

Keeping the Girls on the Line: The Medical Department and Women Workers at AT&T, 1913-1940

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Few trades can equal in their demands upon the human organism an occupation newly open to the girls and women of our generation.

-Josephine Goldmark, 1912¹

As American labor researcher and reformer Josephine Goldmark issued this alert regarding the dangers associated with telephone service work, the American Telephone and Telegraph Company (AT&T²) faced a potentially devastating dilemma. Having built her corporate image upon the alacrity and competence of her carefully selected and trained female operating corps, "Ma Bell" depended upon many thousands of experienced operators to meet the ever-increasing demand for telephone service in the early twentieth century.³ However, high turnover rates, labor unrest, and growing public concern that unhealthy working conditions imperiled the company's lady operators threatened AT&T's tenuous existence as an emerging voice communications monopoly. In order to gain the trust of both the public and the company's women workers, the managers at AT&T experimented with a number of solutions to their personnel problems. By far, the most successful was the creation of a benefit plan and corporate medical department. This innovation embodied ambivalent if not conflicting goals, including a desire to mold a compliant and efficient labor force while simultaneously protecting workers' health and safety. An examination of the first thirty years of AT&T's corporate medical department sheds considerable light on early twentieth century welfare capitalism and its meaning for women workers.⁴

The inauguration of the AT&T Employee Benefit Plan in 1913 marked the official beginning of the company's medical department. The plan provided sickness and disability benefits to injured workers and service pensions to retiring employees. AT&T was one of the first major corporate employers to volunteer benefits of this kind in what David Rosner and Gerald Markowitz have labeled "the compensation era." Between 1900 and 1917, all major industrial states enacted workmen's compensation laws based on the principle that injured workers deserved relief. Legislation regulating child labor and hours of work were also passed. These laws grew out of Progressive era demands for more systematic policies designed to limit the excesses of industrial

capitalism. By implementing benevolent plans of their own, large corporations like AT&T sought to influence the course of future labor reform.⁵

The medical department at AT&T served a number of important functions within the company. First, it played a central role in the administration of the employee benefit plan. As part of the personnel division, staff physicians performed pre-employment examinations on all prospective employees. These company doctors saved their employers untold sums of money by screening out individuals with life-threatening medical conditions or contagious diseases that could infect other workers. Industrial physicians also imparted preventive medical advice to insure that a worker's "health is so safeguarded and maintained that his life as a producing unit is prolonged to the maximum."⁶ They handled on-the-job accidents and examined employees returning from prolonged absences to determine the verity of their claims and to certify their readiness to return to work. These services saved the company enough money that, in most cases, "a factory doctor's salary costs less than nothing."⁷

More critical, however, than saving AT&T money through the proper administration of the benefit plan was the medical department's role in promoting the company's image as benevolent caretaker of its employees.⁸ Because the spread of wage work for women was the subject of intense national scrutiny, early twentieth century firms needed to provide evidence that they were in no way endangering their women employees. The Bell System medical departments provided this assurance. At a time when AT&T wanted to appear deserving of its contested position as a private telecommunications monopoly, rumors of the mistreatment of its telephone operators would have proved disastrous. Additionally, the medical departments offered the kind of care and attention that encouraged female employees to stay on the job.

When AT&T President Theodore Vail appointed a committee to design the Employee Benefit Plan in 1910, women comprised nearly sixty percent of the employment rolls. As a result, women's health concerns were a primary focus of the medical department from its opening in 1913. One of the first tasks it was assigned was to ascertain the cause for the company's unusually high turnover rate among its telephone operators. Properly trained and experienced operators were critical to the company's success. Because their operators spoke directly to the customer to determine the destination of his or her call, the Bell System needed operators who could project a genteel image. A brief but revealing experiment with male operators in the 1870s demonstrated that young men had neither the proper language nor the patience to be good operators. Therefore, only educated young women of good character who could speak clear English and comport themselves in a respectable manner were hired. Once hired, these young women endured the company's lengthy and rigorous training sessions that would prepare them to meet each phone call as

