NOTES AND DOCUMENTS

A Manufacturer’s Apprenticeship:
The Journal of Charles Doak,
1902-1906

From the early years of the nineteenth century through the Great Depression, family firms were the building blocks of manufacturing enterprise in Philadelphia and the mid-Atlantic region. Whether operated as private proprietorships and partnerships or as closely-held corporations, such businesses generated the remarkable variety of goods that gave rise to the Quaker City’s reputation as the most diversified center of industrial production in the nation. Yet the very privatism of these family-based entrepreneurial ventures has made it difficult for historians to explore and document their development. New England’s pioneering textile corporations donated mountains of records to the Harvard Business School’s Baker Library, providing the raw material for dozens of admirable studies. While manuscript collections on the economic development of the middle states are held by the Hagley Library (Greenville, DE) and the Historical Society of Pennsylvania, they have not to date been exploited on a comparable scale. Thus, the donation of a turn-of-the-century Philadelphia textile manufacturer's Journal to the Archives of the Philadelphia College of Textiles and Science is a noteworthy event, for the jottings of young Charles Doak provide a rare interior view of the workings of a family firm.

Business records of all sorts are highly prized by the economic historian. Production and sales ledgers, letter and account books, trial balances all contribute to reconstructing the profile of a firm’s evolution. However, such documents only infrequently enable us to appreciate day-to-day activities on the shop floor, those social relations of production which underlie entries in company accounts. The special value of Charles Doak’s Journal lies here, for it covers the years from 1902-1906 when he was learning the family business by working his way through all the rooms of Kensington’s Standard Worsted Mill. Initiated into the mysteries of yarn manufacturing at the side of room bosses and superintendents, Doak noted the details
of production, problem-solving, and supervision for later reference. As the son of the proprietor, he was engaged in a “manufacturing apprenticeship” which would lead him toward partnership and eventual direction of the firm’s affairs. His Journal reveals both the workings of the mill and the process by which a proprietor-to-be was trained in the technical and interpersonal skills essential for the “practical manufacturer.”

James Doak, Jr., Charles’s father, had founded the Standard Mills at the close of Civil War. Parlaying his Navy war-bounty and an association with insurance broker William Arrott into a partnership handloom carpet enterprise, he caught the rising tide of the wool manufacture in the 1870s. When competition and labor struggles beset the carpet trades, James Doak shifted to production of worsted yard goods, reaching forward in the later eighties to manufacturing of clothing from his own fabrics. The market collapse of the 1890s brought yet another shift, as the Standard Mills backpedaled to specialize in worsted yarns. Mastery of this craft sustained the firm into the decades after the Second World War. At Arrott’s death in 1889, James Doak purchased his late partner’s share in the business for $80,000, testifying to the success of an accumulation strategy based on productive flexibility. Yet in 1898, when Charles graduated from Philadelphia’s Manual Training High School, the proprietor was 61 years old and the issue of family succession loomed large.

Charles’s apprenticeship commenced immediately with a year’s term in the “Wool Room,” tending to the needs of a cluster of highly-skilled wool sorters. These fiercely independent workers separated fleeces into different grades of raw wool for production, managing their own work process in the bargain. (Doak’s superintendent’s were given charge of manufacturing “after the sorting.”) Having learned to respect the “ways” and the skills of wool sorters, Charles was in 1899 dispatched to Drexel Institute for a three-year course in mechanics (principles of the steam engine, technical drawing, etc.). Upon graduation in 1902, he returned to the mill, laboring in each of its divisions over the next two years. Beginning in the engine rooms, Charles proceeded through the machine shop, carding room, combing, drawing, and spinning sections, finally being elevated to mill superintendent in 1904-05. Having completed his long preparation for proprietorship, having achieved a competence in, if not yet a mastery of, the technical and interpersonal
aspects of yarn manufacturing, Charles joined the family management team, serving as a roving quality-control engineer until he assumed the presidency of the firm on his father's death in 1916.

In the early years of the present century, the Standard Worsted Mills employed about 225 workers, two-thirds women, five or six room bosses, a bookkeeper/office manager and a superintendent. Charles's brother James Doak III and another man (Sam Hepburn) handled sales, while the proprietor oversaw the whole enterprise. The following selections from the Journal illuminate more the human than the technical relationships involved in production, but specialists familiar with the machinery and terminology of the worsted trade will find in its pages interesting and detailed treatments of production problem-solving.

