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# Miszellen

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## WEAK SISTERS: THE EMPLOYMENT OF WOMEN BY FRENCH AND GERMAN RAILROADS IN THE NINETEENTH CENTURY

At first glance the European railway industry before 1914 appears to be entirely a man's world. Executives, chairs of the board, chiefs of operation, stationmasters, engineers and firemen and conductors, construction workers and repairmen – all were males. Search as one might, women were apparently not to be found among those who built, managed, maintained, and drove the trains that plied the European continent during the first century of rail transportation.

Yet women there were, present at the creation of the industry and increasingly numerous as the century progressed. Unfortunately they are visible to us only through a veil of imperfect data. The evidence of their daily presence in the workforce is widely scattered and distressingly incomplete. Still, it is surely useful to attempt a preliminary assessment and to suggest a pattern. If the returns are fragmentary as yet, they are not random. Hence, insofar as continental Europe was concerned, we may begin with a premise: that the large private railway companies of France were pioneers in hiring women. In Germany, where the private sector of the railroad industry gradually lost ground to state ownership, women were later and less frequently employed<sup>1</sup>.

If so, these basic chronological and numerical distinctions between the two major competing railway systems on the Continent presumably also tell us something about societal differences. Some scholars have contended that the entry of a significant contingent of women into the labor force was a symptom of modernity, because the values of the workplace soon began to displace the traditional concerns of homelife: *Kinder, Küche, Kirche*<sup>2</sup>. Can we, then, conclude from the comparative history of railways that France was, at least in this regard, a more modern nation in the nineteenth century than Germany?

It is likely that women were employed from the outset of the railway age to clean the interior of passenger cars at day's end. In this instance one can observe for once with no trace of irony: there was a dirty job and somebody had to do it. A certain element of conjecture is unavoidable, however, simply because such female labor went unrecorded in railway statistics. Rather, the women engaged by the first small railway companies for this menial task were regarded as common domestic servants who clearly possessed no special skill or training, who were doubtless paid a pittance for their hours of work, and who were consequently not accorded a regular status as railway employees. Literally, they just did not count.

The first certain traces of females on the French railroads appeared in the 1850s. Records of the Eastern Railway Company from that time are indicative, for example, because they suggest

1 For a brief comparative overview, see Allan MITCHELL, *The Great Train Race: Railways and the Franco-German Rivalry before 1914*, in *FRANCIA* 19/3 (1992) p. 47–55.

2 See the nuanced discussion of this problem by Hartmut KAEUBLE, *Nachbarn am Rhein. Entfremdung und Annäherung der französischen und deutschen Gesellschaft seit 1880*, Munich 1991, p. 41–58.



not only that several women were being employed by the industry but also in what principal capacity and for what motives. The key, in a hyphenated word, was level-crossings. Across the plains of northeastern France rails frequently sliced through roadways, creating a safety hazard at every intersection. There were three options: burrow a tunnel, build an overpass, or erect a gate. Of these, the third was ordinarily preferable because least costly. But gates needed to be raised or lowered at the appropriate moment, and thus was created the profession of gate-keeper (*garde-barrière*). Initially these posts were held in France (as in Germany) exclusively by men, who thereby became in effect traffic police.

In 1854 the Eastern Company made a policy decision that can be said to have regularized, for the first time, the status of women as railway employees. Heretofore the gates at level-crossings had usually been kept open and were closed only for the passage of a train. But now it was decided to require that gates remain closed, day and night, except when road traffic demanded their opening. This cumbersome procedure – later abandoned – was thought to assure greater safety, but it also meant that gates must be constantly and closely watched. Accordingly, the Eastern Company ordered the construction of 75 tiny *maisons de garde* at level-crossings on its main Paris-Strasbourg line. Minutes of the Company's executive committee disclose that, while there was concern about the expense of this measure, railway officials were relieved to learn that an estimated 50000 francs could be saved annually by employing married women to help their husbands in regulating the gates. They would be called *aides-garde-barrière*, assistant gate-keepers<sup>3</sup>.