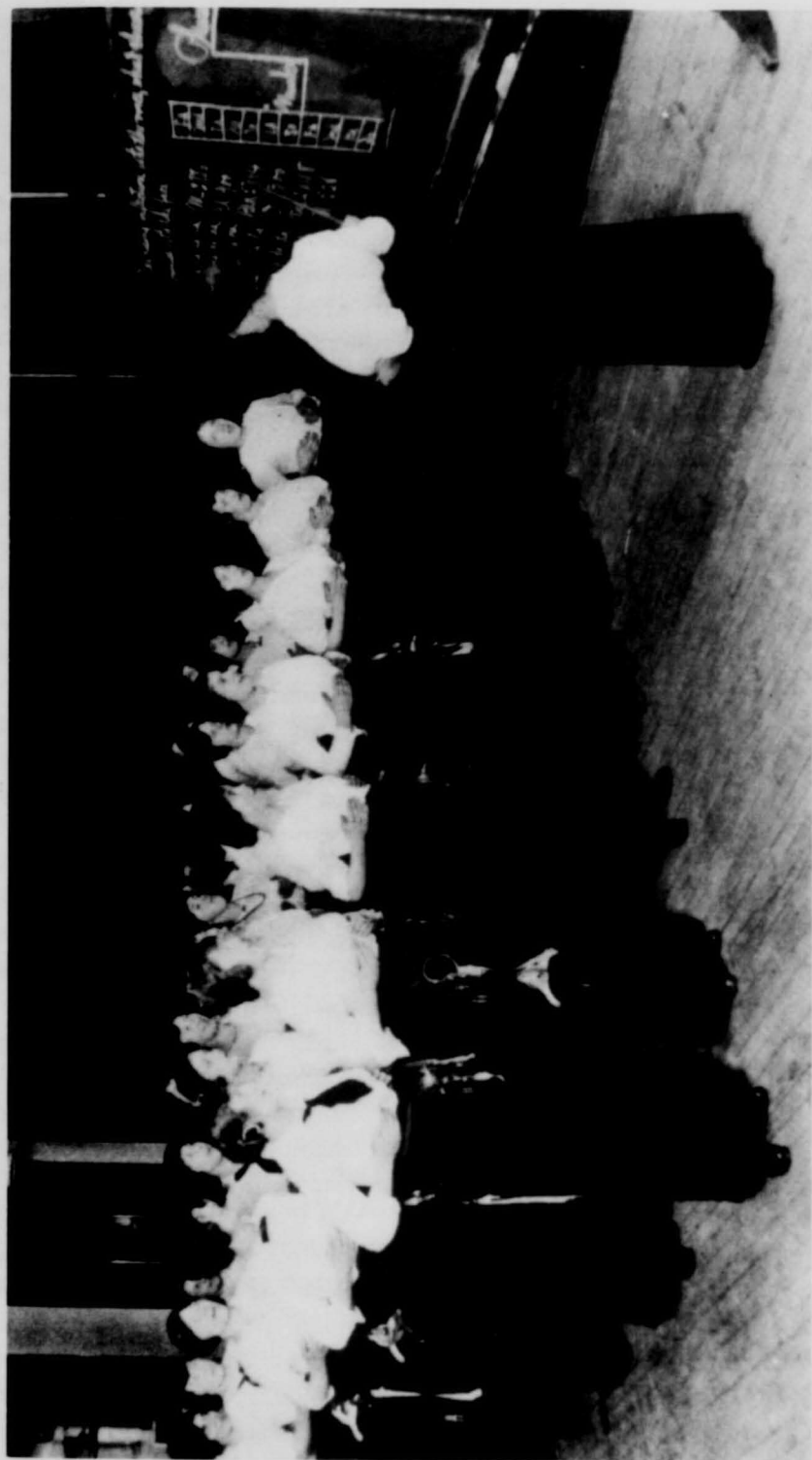
"the voice with a smile." It took several weeks just to train the telephone girls in the use of tongue, lips, jaws, and posture that would result in proper pronunciation and a tone of eager friendliness.⁹

Although there was an abundant supply of young unmarried women from middle-class and upwardly mobile working-class families available to fill these positions, the company preferred experienced operators over new recruits since the typical operator reached peak efficiency only after four or five years on the job. However, very few women stayed with the company that long. By 1920 only one out of every three telephone operator trainees remained in her position over a year.¹⁰ The highest levels of management at AT&T contemplated incentives to retain female employees including a savings fund with preferential interest rates paid to operators. The savings fund, however, did not appear adequate to convince young women to stay.¹¹ AT&T management then turned to the company medical departments for assistance.

Charged with identifying the cause for the high turnover rates among the Bell System's young female operators, the medical department investigated the health of the "telephone girls." In the course of pre-employment exams, AT&T physicians noted that poor health among new operators was often the fault of the young women themselves and could be corrected with their cooperation. A report submitted to the General Personnel Board suggested that "many of the girls are employed with minor defects, such as poor teeth, undernourishment, defective vision, overweight, colds, et cetera, which they might more readily be induced to correct or avoid after a Health Talk."¹² The Health Talk concept was implemented as part of the operators' training course throughout the various operating companies in the 1920s. In the 1930s AT&T offered a standardized Health Talk at all of the company's Operator Schools.

Under the aegis of the medical department and its mandatory pre-employment health inspection, the company was also able to investigate prospective employees' home living arrangements and thus to determine the character of the individual. The assumption was that the condition of the domicile and character were causally related. Women still living with their middle-class parents were the most desirable potential employees. This personal information was much easier to obtain through a visit from a company representative, such as one of the company's many visiting nurses. In its 1919 Annual Report, company officials noted that they hoped to adopt

some practical plan which would assure a closer and more informal contact between the managing officials and the other employees than is readily afforded by the regular channels of administrative organization. In these abnormal times...it has seemed more than ever essential to formulate some plan which would give to the



Operator Training Session

management of the companies a more intimate knowledge and appreciation of the personal problems of the individual employee.¹³

Visiting members of the medical department helped put these goals into action.

