

The Changing Labor Conditions of the Leningrad Metalworkers between the Late 1920s and Early 1930s

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1. Introduction

On January 2, 1929, as the socialist competition movement was beginning to grow rapidly among Soviet workers, the Soviet government decided to extend the 7-hour work day system to all “production plants” in industry, transportation and communications by October 1, 1933.¹⁾ The Soviet leaders had discussed the 7-hour work day system since late 1927, but as of 1928 it had been confined mainly to the textile industry.²⁾ The full-scale introduction

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1) *Izvestiia*, no. 12-13, January 10, 1929, p. 1. The decree of the Central Executive Committee and Council of People’s Commissars of USSR, titled “O semichasovom rabochem dne” is reproduced in Ia. L. Kiselev and S. E. Malin (eds.) (1931), pp. 162-163 and V. N. Malin and A. B. Korobov (eds.) (1957), pp. 10-12.

2) Solomon M. Schwarz (1952), pp. 259-266. As early as October 28, 1927, immediately after the Soviet government first issued a manifesto about the 7-hour system on October 15, the Leningrad local government also adopted a decree about reduction of work day. In this decree, it decided to create “a commission for preparation and transfer of enterprises in the Leningrad *oblast’* to a 7-hour work day.” The first factory in Leningrad to convert to the new system was the Volodarskii sewing factory and the shoe department of the Proletarskaia pobeda factory that decided to adopt it as of May 1, 1928. See S. I. Tiul’panova (ed.) (1964), pp. 284-285.

of the 7-hour work day was propagandized in the contemporary press as a “new achievement” of the Soviet regime “in the field of labor rights.” It considered the reduction of work hours, which was “created as a result of successful growth of socialist construction and an increase of labor productivity,” as “a prerequisite for the increase of cultural-political levels and the material well-being of workers.”³⁾

In contrast to such propaganda by Soviet authorities, a number of Western scholars have argued that the introduction of the 7-hour work day system actually worsened the labor conditions of Soviet industrial workers. According to Solomon Schwarz, an exiled Menshevik who wrote a classic study about Soviet labor during the 1930s, labor conditions generally deteriorated wherever it, along with three-shift schedules, was introduced without the necessary pre-arrangements. “Unlike the usual experience with shorter hours, the 7-hour day under these circumstances was inevitably accompanied by a higher sickness and accident rate.” Such a failure by the Soviet authorities to protect labor was an inevitable result of “production policy.” Thus, “when maximum production came to be guiding principle and the essence of all social and economic endeavors, the... system of the protection of labor was reduced... to secondary importance,” even though “protection of labor had been one of the main objects of Soviet labor policy from its early days.”⁴⁾

This paper, discussing those conflicting opinions, examines how the general labor conditions of the Leningrad metalworkers changed as a result of labor policies accompanied by the rapid industrialization drive between the late 1920s and early 1930s.⁵⁾ Did their labor conditions improve or deteriorate?

3) K. P. Gorshenin, *et al.* (eds.) (1939), pp. 42-43.

4) Solomon M. Schwarz (1952), pp. 258-259. Schwarz’s argument that the labor conditions of Soviet factory workers have worsened during the industrialization drive is generally accepted among Western scholars today. For example, see John M. Thompson (1996), p. 268 and Wendy Z. Goldman (2007), pp. 24-28.

5) The Leningrad metalworkers can offer a good material for the case study about the impact of the industrialization drive on the labor conditions of Soviet factory workers. The northwest region of the USSR, with Leningrad as its hub, was one of the leading industrial regions of the country. In tsarist Russia, the imperial

How did their conditions compare to those of other workers? Furthermore, how did they, who were considered by the Soviet authorities as the “cadre of the proletariat” and “working-class avant-garde” and would lead the construction of a new ideal society during the 1920s and 1930s, respond to the changes in their labor conditions?⁶⁾ To answer these questions, I focus on three major factors that determined their labor conditions. The first is the changes in working hours and work intensity that were caused mainly by the wide introduction of the 7-hour work day system. The second factor is the continuous work week system, which the Soviet regime rigorously introduced to increase production. The third factor is work safety, which has been generally assumed to worsen with the speeded-up industrialization. By

capital had been the center for the engineering, metallurgy, shipbuilding, and military-based industries. The metalworkers who were defined here as the manual workers employed in metallurgy, engineering, shipbuilding and electro-technical sectors had long been a dominant factory worker's group in the city and suburbs of Leningrad in terms of number. For example, on January 1, 1914, metalworkers accounted for 41.5% of the total industrial workers (including apprentices) in St. Petersburg, while textile workers accounted for 16.5%. Workers in the printing, food and chemical industries formed 9.5%, 9.3% and 8.9% respectively. World War I made the position of the metal industry even more dominant. On January 1, 1917, three years later, 379 metal plants employed as many as 60.4% of the Leningrad industrial workers. The dominant position of the metal industry continued into the 1930s, even though it declined somewhat in relative terms. See *XV let diktatury proletariata*, 1932, tablitsy, p. 74, table 5; A. L. Fraiman, *et al.* (eds.) (1972), p. 12.