With all due caution, we may attempt to quantify. One French expert has estimated that in the mid – 1850s the entire railway industry of France employed approximately 21300 persons, of which 1400 were women, that is, about 7 percent<sup>4</sup>. These numbers would of course rise during the latter half of the century, and a contemporary British commentator recorded that of 300000 French railway employees in 1914 nearly 10 percent were women, half of whom were performing gate-keeping chores »where the traffic is light and makes little inroads on a woman's domestic duties.«<sup>5</sup> This remark fairly characterized the reason why such an arrangement was mutually attractive for railway workers and their employers. For the male gate-keeper it brought a modest lodging and a supplementary income from his spouse without a disruption of family life; and for the Company it meant both economy and increased safety. Company papers contain extensive lists of employees with names, assignments, and wages. The typical annual salary scale in the decade of the 1860s was as follows: gate-keeper first class, 800 francs; gate-keeper second class, 720 francs; and assistant gate-keeper, between 120 and 180 francs. Members of the third category, all women, were plainly identified as »his wife« (*sa femme*), referring to men in one of the first two categories. The available evidence documents no bonuses, no raises, and no promotions for women, although these were routinely accorded to men<sup>6</sup>. Perhaps additional research will qualify or amplify these observations, but it is unlikely to alter the general impression of women as marginal figures in a largely male labor force.

The employment of women by the large private railway companies of France in the 1860s began to attract some notice elsewhere. In the German and Austrian press, commentators remarked that, besides gate-keeping, »female persons« were sometimes engaged as ticket-sellers in stations, telegraph-operators, restroom-attendants, and they were also deployed to

3 Compagnie Paris-Strasbourg (after 1854 renamed Compagnie de l'Est), Conseil d'Administration, procès-verbal, 11 May 1854, AN Paris, 13 AQ, 41.

4 Georges RIBELL, *La révolution ferroviaire. La formation des compagnies de chemins de fer en France (1823–1870)*, Paris, 1993, p. 363–64.

5 Ernest PROTHEROE, *The Railways of the World*, London 1914, p. 536.

6 Compagnie de l'Est, Comité de Direction, procès-verbal, 12 May 1854, 17 January and 1 February 1855, 5 November 1856, etc., AN Paris, 13 AQ, 338–339, 2565.



gather small pieces of coal dropped along the tracks from locomotives or tenders<sup>7</sup>. Still unmentioned were women hired to clean passenger cars after hours; and likewise passed over in silence were those who sold newspapers and books at stalls in French railway stations, placed there by the enterprising publishing house of Hachette, whose employees they were therefore considered to be<sup>8</sup>. In addition to France, only the Belgian and Austrian railroads had begun the hiring of women in any numbers, but as the official newspaper of the League of German Railway Administrations (*Verein Deutscher Eisenbahn-Verwaltungen*) noted: as a rule, solely wives or daughters of male employees were accepted, and these only in »certain branches of business«, a phrase that we can easily translate to mean poorly paid labor. The journal observed that it was not the practice to employ women on the railroads of North America, England, or Switzerland. As for Germany, the question was currently under discussion. No laws prevented a woman's employment by state or private companies there, but they would need – the paper admonished with teutonic gravity – to take sufficiently into account not only the aptitude of women but also »the physical and psychic nature of the female.«<sup>9</sup> Precisely on this nebulous pre-Freudian notion, as we shall see, the future debate was bound to turn.