Medical department representatives were also charged with visiting employees on sick leave to determine if proper medical treatment was being given. Visits by representatives of the medical department no doubt discouraged malingerers or those seeking sick benefits without just cause. Western Electric officials required that "cases lasting beyond a reasonable maximum for the disease reported should be carefully investigated, by means of personal visits, examination by specialists, contact between the Medical Department and the employee's physician, or any other means appropriate in the particular case." Women employees received a disproportionate number of these visits because cases among female workers were consistently of longer duration than those among male employees.¹⁴

More threatening, however, than the notion that new female hirees might bring illnesses with them to the job-site was the idea that previously healthy employees might become sick as a result of their work. Increasing numbers of government-sponsored reports and independent inquiries looked into the potential hazards of telephone service work in the early 1900s. Four years before *Fatigue and Efficiency*, Josephine Goldmark's landmark study of physiological strain in modern industry, concluded that working for the telephone company placed prodigious strain on the senses and was disastrous to the nervous system, the United States Senate resolved to investigate working conditions in the nation's telephone companies. In the report that followed, Ethelbert Stewart, the Secretary of Commerce and Labor's special agent, noted that even though the telephone exchanges they investigated were "well housed, had ample space, were well lighted, and...were fairly well ventilated," telephone switching was physically and emotionally damaging. The reaching required to connect calls at the switchboard caused spinal curvature and the unusual hours of employment were believed to have deleterious effects upon digestion. Stewart's report also noted that telephone operators were subject to considerable abuse from subscribers and were forbidden by company policy to respond to the verbal attacks.¹⁵

The biggest health risk to the telephone operator herself, according to this government report, was the damage that would almost certainly be done to her nervous system. "For the nervous woman, the work is unsuitable, since the very nature of the work demands self-control and the ability to respond to sudden periods of rush work."¹⁶ During typical peak periods, operators manually connected between 250 and 350 calls per hour. From the moment the operator noticed a tiny flashing light signalling a subscriber lifted his or her

receiver from the hook and desired to make a call to the instant the light was extinguished and needed to be disconnected, the simplest form of telephone connection required no less than eleven separate processes on the part of the operator. Toll calls and nickel machine calls involved several additional steps.¹⁷ Operators were also held responsible for changes in subscribers' numbers and for keeping hand-written records of service calls. Meanwhile, in the prevailing spirit of scientific management, ever-present supervisors timed and monitored the speed, politeness, and accuracy with which operators completed calls. Efficiency records were kept for each operator and were reflected in her pay.¹⁸ As a result, very few operators received what was considered their full pay. In 1910 day operators at AT&T worked an average of nine hours while night operators in the Bell System reportedly worked fifteen hours per working day. Overtime was expected, rest periods were infrequent, and seldom could these women rely upon a regular weekly day for recuperation.¹⁹

As a result of their stressful conditions, many of the telephone operators experienced nervous exhaustion, anxiety, and fainting spells. These symptoms became so closely associated with telephone switching that they were labelled collectively as "telephone shock." Knowing that she had only a few seconds to answer each signal, the typical operator was "always nervous, always on edge...suffered from headaches, backaches, arm and eye strain. She knew that at any time she or one of the other operators might faint from exhaustion and be fired."²⁰ In the midst of a 1907 labor dispute between Bell Telephone of Canada and its operators in Toronto, physicians testified before a Royal Commission that "there is no other occupation that I have seen, in which women may be engaged, that occasions quite the same strain to the nervous system as this of telephone operating."²¹ Dr. William Bolton, a prominent physician in Toronto for thirty-one years at the time of his testimony, claimed that he had often seen nervous hysteria result from the nervous strain of telephone work. He recounted "a number of cases of young ladies whom I had known as the physician of the family, before they entered into the telephone service and were apparently healthy, after a length of service in the telephone office, I had to prescribe for them for various types of nervous debility, and my advice to the majority of them was to discontinue the work."²² Perhaps most worrisome was the testimony of several respected physicians which suggested, as in the words of Dr. John Noble of Toronto that "I think that after five years continuous work in the telephone office, with the hours and under the conditions that are existing there, that she would be disqualified to become a wife and mother. If we are to pile so much work on young women it will exhibit itself in the future generation."²³ These Canadian physicians agreed that if women were permitted to continue in the service of the telephone company, they should not do so under the current conditions.

These were extremely damaging charges in a period in which a woman's domestic role was glorified and the security of women was equated with the security of civilization.²⁴ Public opinion would deem such obviously strenuous conditions cruel, especially considering women's perceived proclivity for nervous disorders. Abraham Myerson, an important psychoanalyst, argued in *The Nervous Housewife* that working women suffered from a confusion of work and social roles. The result of that confusion was an epidemic of neurasthenia. Medical literature supported Myerson's claim by noting that "the wearing, incessant cares of overwork, of business anxiety, and the like produce directly diseases of the nervous system."²⁵ Several court decisions in favor of women employees suffering from nervous disorders confirmed that companies would be held accountable for illness resulting from working conditions. In the 1920s women successfully sued their employers for compensation for mental illnesses. Courts even rendered decisions in favor of women with personal backgrounds indicating a susceptibility to "neurotic manifestations." Such decisions were not surprising in an era noted for protective labor legislation for women. Working women made advances in labor struggles during the 1920s by cultivating moral outrage against their employers, not by exerting economic pressure. In numerous cases, the public was their valuable ally by holding employers responsible for their workers' health.²⁶

AT&T medical department physicians witnessed the impact of stressful working conditions first-hand as they examined women upon return from protracted disability leaves. Even at Western Electric, AT&T's manufacturing branch, ten percent of all sickness and disability cases among women employees were attributed to neurasthenia and anaemia.²⁷ If it became known to the general public that the Bell System threatened the health of its operators by exposing them to such stress, it might have stimulated a demand for the removal of women workers from the workplace. This would have been devastating to a company so dependent upon them. Public outrage could also have endangered AT&T's tenuous relationship with the federal government as the only private telecommunications monopoly.

