazette* of November 14, 1777, an appeal for rags was added to the announcement of the establishment of the paper mill.

. . . As this undertaking is Novel, saving of Rags may perhaps be thought too trifling, and below the Notice of the good Matrons of the State, but when they consider they are aiding and assisting in necessary Manufacture, and when the Young Ladies are assured, that by sending to the Paper Mill an old Handkerchief, no longer fit to cover their snowy Breasts, there is a Possibility of its returning to them again in the more pleasing form of a Billet Doux from their Lovers, the Proprietors flatter themselves with great Success. . . .

The price paid for rags varied from two to four pence per pound in most of the colonies. Abijah Burbank at Worcester, Massachusetts, however, continually raised the amount he offered for rags until he was paying ten shillings per pound in 1781.²⁷ Besides "hard cash," he offered "writing paper, Bonnet paper and pins" in return for rags. In Providence, Rhode Island, John Waterman offered to accept rags in payment "for debts in clothing," Fenner and White offered "Soap, Candles and any sort of paper," and Samuel Thurber offered "Sugar, Coffee, Tea, Chocolate, Indian and Rye Meal" and "Preference in Purchasing Paper."

The advertisements for skilled paper makers were not so numerous as those making an appeal for rags, but they were just as urgent. John Reynolds of Trenton, New Jersey, advertised for journeymen paper makers who would be entitled to "exemption from Military Duty" and would receive the highest wages.²⁸ The New Jersey paper

²⁷ Worcester Society of Antiquity, *Proceedings* (1886), 120.

²⁸ *Pennsylvania Gazette and Weekly Advertiser*, July 14, 1779.

mill located at Spotswood offered "Two and a Half Dollars per Week, and found in Meat, Drink, Washing and Lodging" to any paper makers who would work there, "Also a New Paper Mill to let, with a Farm belonging thereto for a Moderate Rent."²⁹

In Maryland, Goddard and Oswald made a similar offer and suggested that "A German with a small family would be agreeable. There is a house and a pretty meadow contiguous and belonging to the Mill."³⁰ At Hartford, Connecticut, Sarah Ledyard and Hannah Watson, having rebuilt the paper mill from the funds derived from the public lottery, advertised in several newspapers in the vicinity for skilled workmen. Other paper mill owners continued to advertise for skilled workmen throughout the period, offering "constant employ and good wages."

The paper makers of the period were readily distinguished from other laborers by their large red hands and stooped, often slanted shoulders. These characteristics resulted from the hand processes of the period, for although water power was used in several of the processes, most of the actual work of forming the sheets of paper was done by hand. Each sheet of paper was formed separately on the mold and handled at least five or six times before it was ready for shipment. From rags to paper generally took three months or more. Little wonder, with such crude processes and the lack of skilled workers and raw materials, that paper became one of the most critical commodities in the fight for freedom.

As was indicated earlier, the shortage of paper was recorded in nearly all aspects of colonial life. The scarcity of paper available to the publishers and printers was quickly reflected in the newspapers of the period. Issues were often delayed due to lack of paper, and they were printed on smaller, frequently half size sheets of paper for which the printer generally apologized. Subscription rates were raised and subscription lists closed.

The colonial armies felt the paper shortage as seriously as did the publishers, and frequently appealed to the Committees of Safety to aid them in procuring paper for order blanks, correspondence, and cartridges. Muzzle-loading guns were in common use, and the first cartridges were for this type of firearm. The cartridges consisted of

²⁹ *New York Gazette and Weekly Mercury*, Apr. 15, 1776.

³⁰ *Pennsylvania Packet*, Nov. 30, 1779.

a tube of paper the same diameter as the bore of the gun, filled with powder, and the ball or shot. The tube was sealed at one end, but merely folded and crumpled at the other. The soldier tore open the folded end with his teeth, discharged the contents, together with the paper, into the muzzle of the gun, and rammed home the powder, ball, and paper either with the ramrod or by striking the end of the musket on the ground. Several cartridge makers accompanied each regiment.

The following action of the Council of Safety of Pennsylvania was characteristic of many. On August 27, 1776, it passed a resolution

That Mr. Rittenhouse make application to the Paper Makers to supply the Commissary with a quantity of Musket Cartridge Paper.

A present Scarcity of Cartridge Paper makes it necessary for this Board to recommend to the Printers of this State to spare a quantity of paper to our commissary, Robert Towers, Esqr, for the purpose of making Cartridges.³¹

In spite of the aid given them by the Committees of Safety, the colonial armies frequently did not have enough paper to make cartridges. Bishop, in his *History of American Manufactures*, records the story of a gift of paper made to the Army just before the Battle of Brandywine by the paper makers at Ephrata in Lancaster County, Pennsylvania. "Messengers were dispatched to this mill for a supply of cartridges. The mill happening to be exhausted the fraternity who held their property in common generously placed at the disposal of their country, several two-horse loads of an edition of Fox's *Book of Martyrs*, then ready for the bindery. Samples of this 'literary ammunition' are still preserved in the neighborhood of the Battleground."³²

In the following year paper was so scarce that when the Continental Army entered Philadelphia in June, an advertisement was inserted in the newspapers asking every resident in the city to send all scraps and waste sheets of paper to the military camp. Since very little paper was sent in, soldiers were ordered to search the homes of residents, as well as various places of business. One group of soldiers in July, 1778, found 2,500 copies of a sermon by Rev. Gilbert Tenant on "Defensive War" in a garret of a house Benjamin Franklin had recently used as his printing office. The copies were taken and

³¹ *Colonial Records*, X, 701.

³² Bishop, I, 199.

most of them used for cartridges expended during the Battle of Monmouth.³³

Paper remained a critical commodity for a number of years after the Revolution, but with the coming of machine processes and the use of other raw materials, such as wood pulp, the industry grew rapidly. However, so essential is paper to the life of the nation, that World Wars I and II created serious shortages. Citizens were again urged to save every scrap of paper, newspapers were curtailed, magazine subscription lists were closed and many of the products of industry were diverted by governmental acts to the defense of our country—all of which is reminiscent of the part paper played in our first military struggle.

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³³ J. M. E., "Cartridge Paper in 1778," *The Historical Magazine*, VIII (1864), 151.