- 6) In Soviet rhetoric, the Leningrad metalworkers were considered one of the most important workers' group in the politics. Soviet authorities expected that they should lead the construction of a new ideal society. Having seen the metalworkers in the capital play an active political role as main supporters for Bolsheviks in the revolutions of 1917, the Soviet regime apparently seemed to believe that the metalworkers should and were able to play the same role once more in the industrialization drive deemed necessary to build a proletarian society. In promoting the socialist competition movement, in cutting production costs, in improving labor discipline, in mastering skills and even in living a life in a communal residence, the metalworkers were expected to be a “model” for other industrial workers to emulate. For example, see *Metallist*, no. 18, May 17, 1929, p. 1.

examining these three factors in detail, I will demonstrate that while the labor conditions of the Leningrad metalworkers did not necessarily deteriorate, their conditions were frequently worse than those of workers in other industrial sectors. In addition, I will also show that the metalworkers did not play the active economic role that the Soviet authorities attached to them in carrying forward the socialist industrialization.

2. The 7-Hour Work Day

The decision of the Soviet government to introduce the 7-hour work day in all factories aroused immediate response from a Leningrad metal plant.⁷⁾ According to a report in the organ of the Leningrad Trade Union of Metalworkers, the first response came from Pnevmatika, the only factory producing pneumatic machines in the USSR. In early January 1929, all technical personnel and workers in the factory participated to discuss the 7-hour system. The discussion proved that the most important thing in achieving reduction of the work day was to increase productivity so that total production did not decrease; and to preserve at least current wage levels. Therefore it was necessary, first of all, to tighten up time-schedules (*uplotnenie*). For this reason, the factory managers studied how workers utilized their work hours and whether the speed of machine tools could be increased. They also checked the state of the supply of raw materials and instruments. If their supply were short, the operations would stop. After the impact of the new measure was studied

7) The discussion in this section about the 7-hour work day is limited to period up to 1932, because then, official discussions completely disappeared in the central and local press. Nevertheless, it appears wrong to suggest that the new work day system waned because of its ineffectiveness, as Schwarz argues. Rather, the reason could be that almost all factories in Leningrad adopted it by 1932 so that no more campaign was required. In any case, it seems that an overwhelming majority of metal plants in the city adopted the 7-hour work day by 1934. See Solomon M. Schwarz (1952), pp. 267-268.

carefully, on January 16, the factory determined to adopt the new system fully. The factory assumed that the results of adoption of the 7-hour system were to be positive: productivity would increase by 12.5% owing to a tightening-up of time schedules and the speed of rapidity of machine-tools. As a result, the average wages of the workers would not decrease, if the current piecework wage-rates were maintained. If the workers' wages declined, they were to be compensated. In any case, the wage-rates would be reconsidered three months later so that the total pay of the workers would not decrease.⁸⁾ When the correspondent who wrote this report visited the factory again two months later, he heard from the factory managers that their expectations were generally being met, even though stoppages were not completely eliminated due to the need to repair machines.⁹⁾

Despite its good results, however, the 7-hour work day system did not spread among other metalworkers so rapidly, even though the case of Pnevmatika was touted as a successful model for other metal plants. It was not until March that a second metal plant in Leningrad adopted the new system. On March 19, the Il'ich factory decided to reduce the work day to seven hours, according to the decree of the Leningrad Oblast' Council on the National Economy.¹⁰⁾ Even the case of Il'ich, however, did not lead to immediate introduction by other metal plants. According to a report by the Leningrad Oblast' Trade Union of Metalworkers, only twelve more metal plants, such as Svetlana, Russkii dizel', Krasnyi gvozdil'shchik and Sevkael', adopted the new work day by the end of September. Seventeen other metal plants, including Krasnyi putilovets, Krasnyi vyborzhets and Izhorskii, joined this group in 1929/1930.¹¹⁾

The new system was not adopted by metal plants immediately because, unlike other campaigns such as the shock-worker movement (*udarnichestvo*), it frequently required a comprehensive change in the entire production process.

8) *Leningradskii metallist*, no. 2, January 21, 1929, p. 22.