Although previously a difficult group to organize, telephone operators were effectively organized between 1912 and 1920 because the rallying cry had shifted from issues of pay to the humanization of working conditions.²⁸ New England Bell learned during a 1919 walkout of telephone operators in Boston that in highly publicized disputes between the company and its operators, the public would wholeheartedly champion the women's cause.²⁹ AT&T could ill-afford much publicity regarding the potentially dangerous working conditions at its switchboards.

The medical department participated in a solution to the telephone shock dilemma that proved acceptable to a good many of its operators and kept the issue from garnering much adverse publicity. Medical and self-help literature



"Rest Room" for Telephone Operators.

suggested that rest and repose would yield a private restoration of the self's resources.³⁰ The Bell System installed lounges they referred to as "rest rooms" where its women employees could spend their lunch breaks and relax during requested rest periods. The medical department then carried this concept a step further.³¹ Believing that only after a supervised program of rest and isolation could victims of telephone shock return to work, AT&T acquired several company rest homes dedicated to the recuperation of its "traffic girls," or telephone operators.

At a 1926 General Health Course for women, a personnel director recounted the need for the purchase of company rest homes.

We found a great many of our girls suffering from no particular ailment, no organic disease, but a general run down condition requiring not so much medication, but a correction of habits of life, a proper amount of sunshine, food and rest, and what is perhaps more important, a proper view of life which could only be secured by taking them away from their customary environments and getting them into some such place as this....That led to the conclusion that a rest home, conducted by the Company, not as a commercial enterprise but as a means of maintaining health, was justified.³²

Comments such as these subtly deflected blame for their poor health from the company and placed it on the employees themselves. By removing telephone shock victims from their respective homes and work environments, parents and operators were spared the sight of their daughters' and coworkers' suffering. Medical department physicians accompanied afflicted operators to the rest homes and supervised the care of the recovering operators during their stay.

There is evidence to suggest that the stricken operators found the rest home experience enjoyable. Company newsletters reported the well-attended reunions of women who had been sent to rest homes to recover.

A reunion of all the employees who had sojourned at Cottage Green, Sunnycrest, Mendham, Brown's Mills and Devitt's Camp was held at Cottage Green, PA. The hostess, Miss Julia Connelly, had sent invitations to all the girls of the local company and the Long Lines who had been sent to various rest homes to recuperate and regain their health after serious illnesses'....As the girls walked in this garden, many remarks were made about the benefit they derived from their stay in the rest homes....The happy, smiling faces seemed to support a remark which was heard in the distance that 'These groups represent an actual gain of two tons in weight.'³³



Some of those at the Cottage Green (Philadelphia) reunion were, standing, left to right, the Misses Jennings, Reynolds, Foster, Connelly, Grubb, Foreman, Ward, McConnell, McPeak. Sitting, the Misses Keenan, Nyland, Rush, Wasleski, Fitzpatrick. Reunion of Telephone Operators at Philadelphia Rest Home.

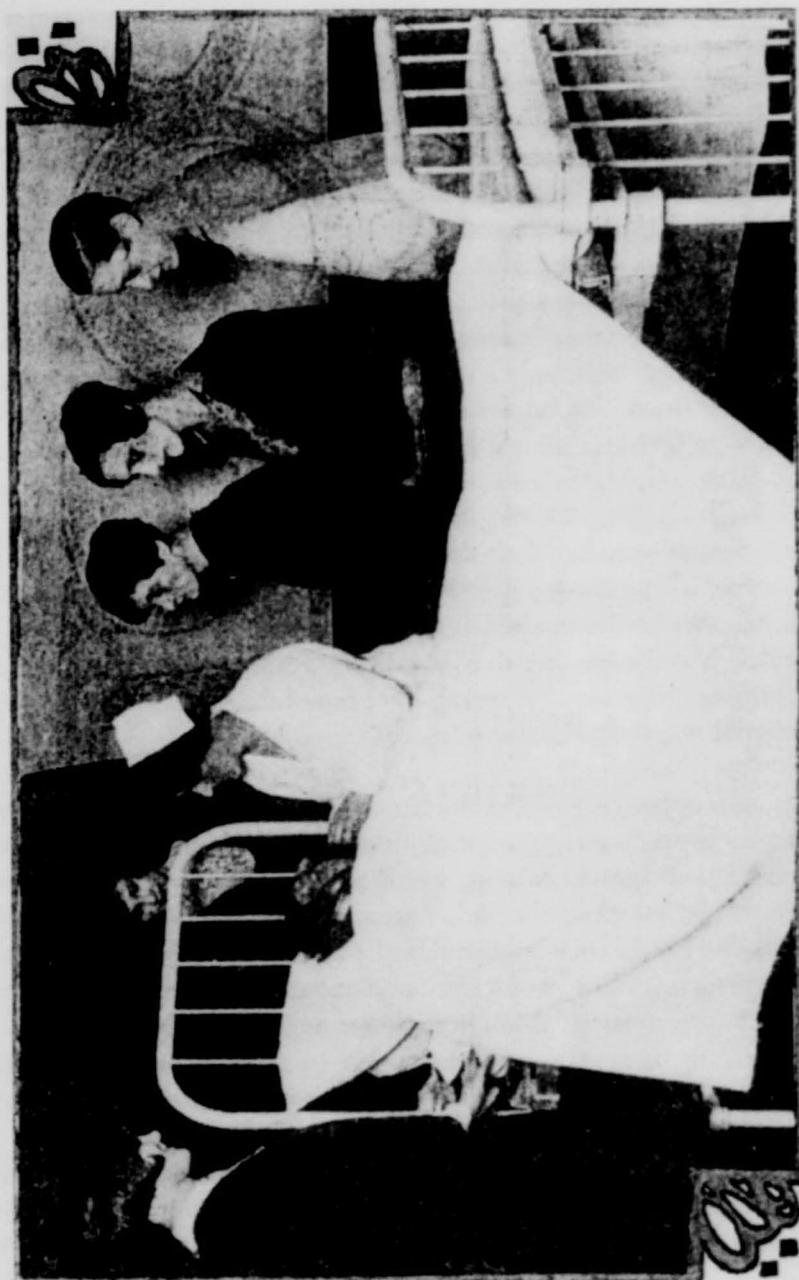
A reunion the year before attracted over two hundred telephone company girls.³⁴ The willingness of previous rest home patients to return there and commemorate their experience suggests that these women welcomed and enjoyed their company-sponsored, paid period of recuperation.