If the war of 1870 did not inaugurate a new era for railroads, it certainly spawned some changes. The first and most urgent was labor unrest stemming from the Paris Commune. Although repressed during the 1870s, this malaise was to be of growing concern thereafter, especially when rumors of another Franco-German military conflict began to gather<sup>10</sup>. A second new (or newly acute) anxiety was the possible nationalization of private railway companies. This issue, too vast to pursue here, was spurred by public and parliamentary demands for greater safety, which could be enhanced only by more uniform regulation of standards, timetables, signals, brakes, and so on<sup>11</sup>. Third, railroad administrations had to worry about the increasing costs of operation, notably including both the rising wages and the expanding social welfare benefits awarded to the labor force<sup>12</sup>. These complex problems, all of which indirectly affected women, came early and stayed late.

More immediately relevant was quite a different matter: the rapid growth of railway bureaucracy and the entry of women into it. Again, the extant evidence is persuasive that France took the lead. Women were regularly employed in office work by the private French companies by the mid-1880s, whereas in Germany they were still confined to the menial tasks common in prewar France. In addition to selling tickets, operating telegraphs, cleaning toilets, attending bookstalls and station buffets, French women could be found handling correspon-

7 »Ueber die Verwendung von Frauenpersonen beim Eisenbahndienste,« *Zeitung des Vereins Deutscher Eisenbahn-Verwaltungen* (hereafter: ZVDEV), 26 November 1862.

8 See Eileen DEMARCO, *Reading and Riding: The Hachette Monopoly of Bookstores on the French Railroads in the Nineteenth Century*, dissertation at the University of California, San Diego, 1995.

9 »Ueber die Verwendung von Frauenpersonen beim Eisenbahndienste,« ZVDEV, 26 November 1862.

10 See Allan MITCHELL, *The German Influence on Subversion and Repression in France during the Early Third Republic*, in *FRANCIA* 13 (1986) p. 409–33.

11 This issue was debated in dozens of contemporary publications including Auguste CHÉROT, *De rachat général des chemins de fer et d'une organisation régionale du réseau français*, Paris 1878; L.-L. VAUTHIER, *Projet de loi du rachat et réorganisation*, Paris 1879, and Edgard MILHAUD, *Le rachat des chemins de fer*, Paris 1904.

12 »This important question« was repeatedly raised in the administrative correspondance of the Director of the French Eastern Railway Company: François Jacqmin to Ressequier, 5 May 1873, AN Paris, 13 AQ, 2019; Jacqmin to Durbach, 15 November 1874, *ibid.*, 2021; etc. Similarly, the need to raise welfare benefits for workers was stressed by Bismarck's chief railway expert: Albert Maybach to chairs of the Prussian railroad commissions, 3 June 1878, GStA Merseburg, Rep. 77, Tit. 260, Nr. 6, Bd. 5. Both had primarily men (who might strike) in mind and raised no question about women.



dence, keeping ledgers, dispatching freight, and even in exceptional cases overseeing small stations on trunk lines. As before, statistically, their major occupation was gate-keeping. But the new activities within French railway administration, as a German editorialist admiringly commented, had already obtained »superb results«<sup>13</sup>.

Should we deduce that the French thereby set an example of modernity? A closer look casts some doubt on such an assumption. Most women office employees were restricted to staff work in the larger railway stations where they labored through an eight-hour day, six days a week, for a meager monthly wage of 60 francs. They were ordinarily confined to an isolated room with a separate entrance, for purposes both of control and protection. With an unintentional double entendre one witness observed: »It has often occurred that intelligent young girls had to be dismissed because their moral qualifications left something to be desired.«<sup>14</sup> An article in the respected liberal newspaper *Economiste français* concurred. In general, it said, women did not display the »personal independence and judgment essential for certain positions,« yet they often showed »unusual cleverness« in tending to details: checking accounts, compiling timetables, making copies, completing paperwork. Once more we may supply a simultaneous translation: women made good secretaries<sup>15</sup>. Moreover, they were inexpensive. By one reckoning in 1885, twenty of the forty-two employees on a rail line between Chalon-sur-Saône and Lon-le-Saunier were women, who were paid together 9420 francs annually. If all those posts were occupied by men, the total expense would have been 26 040 francs. Thus the hiring of women saved exactly 16 620 francs for a single piece of track. No wonder that the private French railway companies, always eager to meet rising costs, turn a profit, and offer a handsome dividend to their stockholders, turned to female labor<sup>16</sup>.