9) *Leningradskii metallist*, no. 9, March 30, 1929, p. 22.

10) GARF, f. 5469, op. 13, d. 41, l. 44.

11) GARF, f. 5469, op. 13, d. 282, l. 3.

For example, it took more than seven months for Krasnyi putilovets to prepare for the new system. The factory began to discuss how to introduce it before March 1929. At first, the factory management found through time studies that the existing 8-hour work day was not utilized productively, with 25% of time wasted. The reduction of work hours in adopting the 7-hour system would be around 14%. Therefore, by tightening up time schedules and rationalizing production, the factory could adopt the 7-hour work day without production losses. On the basis of this projection, the local trade union committee finally concluded that the factory would begin to introduce a new system on October 1 and complete conversion of the entire factory by the end of the year. In the meantime, the factory would improve production processes by reorganizing its workforce and machines.

Nor could Krasnyi vyborzhets adopt the new system immediately. In August 1928, the factory management began to discuss the reduction of the work day. They expected the switch would take in two years, until September 1930, because they needed to organize significantly the production process. Above all, in order to maintain existing levels of labor productivity, they needed a significant amount of rubles for the introduction of new equipment. It was difficult for them, however, to find sufficient financing. Moreover, the trust that supervised the factory demanded that the transition period be shortened. Now the switch was to be finished by the end of 1929. Although around 20% of the workers reduced their work day to seven or six hours per day by July 1929, it was unclear even then that the factory could make all of its workers convert to the new system by the end of the year.¹²⁾

Other large factories also needed much preparation for the introduction of the 7-hour work day. For example, the Leningrad Oblast' Metalworkers' Trade Union Committee, discussing the new work day in six large metal plants, Izhorskii, the Maks Gel'ts factory, Znamia truda, etc., decided on March 14, 1929, to convert five factories to the new system by the end of the year. The one remaining factory was not given a precise date of introduction, because it

12) GARF, f. 5469, op. 13, d. 282, l. 17.

was not known when its preparation would be finished.¹³⁾

<Table 1> The Growth of the 7-Hour Work Day among Leningrad Industrial Workers, 1930-1931
(% of workers under the 7-hour work day to all workers)

Industrial branch	June 1, 1930 (%)	January 1, 1931 (%)	July 1, 1931 (%)	January 1, 1932	
				Total number of workers with 7-hour work day	%
Metal	39.6	59.8	89.4	202,555	96.0
Engineering	35.0	53.3	88.4	-	-
Electro-technical	54.0	79.8	98.4	-	-
Chemical	78.1	79.7	96.5	46,888	96.6
Wood	27.6	40.5	47.4	7,968	67.8
Paper	59.5	78.6	87.3	4,722	79.4
Leather-fur	55.5	99.5	100.0	5,785	100.0
Textile	41.3	68.3	83.1	48,183	93.3
Food	20.8	15.9	24.9	15,180	49.7
Clothes and dressing	44.0	65.6	64.7	43,509	72.7
Sewing	46.2	78.4	95.7	28,387	97.7
Leather shoes production	25.1	37.4	34.5	7,031	31.7
Printing	68.7	76.1	90.3	14,818	95.0
Power station	-	50.7	81.9	-	-
Entire industry	43.1	60.5	79.3	408,742	87.4

Sources: *Trud i profdvizhenie v Leningradskoi oblasti, 1932 g.*, 1932, p. 54, table 43; *Ekonomiko-statisticheskii spravochnik Leningradskoi oblasti, 1932*, tablitsy, pp. 434-435.

By the end of 1929, however, many metal plants in Leningrad managed to switch to the new system. After that, the number of metal plants that introduced it increased very rapidly. As of January 1, 1929, according to a survey, only 5.7% of all Leningrad industrial workers adopted the 7-hour work day. This rate leaped to 40.8% by January 1, 1930; and by July 1, 1932 almost all the workers — 95.4% — worked within the new system.¹⁴⁾ Even though these figures do not show the situation of the metal plants, the

13) GARF, f. 5469, op. 13, d. 41, l. 46; *Leningradskii metallist*, no. 9, March 30, 1929, p. 23.

14) *XV let diktatury proletariata, 1932*, tablitsy, p. 94, table 5; *Ekonomiko-statisticheskii spravochnik Leningradskoi oblasti, 1932*, tablitsy, pp. 434-435.

above table clearly suggests that they might show similar trend.