A health study by AT&T Health Director Dr. Leverett Bristol suggests that more women employees turned nervous disorder diagnoses into protracted leaves of absence than the company desired. In 1940, company officials recommended that "the Company medical department should be more and more strict, through consultation and follow-up with the employee's physician, before accepting such 'diagnoses' as nervous asthenia, nervous debility, nervous exhaustion, nervous fatigue, nervous breakdown, or nervous prostration."³⁵ He also recommended the addition of a physician with special training in nervous and mental disorders to the medical department staff to closely monitor these cases. Although it is impossible to ascertain whether women were actually suffering from nervous exhaustion or were simply taking advantage of Employee Benefit Plan provisions to enjoy a few days away from their busy work schedules, there is clear evidence that large numbers of women participated.

AT&T women responded favorably to medical department programs because the department addressed some of their specific needs and interests. After World War I record numbers of married women worked for AT&T. Fifteen to thirty-five percent of the telephone operators after the war, as opposed to two or three percent before, were either married, widowed, or divorced.³⁶ At first, company officials were concerned about the "married women in industry problem," but as the company grew to value its married women employees the medical department reoriented its programs to address their needs.

Before the war, health talks delivered at operator training sessions discussed only the health of the operators themselves. After the war the company offered a Women's General Health Course which trained women how to care for themselves and for others. It provided detailed instruction in the emergency care of minor illnesses and injuries, the principles of hygiene, nutrition, exercise, and methods for care of sick in the home. Meanwhile, in separate sessions male employees received training in accident prevention and first aid. Reflecting a larger national movement which upheld household labor as a woman's primary work, the General Health Course recognized the dual responsibilities of married working women.

More important than the content of the General Health Course was the manner in which it was designed. Female representatives from all the operating companies and manufacturing departments were brought together annually and trained as health course instructors. After the training session they returned to their respective workplaces to instruct other women. Health in-



Instructions for Nursing provided for Telephone Operators by AT&T.

struction was one of the only leadership opportunities women employees had in the early twentieth century Bell System. The course was a tremendous success among married and single women employees. Within ten years of the first women's General Health Course, 150,000 women completed it, and seven thousand then took subsequent courses in advanced first aid and nutrition.³⁷

A similar approach was utilized a decade later when the medical department endorsed the "Design for Living" program. By the late 1930s the jobs of most female AT&T employees were no less monotonous or demanding than a decade or two before.³⁸ The proportion of mental health cases handled by company doctors had risen to twenty-five percent of all employees.³⁹ Because the medical and personnel departments had no power to change the working conditions of the employees, they sought to alleviate the mental health problems of the company's employees a different way. Essentially, they helped female employees "get a hobby" to offset the stress and boredom experienced in their everyday lives. Medical department director Dr. Melville Manson offered a detailed rationale.

Through Design for Living may be developed a more nearly self-sufficient person, free from the frustrations and emotional imbalances which, we recognize today, contribute seriously to many illnesses. We in the medical field believe that personnel activities such as Miss Boden describes are an integral and important part of a program of preventive medicine which should be our greatest contribution to the business.⁴⁰

The programs once again were led by female employees and involved meeting in small groups to discuss topics including appearance, etiquette, entertaining, conversation, speech, reading, home planning and decorating, money management, vacations, and travel. During the program's first three years, 11,000 women participated in Design for Living. By 1948, 400,000 had completed the program. The program offered an outlet for those employees "whose expression has been bogged down in what it is now fashionable to call frustration." Therefore, it served the dual purpose of cultivating good relations with female employees and relieving some of the stresses believed responsible for mental and emotional illnesses.⁴¹

AT&T management learned from the famous Hawthorne Studies⁴² conducted within its Western Electric manufacturing division in the mid-1920s that informal social organization among employees was sufficiently potent to regulate group behavior. Commenting on findings from the Hawthorne project, personnel expert Ordway Tead suggested that it was in management's best interests to try to control informal organization among employees and to reorient their thinking along more "constructive" lines.⁴³ AT&T did this quite

effectively among its female employees by training carefully selected Women's General Health Course or Design for Living instructors and then sending them back to organize groups within their respective workplaces. Labor historian Sharon Strom agrees that company welfare programs such as these were quite useful in molding appropriate workplace behavior.⁴⁴ From the Bell System's perspective, company-sponsored employee groups were highly preferable to groups organized by union leaders or disgruntled employees.