The closer we approach the underlying explanation for French precedence in this matter, in fact, the more we encounter a thoroughly reactionary cluster of male attitudes. It is telling to overhear a debate during 1894 in the advisory committee on railway technology (*Comité de l'exploitation technique des chemins de fer*) in the French Ministry of Public Works. The Northern Railway Company had recently reported »good results« obtained by employing women as gate-keepers (not merely as assistants), which was not contrary to existing regulations. But government inspectors maintained that females should be allowed to exercise such a function only at »small posts« and that their duty should be limited to flagging down oncoming road traffic. That practice had long been customary, but one committeeman disclosed that the Northern Company was actually using three women to operate heavy cranks requiring »a great application of force«; worse, one of them was nursing an infant, and another was sharing duties with a husband who spelled her by remaining in service for seventeen hours at a stretch. The potential danger of these circumstances alarmed committee members, one of whom formulated the consensus: if a major accident were to occur and be traced to the role of a woman, »it would create a veritable hue and cry of [public] opinion.« The chairman thereupon summed up: women should be forbidden to take charge of switches and signals on the principal rail lines, although they might perform similar operations in certain stations »of minor importance«<sup>17</sup>.

Any further commentary here would be superfluous. Let us only confirm that these condescending evaluations of female robustness and reliability were by no means restricted to

13 »Ueber die Verwendung der Frauen im Dienste der Eisenbahn, in specie bei der Französischen Ostbahn,« ZVDEV, 25 March 1885; »Ueber die Verwendung von Frauen im Eisenbahndienst,« *ibid.*, 12 September 1885.

14 *Ibid.*

15 Cited in »Weibliche Angestellte bei den Französischen Bahnverwaltungen,« *ibid.*, 25 January 1888.

16 »Über die Verwendung von Frauen im Eisenbahndienst,« *ibid.*, 12 September 1885.

17 *Comité de l'exploitation technique des chemins de fer, procès-verbal, 6 November 1894, AN Paris, F<sup>14</sup> 12362.*



the railroads in late nineteenth-century France. To the contrary, they fit securely into an attitudinal cluster that characterized other aspects of the Belle Epoque<sup>18</sup>.

The first image of Germany that emerges in this context is similar to that of France but slower, always a step or two behind. We have noted that the regular hiring of women there did not occur until after the war of 1870. Indeed, one obvious impetus for that development was the newly formed Reich's acquisition of the transportation network of Alsace-Lorraine, which had previously belonged to France's Eastern Railway Company and already retained approximately a thousand female employees. Besides, flanked by Austria in the East as well as Belgium and Luxemburg in the West, the Germans had enough positive examples among their neighbors apart from the defeated French. As a consequence, granted the time-lag, much the same story could be rewritten about Germany with a similar list of railway occupations to which women were admitted: ticket-sellers and baggage-checkers, telegraph and (increasingly) telephone-operators, freight-dispatchers, and the rest. The supposition that gate-keeping was strictly a man's job, because it was a policing function to assure public safety, died harder in Germany, but that change came, too, before 1900<sup>19</sup>. This general retardation, compared with France, perhaps has a simple structural explanation, alluded to previously. Whereas the operation of railroads remained mostly within the private sector in France, state ownership was progressively the rule in the German lands, especially after Otto von Bismarck's failure to create a *Reichseisenbahn* in the 1870s and Prussia's subsequent acquisition of private companies throughout northern Germany. Strict state regulation, by which most railway employees were unambiguously designated as government personnel, consequently obtained in Germany. A profit motive was present there, to be sure, because every member-state of the Reich regarded the railroads as a means to retain some financial and federal autonomy from national control. Yet capitalism (in terms of private investment and management) was inherently less primary for the German railway industry than for the French, and thus constraints of the labor market such as hiring cheap labor to protect profits and dividends were less compelling. For such large generalizations, admittedly, definitive proof is lacking and may not be possible<sup>20</sup>.