Thus, eight or nine of every ten Leningrad industrial workers worked under the 7-hour work day system by the end of 1931. Save for a few industrial sectors, such as wood, food and leather shoes production, almost all major sectors adopted the new system rapidly. The metal industry, in particular the electro-technical sector, was among the leaders in this switch, together with textiles and chemicals, which were two other main industries in Leningrad.¹⁵⁾

The reason why the 7-hour system was so quickly adopted by the Leningrad metal industry, unlike the continuous work week system to be treated in next section, was in part because the workers expected to reap real benefits without any decrease of their wages.¹⁶⁾ The workers had no reason to oppose its introduction as long as the factory management maintained the current levels of their wages. The factory managers, therefore, made every effort at least to maintain the existing wage levels by adopting “rationalization measures,” like following example of *Russkii dizel’* which was supposed to begin to switch to the new system in October 1929:

In order that the conversion of the factory to a 7-hour work day might not affect pays and wage-rates, the factory management elaborated a number of measures, which allow to keep workers’ pays at existing levels. The reduction of overtime works would save 25,000 rubles; reorganization of equipment and better utilization of machine tools would save 20,000 rubles; application of the metals ‘vidna’ would speed up processing 2-3 times so that it would give 40,000 rubles saving. At the same time, it was proposed

15) As of January 1, 1932, the number of metalworkers accounted for 46.0% of that of all Leningrad industrial workers. Following them, textile workers accounted for 11.1% and chemical workers 10.1%. Calculated from *XV let diktatury proletariata*, tablitsy, 1932, p. 74, table 5.

16) As expected, the metalworkers were very sensitive to the movement of their wages. For example, on July 1, 1929, there was a “brief dawdling” at the 1st turning shop in Goszavod No. 4 by turners who worried about new reduced wage-rates. Approximately a hundred of them did not start work for several hours, until the Labor Economics Department in the factory promised that it would review wage-rates. See E. I. Makarov, *et al.* (eds.) (2000), p. 394.

to improve assembly of machines, accelerate supply of complements, change methods of mechanical processing, achieve higher precision of processing, replace obsolete ways of processing at some sections, and speed up all production processes in general.¹⁷⁾

Clearly, workers who were sure of preserving their existing wages were likely to welcome the new reduced work day. According to a correspondent from the official organ of the local trade union of metalworkers who described the atmosphere among workers in the K. Marks factory when the new work day was introduced in early September 1929, workers did not reveal any negative attitudes at all.¹⁸⁾

Yesterday morning, a guard of the K. Marks factory was surprised: 500 workers showed up in the factory 30 minutes earlier than usual. 'Why did you come so early?' the surprised head guard asked the workers. 'Why? We work for 7 hours today, you know. We need to prepare instruments and check whether everything is all right,' the people who came said. The workers in the K. Marks showed a model for strong discipline and awareness on the first day of 7-hour work day. Instead of the usual 55 cases of tardiness, only 11 were carded on that day. According to a preliminary report, there was 4-5 times less absenteeism than usual in the factory.¹⁹⁾

Although it is unknown whether the workers in the K. Marks factory continued to have such positive attitudes toward the new system, it seems at least certain that there was almost no serious resistance from the metalworkers in the factories where it was introduced without reduction of their wages. Consequently, when the Central Committee of the party commented about the

17) *Leningradskii metallist*, no. 26, September 23, 1929, p. 19.

18) Before it converted to the 7-hour work day as of September 2, the K. Marks factory promised that it would review piece-work wage rates if average wages were lower than that during the months of May, June and August, 1929. See GARF, f. 5469, op. 13, d. 42, l. 36. Other metal plants, including Krasnyi putilovets and Russkii dizel', also had similar prerequisites. *Ibid.*, l. 93.

19) *Leningradskiaia pravda*, no. 201, September 3, 1929, p. 5.

results of the 7-hour work day in its decree in May 1930, its rhetoric was not necessarily empty: “the realization of the 7-hour work day already has yielded a number of positive economic and political results: production has increased; labor productivity and wages have grown; industrial injuries have declined somewhat; a new workforce has been drawn into production; and better conditions for raising the cultural levels of the working class have been created.”²⁰⁾ Some days later, when the organ of the Leningrad trade union of metalworkers emphasized the importance of this decree, of course, it did not forget to add what should be done in order to continue to enjoy these achievements: provincial trade unions, including the Leningrad trade union of metalworkers, “have to elaborate right wage-rates particularly carefully” in order not to reduce the existing wage levels of the workers.²¹⁾

How much free time did the metalworkers gain as a result of the adoption of the new work day? Clearly, their actual working hours, including overtime, decreased steadily since 1928/29, when the new system began to be introduced.