In June of 1903, sparked by a walk-out of Fairmount yarn-spinners demanding shorter hours, tens of thousands of Philadelphia textile workers called a general strike. Perhaps best-remembered as the event that triggered "Mother" Jones's organization of the Kensington Children's March, dramatizing child labor in city mills, the strike affected the Doak mill during its first month. The walkout proved a failure, though dyers and some carpet workers held out into the autumn months:

**THE TEXTILE STRIKE**

Monday June 1st to _______. Lasted around 2 weeks at this Mill.

On June the first the mill ran up to ten o'clock when a very large majority went out, (none of the combers came in at all\(^1\)) and the mill shut down.

On Monday the eight of June the mill was started up in an attempt to get the hands in. On the previous Friday (pay-day\(^2\)) a notice had been posted to this effect. "These mills will start up Monday the eight. Any concessions made by the Manufacturers Protective Association\(^3\) will be given by us."

A few hands come in but not enough to start up the machinery, and at ten o'clock the engine was stopped again.

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\(^1\) Workers who attend the combs, the machinery central to worsted yarn spinning. Combs straighten the long fibers of raw wool and drop out shorter fibers, facilitating spinning of yarns that have a high tensile-strength-to-weight relationship, owing to their being composed exclusively of long fibers.

\(^2\) Pay-days were every two weeks at most Philadelphia mills. Thus all workers would return Friday June 5 to pick up their wages for the last week of May. Doak regularly made production analyses in terms of "pays," i.e. two-week periods.

\(^3\) This was a textile offshoot of the Philadelphia Manufacturers Club, itself a successor to the Textile Manufacturers Association organized to meet the challenge of the Knights of Labor in the later 1880s.
On Monday June the fifteenth a few hands were persuaded by J. Vogelman and T. Miller[4] to come in. Each succeeding day of this week, more came in, till on Monday the twenty-second a large majority started up, (all the combers except the Johnsons). Trouble was just avoided at one stage, Bill Anderson[5] come in on Friday the nineteenth and was told that his job was given to the fireman, but that he could work on the dryer, he left and the combers who had promised to come in Monday threatened to stay out. Anderson was pacified; and promised his old job back, if he would take the dryer, till everything was settled[,] at no monetary loss to himself. This brought him in together with the combers.

There are a great many things that can be seen and that need attending when the machinery is stopped.

It was noticed after the mill had been stopped a week, that the leather rollers on the [spinning] frames were screwed down hard on the steel rollers. When the mill started up several thing would go wrong. By the heavy pressure on the leather a hard flat place would have formed; every time this came in contact with the steel rollers the roving[6] would slip through, resulting in bad yarn. When complaints were made, and the spinners, [they said] the rollers were bad and Mullen did not have the time to cover them. They would not of course know why the covers were poor. Some of the rollers might be skinned up true, leaving however [the] hard place which would never regain its elasticity; . . .the majority of the rollers would have to be recovered, entailing a heavy expense for supplies and labor. . . .

At the time of the strike, Keim[7] had a large quantity of yarn coming to him and it was thought that he would be glad of a chance to get us in a fix. He asked for immediate delivery so an outside spinner—Hodson Bros. were engaged to make his yarn. [8]

Noteworthy here are the activities of overseers in sounding out "the help" about returning (and their success in this), the solidarity of the

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[4] Vogelman was superintendent, Miller a spinning room boss in 1903.
[5] The mill engineer. The fireman was likely promised his job as a reward for having started "the engine" on June 8 in the futile attempt to get the mill running after the first strike week.
[6] Soft partially-furnished yarn, slightly twisted before being drawn down and spun out to a finer finished product.
[8] Hodson Brothers was a smaller Kensington firm, recently started (c. 1898), which may have evaded the strike by accepting workers demands in late May. About fifty firms were reported to have done so (Philadelphia Record, May 30, 1903; Philadelphia Public Ledger, June 1, 1903). This passage drawn from Charles Doak, Journal, 1902-1906, Archives, Pastore Library Philadelphia College of Textiles and Science, pp. 150-1. (hereafter cited as Doak, Journal.)
combers with Anderson, whose demotion was averted, and the existence of a subcontracting connection by which a querulous customer could be satisfied. The use of down time to tease out mechanical problems is clear; elsewhere in the Journal Doak noted that during the shutdown he and the room bosses also replaced the sheets of wire teeth essential for smooth running of the carding engines (which stripped burrs and other waste from the raw wool). Discovery of the roller problem led Charles to add later comments on this matter:

ROLLERS (Spinning and drawing, top front rollers): We have always had trouble covering iron rollers so as to last any length of time.

John Vogelman was talking about them 10/23/04—Some years ago the iron roller faces were turn up on the lathe so they had a narrow rim on each side [. . . ] into this the leather was made to fit which prevent it from slipping off. . . . The leather was put on loose but glue together to make it endless. At the point of contact with the bottom roller it would always be tight. (Dearnley's used this method.)