Be that as it might, a transformation was evident by the turn of the century. Simultaneously, but not coincidentally, the forceful entry of women into the railway labor force of Germany occurred with the introduction of the typewriter. That »unusual cleverness« attributed to women in matters of manual dexterity did not escape the notice of German railroad administrators, and now it had an obvious application. One may plausibly speculate that the same factors that had earlier inhibited the employment of German women shifted after 1900 to favor it. State regulation was decisive. One after another Germany's railway regimes moved during the initial decade of the twentieth century to adopt uniform codes for female members of their bureaucracy. The first and most important of these was Prussia in 1901, followed in the next year by Württemberg, and then by the others.

Viewing this body of legislation as a whole, we can gather an accurate profile of female office employees in the German railroad industry in the years before 1914. Applications were

18 See the chapter on »Men and Women« in Allan MITCHELL, *The Divided Path: The German Influence on Social Reform in France after 1870*, Chapel Hill 1991, p. 97–118.

19 »Beschäftigung weiblicher Personen bei der preussischen Staateisenbahnverwaltung,« ZVDEV, 10 July 1901.

20 The financial structure of German railways is analyzed in two excellent recent works: Colleen A. DUNLAVY, *Politics and Industrialization: Early Railroads in the United States and Prussia*, Princeton, 1994; and Volker THEN, *Eisenbahnen und Eisenbahnunternehmer in der Industriellen Revolution: ein preußisch (deutsch)-englischer Vergleich, 1830–1880*, dissertation at the Free University of Berlin, 1993. The best analogous treatment of France is by François CARON, *Histoire de l'exploitation d'un grand réseau. La Compagnie du chemin de fer du Nord 1846–1937*, Paris, The Hague 1973, p. 74–123, 284–96, 341–65.



accepted only from single young women or childless widows between the ages of 17 and 35. They must be of »good moral bearing and physical capacity,« according to Prussia's rules, and, as Saxony added, »of good reputation« (*unbescholten*). They must also possess sufficient education to comprehend dictation and to demonstrate clear penmanship. If lacking proper school credentials, they might be required to pass a test consisting of German grammar, French (»without crude errors«), geography, and elementary mathematics. Once accepted, the neophyte would serve a probation of three to six months, subject at any time to dismissal at one week's notice. If retained, she could be fired after one month's notice for malfeasance or incompetence; and her contract would be promptly terminated whenever she married. Remuneration during the probationary period was ordinarily two Marks per day, then the salary would rise on a scale (which varied from administration to administration) between 70 Marks a month for beginners and 100 Marks a month after ten years of employment. There was no night work<sup>21</sup>.

Surely it goes without stressing that those who selected the candidates, administered the tests, paid out the modest wages, and dismissed the laggards would all be men. The railway world of women was therewith circumscribed and controlled to serve the needs of an established male bureaucracy attempting to cope with the inexorable expansion of industry, commerce, and technology. Clearly manifest before 1914, this trend was accelerated by the circumstances of wartime, when millions of men were pressed into military service. Statistics of the Reich's Ministry of Transportation recorded that Prussian railroads employed 8646 women in 1910 in a total labor force of 488326. By 1919 these figures stood at 17830 of 851180<sup>22</sup>. The ostensible precision of these numbers is of course illusory. Yet they unquestionably indicate that women were a growing presence after 1900 in the labor force of German railroads. Even a small measure of skepticism must lead us to wonder, nonetheless, whether the Weimar Republic was firmly setting foot on the path of modernity.

Finally, we must account for the dog that did not bark. In labor relations, prewar Europe was a scene of disorganization and agitation. Demands for shorter hours and better wages, onset of strikes, and threats of insurrection became commonplace, and the railroad industry could not fail to be affected.