AT&T also learned from the Hawthorne experiments that the alleviation of emotional strain through one-on-one counseling resulted in increased production. Social scientists who interviewed Western Electric employees discovered that by giving individual employees the opportunity to discuss anything they wanted, "a feeling of confidence on the part of the employees was stimulated, an 'emotional release' was experienced by many employees, and others gained a 'feeling of recognition.'"⁴⁵ This practice yielded happier, more productive employees. Employees were encouraged, after the studies at Hawthorne ended and in other divisions of the Bell System, to discuss personal problems with medical department personnel and full-time counselors. Medical department staff members and in-house counselors were AT&T employees. Counselors were selected from the ranks of the workers because they were well-liked, not because of specialized training or educational background. They were instructed to deal "with attitudes towards problems, not the problems themselves" and were to "dilute or redirect dissatisfaction by helping the employees to think along 'constructive' lines." Between 1936 and 1955, over a half million of these interviews took place throughout the Bell System.⁴⁶

Conclusion

AT&T Health Director Leverett Bristol noted the dual responsibility of company doctors when he suggested that "the physician working in an industrial organization not only should be highly qualified from a professional standpoint but that he should also be a 'good personnel man.'"⁴⁷ The function of the early medical department at AT&T was as much, if not more, economic as humanitarian. Nevertheless, the medical department played an important role in addressing the needs of women employees between 1913 and World War II.

During a period in which Americans relied increasingly upon professionals to address society's problems, physicians in the AT&T medical departments served as credible caretakers of the company's female telephone operators and industrial workers. The presence of the company doctor made women's participation in the paid workforce more acceptable. This was crucial to a company which relied upon an abundant supply of educated, native-born women workers and built its corporate image upon them. [See illustration on back cover] Even after AT&T began the shift to automatic switching technol-

ogy in the early 1920s, it employed many thousands of women as operators and industrial workers and ran advertisements celebrating the friendly reliable service provided by these women.

AT&T learned in the early decades of this century that a company that appeared sensitive to its employees' problems obtained a better output from them. Working conditions and personal problems created occasional, if not continuous, emotional strain but alleviation of such strain resulted in increased production. These lessons were not lost on the medical department at AT&T. The company rest homes and Design for Living programs were utilized to relieve, directly and indirectly, the stress on female employees. The General Health Course gave women a rare leadership opportunity and attested to the medical department's interest in the dual responsibilities of its married workers. From participation statistics, it can be inferred that AT&T women did not hold these efforts in contempt.

One might reasonably question why these women did not resist medical department intervention into their lives. However, in an era when trade unionists opposed female participation in their unions or at best, organized them into segregated locals, women were pleased to have their needs as workers addressed. Only one of the mutual benefit societies that preceded the Employee Benefit Plan in the Bell System allowed women to participate and receive benefits. Thus, in one respect, the medical department at AT&T was effective in gaining acceptance for the women workers.

Overall, however, the medical department's efforts can only be seen as a partial success. While physicians did identify diseases such as tuberculosis in stages early enough to be treated during periodic examinations, few women took advantage of the company's optional periodic exams.⁴⁸ Those with serious diseases uncovered during pre-employment exams were probably turned away at the company gate. Concerns about the nervous disorders of women overshadowed all other potential medical needs. Even though AT&T was among the nation's largest employers of women since the late nineteenth century, a part-time physician specializing in gynecology was not added to the Long Lines medical staff until the 1960s.

While it is important to consider the strengths and weaknesses of the medical departments at AT&T in the early twentieth century, it is more critical that we understand the purpose these departments were designed to serve in the American corporation. As AT&T struggled to meet the increasing demand for telephone service, the volume of calls coming through company switchboards and the orders for telephone equipment soared. Rather than reducing the stress caused by hectic working conditions, AT&T hired a medical staff to treat it. Through representatives of the medical staff, company officials gathered personal data on their employees which otherwise would have been off-limits. Because company officials believed that they could not

function without respectable American women, the medical department legitimated the presence of women in the workplace. By studying how AT&T addressed public concerns regarding working women, we learn a great deal about how the public and the company perceived women in the modern workforce.

Notes

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"ACA" below refers to the AT&T Corporate Archives in Warren, New Jersey, where AT&T's medical department records are currently on deposit.