While this fairly typical machinery passage may spark the interest of historians of technology, Charles was also a careful observer of matters outside the mill. Just as he recorded engineering snags, so too did he detail the problems that surfaced when his older brother left the office on a sales tour during an emergency:

SALESMEN: In April 1904, Hepburn was very ill and during his enforced absence from the mill, James took up that end of it.

On his first trip down East he got a 10,000 lb. order from Kent. In stating his conditions, he forgot to stipulate the freight as F.O.B. Philadelphia, and when Kent returned our first Bill he had deducted the freightage from Phila to Providence and finally forced James to accept those terms, viz. F.O.B. Providence.

In this same order that James got from Kent he forgot to acknowledge their written order. He discovered this in about a week and wrote to them. Always acknowledge orders.

Early in 1904, John Vogelman, superintendent, left the Standard Worsted Mills. His successor, a Mr. Rawnsley, proved a master of his

10 The Doak factory had its own machine shop for such work.
11 a Germantown worsted yarn firm located on Chelten Avenue. Passage drawn from Doak, Journal, 58.
12 Doak, Journal, 110.
craft. As the new "super" circulated through the factory, Charles Doak attended him closely, filling page after page in the journal with "Rawnsley's Alterations":

CHANGE IN BOSSES

John Vogelman left on Saturday Jan. 16, 1904 and on the following Monday Rawnsley took charge. He was made Superintendent of the entire mill the sorting room excepted. (Campbell\textsuperscript{13} controlled the engineers and firemen.)

2/12/04 Talking to Bill Blair\textsuperscript{14}, he said Rawnsley had made several changes in the Drawing Room, sacrificing production to quality. He reduced the number of ends at the gill boxes\textsuperscript{15} and to make up for this put up more ends later on. Bill also said that every new lot of wool that came up was looked over carefully by Rawnsley and the whole Drawing set accordingly.\textsuperscript{16} Bill also said, in talking about the cotton aprons that some of his girls who had worked in other mills where they used the cotton aprons, as [for example] Camerons, said they lasted 6 or 8 months longer than our leather ones. [NB: Rawnsley had ordered a shift from leather to cotton aprons.]

On Monday Feb 15th 04 Father told Rawnsley to get every spindle running as soon as possible. He told R. to get an overseer for the [currently idle] Farrar Room offering him $13 with an increase to $15 when everything was running full. . .R. thought he could get a man for this. As regards hands R. said his only trouble would be with the warpers, said that S. Flick\textsuperscript{17} could not get old hands back so would have to take learners.

3/21/04 R. had the machinist make guides for the back of the gill boxes.

This spreads the sliver\textsuperscript{18} at the back very evenly the whole length. . .This was a very good idea and improves the work.

Rawnsley left our employ on Saturday August 20, 1904. He suggested I be given the job, and Father gave it to me. I believe that R. suggested

\textsuperscript{13} Joseph Campbell was an orphan-student at Girard College whom James Doak, Jr. took on as an apprentice in 1881. He became "nearly a family member" and eventually served as the firm's office manager and treasurer. A copy of his indenture of apprenticeship is in the Doak Papers, Pastore Library, Philadelphia College of Textiles and Science. Quote from an interview with Charles' daughter, Elizabeth Doak Tarnay, October 25, 1983.

\textsuperscript{14} a spinning room boss.

\textsuperscript{15} the number of soft ropes of partially processed yarn being fed through an intermediate device used to prepare the wool for combing.

\textsuperscript{16} This resetting of the machinery took account of the varying quality of the raw wools sent through the production sequence. Altering the machine settings slowed output, but resulted in less waste and in better quality yarns.

\textsuperscript{17} a room boss.

\textsuperscript{18} a rope of carded wool ready for the sequence of gilling, combing, drawing and spinning.
this plan as he seemed rather expectant of coming back at some future date, and thought he would have more chance if I were super and not some outsider. [in pencil, a later addition] This must have been an erroneous impression of mine for most of the time R. was with us he had been planning to start a mill of his own which he did as soon as he got through here. He started the Lyon Mill at Angora\(^\text{19}\) with Mr. Binder, called the Lion Worsted Co. making floss yarn\(^\text{20}\) for a NY commission house. Binder is late of Tracey's.\(^\text{21}\)