To compare France and Germany in this specific regard is to confirm a venerable cliché: French railway employees were divided and quarrelsome; their German counterparts remained disciplined and counted on the sheer weight of the labor movement to bring results. In France a radical trade union of railway workers (*Syndicat national des travailleurs des chemins de fer*), with close ties to the Socialist parent CGT, pressed for salary increases, social benefits, and an eight-hour day; but its efforts were offset by a larger and more moderate union (*Association fraternelle des employés et ouvriers des chemins de fer*) that rejected strike demands and collaborated openly with successive republican cabinets<sup>23</sup>. Meanwhile in Germany, just as we might expect, state regimes were successfully engaged in urging calm, making concessions, and arguing that railway employees enjoyed a special status that precluded their affiliation with trade unionism or the Social Democratic Party. Unsurprisingly, therefore,

21 »Beschäftigung weiblicher Personen bei der preußischen Staatsbahnverwaltung,« ZVDEV, 10 July 1901; »Verwendung weiblicher Personen im württembergischen Eisenbahndienst,« *ibid.*, 22 January 1902; »Weibliches Bureaupersonal in Sachsen,« *ibid.*, 14 November 1908.

22 Reichsverkehrsministerium, *Die Deutschen Eisenbahnen 1910 bis 1920*, Berlin 1923, p. 31–34.

23 A third major union of French railroad engineers and firemen, the *Syndicat des mécaniciens et chauffeurs*, tended to waver between these two poles. »Drohender Streik der französischen Eisenbahnarbeiter,« ZVDEV, 22 June 1898; »Zur Eisenbahnbewegung in Frankreich,« *ibid.*, 3 May 1899; »Eisenbahnarbeiterorganisation in Frankreich,« *ibid.*, 16 June 1900; »Die »Fraternelle« (Brüderschaft) der Französischen Eisenbahner,« *ibid.*, 19 June 1901. Incomparably the best general treatment of French railway labor is Ribeill, *Les cheminots*, Paris 1984.



France had to suffer through a clamorous railway strike in 1910, whereas Germany's rail networks remained tense but untroubled<sup>24</sup>.

In all of this fermentation women played essentially no part. Although some French women were not strangers to radical politics, during the Paris Commune and after, they were inconspicuous among railway labor organizations. In Germany a railroad *Frauenverein* did appear in 1904, but it functioned entirely as a welfare agency for indisposed women employees, without any apparent political ambition. Within a few years twenty-four such groups were registered. They represented, for instance, a league of Bavarian telephone-operators with local branches in Munich, Augsburg, and Nuremberg. But a national sisterhood was still lacking, and no political impact whatever was discernible<sup>25</sup>. When, several years after the fact, Alexandre Millerand (a Socialist and sometime Minister of Public Works) attempted to evaluate the »hostility and hate« that arose in prewar labor disputes and that culminated in the railway strike of 1910, he made no mention of women's participation. As always, it seemed, they were somewhere present but virtually invisible<sup>26</sup>.

After all, in light of the accumulated evidence, we have no reason to be astonished at this conclusion. Women had first entered the railway labor force as spouses, and that remained a usual condition of their employment outside of station offices. A 1904 government report about German gate-keepers (*Bahnwärter*) complained about their tendency to slumber at their posts because of family problems: since their female helpmates too often fell ill and thus deprived them of sleep »against regulations,« these men must be encouraged as upstanding railway personnel »to choose only a hearty and completely healthy wife.«<sup>27</sup> When employed in a bureaucratic position, as we witnessed, single women were left at the bottom of the occupational ladder, the last to be hired, the first to be fired. Denied the job-security of tenured men, they were always vulnerable to administrative layoffs and the arbitrary whim of supervisors. If women hesitated to challenge the authority of company executives and governmental decrees, their timidity was well founded in the facts of daily life on the railroads<sup>28</sup>. Even though we can catch only a glimpse of their existence, it is sufficient to explain this apparent lacuna of labor history. We cannot at the same time, however, make a strong case for the dawning of modernity through the employment and thus the liberation of women.