Notes

1. Josephine Goldmark, *Fatigue and Efficiency: A Study in Industry* (New York: Russell Sage Foundation, 1992), p. 43.
2. As of 1900 AT&T was the parent company of the Bell System (composed of regional operating companies throughout the United States), a substantial system of long distance lines, and Western Electric, a manufacturing division responsible for the production of telephones and related equipment.
3. Sharon H. Strom, *Beyond the Typewriter: Gender, Class, and the Origins of Modern American Office Work, 1900-1930* (Urbana: University of Illinois Press, 1992), p. 229. Strom suggests that in the 1920s alone, telephone use in the U.S. increased seventy percent.
4. Corporate medical departments are the most neglected aspect of the historiography surrounding welfare capitalism. Several notable labor historians have investigated the impact of welfare capitalism on the relationship between labor and management. See Elizabeth Cohen, *Making a New Deal: Industrial Workers in Chicago, 1919-1939* (Cambridge, Mass: Cambridge University Press, 1990), Gerald Zahavi, *Workers, Management, and Welfare Capitalism: The Shoeworkers and Tanners of Endicott Johnson, 1890-1950* (Urbana: University of Illinois Press, 1988), and Stuart D. Brandes, *American Welfare Capitalism, 1880-1940* (Chicago: University of Chicago Press, 1976). However, thus far no one has focused on women's experience with welfare capitalism. Alice Kessler-Harris speaks briefly about the paternalism and welfare programs employers offered their women workers, but she does not address corporate medical departments. See Alice Kessler-Harris, *Out to Work: A History of Wage-Earning Women in the United States* (New York: Oxford University Press, 1982).
5. David Rosner and Gerald Markowitz, eds., *Dying for Work: Workers' Safety and Health in Twentieth Century America* (Bloomington: Indiana University Press, 1987). See also early chapters of Jacqueline Karnell Corn, *Protecting the Health of Workers: The American Conference of Governmental Industrial Hygienists, 1938-1988* (Cincinnati: American Conference of Governmental Industrial Hygienists, 1989).
6. J. W. Schereschewsky, Opening Remarks, *Proceedings of the Second Annual Meeting of the American Association of Industrial Physicians and Surgeons, 4 June 1917* (n.p., 1917) p. 10, as noted in Angela Nugent, "Fit for Work: The Introduction of Physical Examinations in Industry," *Bulletin of the History of Medicine* 57 (1983): 578-595. For a discussion of worker resistance to company doctors in the coal mining industry, see Alan Derickson, "Part of the Yellow Dog: U.S. Coal Miners' Opposition to the Company Doctor System, 1936-1946," *International Journal of Health Services* 19:4 (1989): 709-720.
7. G. L. Howe, "Why a factory doctor's salary costs less than nothing," *Factory* 24 (1920): 618- 621, as noted in Nugent, p. 580.
8. Microfilmed company records in box 20 at the AT&T Corporate Archives in Warrenville, New Jersey, suggest that in the second decade of the twentieth century, AT&T was very concerned about improving its corporate image. In a letter to company vice president N. C. Kingsbury dated September 19, 1912, Walter S. Allen supported the establishment of a public relations department within the company because "we must be prepared to meet actual situations as they arise in advance of general public clamor. We do not want to be put in the attitude of being forced to concede; we do not want the politicians to be able to say of the telephone company, as they have said truthfully enough of the railroads and express companies, that they have been forced by legislative and political action to become fair."; Maurine Weiner Greenwald dates this interest in public relations back to 1908 in *Women, Work and War: The Impact of World War I on Women Workers in the United States* (Westport: Greenwood, 1980), p. 188.
9. See Kenneth Lipartito, "When Women Were Switches: Technology, Work, and Gender in the Telephone Industry, 1890-1920," *American Historical Review* (October 1994): 1074-1111 for a discussion of the selection of telephone operators and their role in the techno-labor system of manual switching at AT&T. According to John N. Schacht, *The Making of Telephone Unionism, 1920-1947*

(New Brunswick, NJ: Rutgers University Press, 1985), p. 23, the education requirement for telephone operators in the early 1920s was at least an eighth grade education. By the late 1930s, telephone operators were expected to have completed a high school or trade school education. Between 1920 and 1940, 92-97% of AT&T operators were native-born white women. AT&T portrayed their operators as the "voice with the smile" in advertisements through much of the twentieth century. This "voice with a smile" reportedly soothed even the most irritated customers. See "How They Teach 'Central' Her 'Voice with a Smile,'" *American Weekly*, 1935 in box 88-203182, ACA.

10. Schacht, p. 36; Thomas R. Brooks, *Communications Workers of America: The Story of a Union* (New York: Mason/Charter, 1977), p. 3.

Brooks suggests that among operators in Chicago in 1915, the average length of service was 2.5 years.; Greenwald, p. 202.

11. See letter from W.S. Gifford to company vice president H.B. Thayer, dated August 28, 1912, box 47, ACA.

12. W.F. Armstrong et al., Bell System Personnel Conference transcript, October 23-30, 1929, box 185-07-02, ACA.

13. AT&T Annual Report, 1919, as noted in Brooks, p. 19.

14. 1922 report on absenteeism, Western Electric Co., pp. 7-19, ACA.

15. Investigation of Telephone Companies, Sixty-first Congress, Second Session, December 6, 1909 - June 25, 1910, Document 380: 100-199. See particularly pp. 11, 34.

16. *Ibid.*, p. 20.

17. Goldmark, pp. 45-48; Greenwald, p. 199; Lipartito, p. 1087.

18. According to a September 5, 1902, letter to AT&T president F.P. Fisk, Box 20, ACA, Omaha telephone operators received their full salary of \$35 per month only if they achieved perfect service. If the operator achieved 95% perfection, they received \$32.50, 90% perfection earned \$30, etc. If an operator performed below 80% perfection, she was fired. According to this letter, none of the operators on staff in Omaha received full pay.