Rawnsley impressed the room bosses with his comprehensive knowledge of yarn techniques, but was not set over the sorters or the engine room staff. He could secure new overseers readily and taught Charles the essentials of managing the whole system of production. (Before following Rawnsley about the mill, the young Doak had been touring it section by section.) His practical education closing with the Super's departure for a partnership enterprise of his own, Charles displayed both suspicion and ambivalence in his comments on Rawnsley's leave-taking. Following a virtuoso was a daunting assignment, and Charles documented his frustrations in the ensuing months with Journal pages labelled simply "Bad Spins."\(^\text{22}\) Relief of a sort came a year later, with the appointment of an experienced individual to manage the final stages of production, drawing and spinning:

SUPERINTENDENTS—Fred Haggus

Haggus started on Thursday Nov. 23, 1905 over all after the Combing. Started at $23.00 a week salary\(^\text{23}\) no over time allowed and no short time deducted except as agreed upon.

3/1/06 Haggus is a hard worker that is especially in chasing up help. He had a hard time getting sufficient help for 2 or 3 months after he came, but he followed them up nights, Saturdays and Sundays. He gives out a great line of talk and seems to get along very well with the hands. With the

\(^\text{19}\) in southwest Philadelphia

\(^\text{20}\) a specialty or "novelty" yarn

\(^\text{21}\) R C Binder had been Secretary of the Tracey Worsted Spinning Mills Co, another specialized yarn concern located at 2500 Spruce Street, Philadelphia He may well have been the financial partner, as Tracey's was capitalized at $300,000 at this time Rawnsley would apply his skills to managing production. This passage drawn from Doak, Journal, 82-86

\(^\text{22}\) Doak, Journal, 76-87

\(^\text{23}\) This figure was half again as much as was paid room bosses ($15 per week) All wool sorters also received $15 for sixty hours work plus a bonus of one cent for every eight pounds sorted above a standard "Task" of 5500 pounds weekly. Women and girls spinning earned much less, the $5.50 per week given for 1906 works out to just over nine cents an hour
Bosses he had a more difficult job. He fired G. Davies the latter part of Feb. and Harry Schappenthorn left in a week. Bill Williams the Roller Coverer is getting through this week. . . Anything Haggus says must be taken with a grain of salt.

[Added later, no date] Haggus left very suddenly with absolutely no notice leaving a few bad predictions and threats behind him. 24

The Superintendent who followed Haggus fared little better:

A.E. Schoon—Super.

Took charge of everything from the Drawing, included, on. Started Wednesday Morning May 9, 1906 though he was in the afternoon before. Boarded at Dorr’s Hotel 7th and Dauphin. . .

Friday Morning May 26/06 all the old room spinners 25 struck for $6.00 a week and went out [,] after Father, through Schoen had offered them 5.75 (regular rate 5.50). The Hall and Stell spinners went out at 12:30 this same day. When the Robinson girls came in for their papers 26 on [the following] Monday Schoen refused to give it to them until they had worked their notice. I believe through Campbell that they got them that same day.

On Tuesday July 3, 1906, A.E. Schoen had an altercation with James and he left at once, though amiably enough, taking 2 weeks pay with him beside his due. James put Billy Blair in charge and with Father's consent started to put the Mill on a good basis: throwing out the old double-heads, buying smaller caps for the Farrar Spinng to use with fine courts and etc.

When Charles gave over his superintendency to this pair of outsiders, he began his rounds as the mill's quality supervisor, filling in elaborate charts relating output to humidity, raw materials grades and other variables. His elder brother James evidently served as a general manager, always "with Father's consent," and upon the departure of the second "outsider" in less than a year, elevated a long-term room boss to the super's position. He likely hoped that this veteran Doak employee would have less tumultuous relations with the overseers (Haggus) and

25 The Doak mills had three spinning rooms, or floors, the "old room," the "Hall and Stell" and the "Farrar," the latter two named for the brands of machinery in operation there.
26 These presumably were "working papers" showing prospective employers both that the job-seeker had experience and that she had left her previous employment on good terms, i.e., after giving two weeks notice, usually. Clearly the Robinsons had not given notice, but were able to secure their "papers" through an end-run to the office manager.
the floor workers (Schoen), but Charles, busy with assembling his tables, commented no more on the activities of superintendents.

These brief fragments from the Journal of Charles Doak provide glimpses of an infrequently-seen world, the inner workings of a family firm as recorded by a "manufacturing apprentice." Doubtless, in the trunks and attics of regional manufacturing families lie its companion pieces, diaries, bundles of letters, scrapbooks and daybooks, which would deepen our appreciation of the vitality of the family firm as a business institution and a cultural legacy. The role in American economic development of great joint-stock corporations has been long stressed; to assess the real significance of the family firm's contribution to this process, we must await the re-discovery of treasures that will supplement Charles Doak's Journal.

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