We should reflect in conclusion on the danger of evaluating raw statistics without a close examination of the relevant archival record. True, one can plot a rising curve of employment of women in the railway industries of France and Germany before the First World War. And granted, the entry of those women into the European labor force may have contributed to cracking the rigid mold of male assumptions about female chores being solely confined to

24 »Sozialdemokratie und Eisenbahnarbeiter,« *ibid.*, 9 June 1900; »Verband deutscher Eisenbahnhandwerker und -arbeiter,« *ibid.*, 4 January 1902; »Verbot der Zugehörigkeit zu sozialdemokratischen Vereinigungen,« *ibid.*, 8 May 1909. See Hans SPUHLER, *Der Generalstreik der Eisenbahner in Frankreich von 1910*, Berlin 1973; and Klaus SAUL, *Die Zeit der Verfolgungen. Die preußischen Eisenbahnverbände 1878–1914*, in *Zug der Zeit – Zeit der Züge*, 2 vols., Berlin 1985, vol. 1 p. 277–85.

25 »Ein Eisenbahn-Frauenverein,« ZVDEV, 13 April 1904; »Ueber Berufsorganisationen der deutschen Verkehrsbeamten,« *ibid.*, 21 October 1908.

26 Alexandre MILLERAND, »Rapport fait (au cours de la précédente législature) au nom de la Commission du travail sur le projet de loi concernant le statut des employés de chemin de fer d'intérêt général et sur le règlement pacifique des différends d'ordre collectif,« 17 January 1917, AN Paris, C 7638.

27 »Die Frau des Bahnwärters,« ZVDEV, 2 March 1904.

28 On the social, legal, and political conditions of German railway employees, see Dorothee KLINKSIEK, *150 Jahre Eisenbahner in Deutschland. Die Eisenbahnbediensteten im 19. Jahrhundert*, *Zug der Zeit – Zeit der Züge*, vol. 1, p. 259–71. Curiously, however, the author makes no mention whatever of women.



home and hearth. Yet we would err to allow our investigation to rest at that, without inquiring about the daily routine of workers hired, the structure of railway enterprise, and the mentality of employers. After addressing those problems, it is difficult to sustain a contention that the classification of »modernity« is entirely appropriate for the complex phenomenon in question.

A more plausible alternative would be to place the initial employment of women in Europe by late nineteenth-century railroad administrations into a general context of technology<sup>29</sup>. The construction of railways was only possible through the application of certain technological skills, and at that time such engineering techniques were exclusively a man's profession. The execution of railway projects also required a huge deployment of heavy physical labor for which women, however robust, were inadequately suited. Therefore, we may suppose, absolutely no one in the nineteenth century had reason to assume that women could participate at the most elementary tasks of railway technology, intellectual or manual. From the beginning, consequently, the status of females on the railroads was peripheral; and in large measure it was, moreover, threatened with extinction. We have seen that about half of the women employed were involved with gate-keeping. From a technological standpoint, however, that occupation was doomed to disappear. Even before 1914, electric signals and automatic barriers began to displace the uniformed women, waving flags, who stood at thousands of railway crossings throughout the European countryside. Far from being harbingers of modernity, they were symbols of obsolescence. They deserve to be remembered, to be counted, to be appreciated – but not to be treated abstractly as the statistical evidence of a half-truth.

29 An interesting theoretical treatment of this topic is by Joachim RADKAU, *Technik in Deutschland. Vom 18. Jahrhundert bis zur Gegenwart*, Frankfurt/Main 1989, p. 115–48. For France see Cecil O. SMITH, Jr., *The Longest Run: Public Engineers and Planning in France*, in *The American Historical Review* 95 (1990) p. 657–92. Both contain extensive bibliographies.