19. Goldmark, p. 49; Investigation of the Telephone Companies, p. 34.

20. Greenwald, p. 199.

21. Investigation of Telephone Companies, p. 72.

22. *Ibid.*, p. 70.

23. *Ibid.*, p. 74.

24. Winifred Wandersee, *Women's Work and Family Values, 1920-1940* (Cambridge: Harvard University Press, 1981).

25. Abraham Myerson, *The Nervous Housewife* (Waltham, Mass.: Little, Brown, & Co., 1920). Neurasthenia was believed to be a nervous disorder caused by the breakdown of the personality when it proved incapable of adjusting to the regime of modern industrialism. This definition from James B. Gilbert, *Work Without Salvation: America's Intellectuals and Industrial Alienation, 1880-1910* (Baltimore: Johns Hopkins University Press, 1972). Because of the nebulous definition of neurasthenia offered by Charles Beard who coined the term, a sufferer of "telephone shock" was often diagnosed as neurasthenic. See also Silas Weir Mitchell, *Wear and Tear or Hints for the Overworked* (Philadelphia: J.B. Lippincott Co., 1887) reprinted by (New York: Arno Press, 1973), p. 67.

26. See Anthony Bale, "Hope in Another Direction: Compensation for Work-Related Illness Among Women, 1900-1960 - Part II," *Women and Health* 15 (1989): 99-115 for a list of women's workman's compensation cases regarding mental illness. See also Alice Kessler-Harris, "Problems of Coalition-Building: Women and Trade Unions in the 1920s," in Ruth Milkman, ed., *Women, Work and Protest* (New York: Routledge, 1985); and chapter 7 in Kessler-Harris, *Out to Work*.

27. 1922 report on absenteeism, Western Electric Co., p. 10, ACA.

28. Investigation of Telephone Companies, pp. 82-99; Greenwald, chapter 5.

29. Greenwald, pp. 222, 229.

30. Anne Payson Call, *Power Through Repose* (Boston: Little, 1898); Suzanne Poirier, "The Weir Mitchell Rest Cure: Doctors and Patients," *Women's Studies* (1983): 15-40. Poirier notes that the rest cure was used to treat nervous disorders since 1873 and still had many committed disciples around the world in 1914, the date of Mitchell's death.

31. Alan Derickson, "Physiological Science

and Scientific Management in the Progressive Era: Frederic S. Lee and the Committee on Industrial Fatigue," *Business History Review* 68 (Winter 1994): 483-514. Derickson notes that after 1900 physiologists investigated the link between efficiency and the alleviation of employee fatigue. They provided scientific justification for paid rest periods.

32. Transcript from the September 8-17, 1926, General Health Course conference in Warwick, New York, p. 6, Box WEC0 319, ACA.

33. Untitled article in *Long Lines*, (July 1923): 41.

34. Untitled article in *Long Lines*, (August 1922): 29.

35. Leverett Bristol, "A Health Study of Bell Telephone Laboratories," (1940), Box 01-09-01, ACA.

36. 1929 Personnel Conference report, Medical Department records, ACA. In *Women's Work and Family Values, 1920-1940*, Winifred Wandersee notes that increased employment of married women at AT&T was part of a larger national trend in the postwar period.

37. Women's Health Course folder, Medical Department records, ACA.

38. In the early 1920s the Bell System began its migration from manual to automatic (dial) telephone switching. This shift to automatic switching reduced some of the operators' need to connect calls manually as customers could dial themselves the numbers they wished to call. However, the shift to automatic switching was slow. (By 1930, only 31.8 percent of Bell telephones were dial.) Meanwhile, the company hoped to cut operating costs by reducing the number of operators it employed. Therefore, as demand for telephone service increased, the number of operators available to handle those calls decreased and the fast pace

of telephone work continued. For a discussion of AT&T's installation of fully automated switching equipment see Venus Green, "Goodbye Central: Automation and the Decline of 'Personal Service' in the Bell System, 1878-1921," *Technology and Culture* 36:4 (October 1995): 912-949.

39. Bristol, 1940 Health Study, p. 40.

40. Theresa E. Boden, "A Design for Living," *Bell Telephone Magazine* 27 (1948): 148-161.

41. *Ibid.*, pp. 148, 150, 161.

42. Credited as one of the most famous experiments in human behavior, the Hawthorne experiments began when the National Research Council of the American Academy of Science chose Hawthorne as the laboratory for the first of a series of studies on lighting conditions and their effect on production in industry. The results of the experiment conducted by works manager George Pennock and psychiatrist Elton Mayo were published in Fritz J. Roethlisberger, *Management and the Worker* (Cambridge: Harvard University Press, 1939). More recent accounts of these experiments include: Loren Baritz, *Servants of Power: A History of the Use of Social Science in American Industry* (Middletown, CT: Wesleyan University Press, 1960); Richard Gillespie, *Manufacturing Knowledge: A History of the Hawthorne Experiments* (New York: Cambridge University Press, 1991).

43. Baritz, p. 97.

44. Strom, p. 121.

45. Baritz, p. 102.

46. *Ibid.*, pp. 104-5.

47. Bristol, p. 2.

48. *Ibid.*, p. 65. Out of the 698 periodic health examinations conducted at Bell Laboratories in 1938, only one was performed on a woman employee.