According to <Table 2>, the working hours of the Leningrad metalworkers declined to 7 hours by 1931, when nine out of every ten workers worked under the new system. Compared to laborers in other industrial sectors, however, generally the metalworkers did not experience shorter working hours. During the first half of 1932, for example, although they worked for noticeably less time per day than their counterparts in the paper and food industries, they worked as much as or more than other laborers. Particularly, between the metalworkers and the chemical and textile workers, who were the other two main groups in Leningrad industry, there were not many differences in work time.

20) *Metallist*, May 29, 1930, p. 38.

21) *Leningradskii metallist*, no. 15, May 30, 1930, p. 7.

<Table 2> Actual Working Hours in Leningrad Industry I
(1914 and 1927/28-1932)

Industrial branch	Average actual working hours per worker										
	June 1914	1927/28		1928/29		1929/30		1931		Jan.-Jun. 1932	
	Day	Month	Day	Month	Day	Month	Day	Month	Day	Month	Day
Metal	10.2	163.5	7.4	164.0	7.4	157.2	7.3	147.2	7.0	149.6	7.0
Chemical	10.2	161.1	7.5	152.9	7.2	145.2	7.0	140.7	7.0	137.8	6.8
Wood	10.8	163.9	7.5	160.6	7.3	157.2	7.3	151.4	7.4	148.4	7.2
Textile	9.7	157.8	7.2	156.5	7.2	149.4	7.2	147.8	7.1	151.7	7.0
Leather-fur and Leather shoes	-	162.0	7.3	160.5	7.2	154.8	7.2	146.3	7.0	154.0	7.2
Sewing	-	155.2	7.0	151.4	6.9	147.4	6.8	144.4	6.8	147.4	7.0
Paper and Printing	9.4	170.2	7.6	163.6	7.3	152.3	7.1	149.4	7.3	159.1	7.7
Food	10.1	160.6	7.3	159.4	7.2	150.4	7.0	144.2	7.0	138.2	6.7
		160.2	7.4	160.1	7.4	160.3	7.5	159.6	7.6	154.0	7.3
Entire industry	9.9	161.0	7.3	159.5	7.3	153.8	7.2	147.8	7.1	148.1	7.0

Source: *XV let diktatury proletariata*, 1932, tablitsy, p. 93, table 3.

Meanwhile, as the work day decreased to 7 hours, the monthly actual working time of metalworkers also was reduced, even though it increased slightly during the first half of 1932. In 1932, the metalworkers worked for 14 hours less per month than in 1927/28. In the same period, however, the monthly working hours of an average industrial worker in Leningrad also dropped by 13 hours, so that a metalworker still worked a little more than an average Leningrad industrial worker during the first half of 1932.²²⁾ In conclusion, the actual working hours of the Leningrad metalworkers continued to decrease until 1932, but workers in other sectors also witnessed the reduction of working hours to similar extent.

Notably, the introduction of the 7-hour work day led to a continuous

22) The actual working hours of Leningrad metalworkers seemed not to change much after 1932. Even though there is no specific information available on this question, the following statistics for the Soviet industry as a whole suggest as much. According to data released by the State Planning Commission in 1935, a worker employed in the Soviet engineering industry worked for 7 hours per day on September 1, 1933. Similarly, the daily working hours of a worker in the ferrous metallurgical industry was 6.99 hours, while the average of a worker in all Soviet industry was also 6.99 hours. See *SSSR v tsifrah*, 1935, p. 192, table 17.

increase in overtime work because factory managers needed to supplement the lost time owing to the new work day. The factory managers wanted to minimize this overtime work that cost the factory,²³⁾ but they failed. All Leningrad industrial workers experienced an increase of overtime work. This somewhat counteracted, if not nullified, the decrease of their actual working hours,²⁴⁾ as <Table 3> reveals.

<Table 3> Actual Working Hours in Leningrad Industry II
(1914 and 1926/27-1931)

Period	Average actual working hours per worker					
	Month			Day		
	Regular	Overtime	Total	Regular	Overtime	Total
1914	196.2	8.4	204.6	9.5	0.41	9.9
1926/27	159.3	1.1	160.4	7.3	0.05	7.3
1927/28	159.7	1.3	161.0	7.3	0.06	7.3
1928/29	158.2	1.3	159.5	7.2	0.06	7.3
1929/30	151.8	2.0	153.8	7.1	0.09	7.2
1931	144.9	2.9	147.8	7.0	0.14	7.1
Oct.-Dec. 1931	151.2	3.5	154.7	6.9	0.18	7.1

Source: *Trud i profdvizhenie v Leningradskoi oblasti 1932 g.*, 1932, p. 55, table 44.

Thus, the monthly average of overtime work among Leningrad industrial workers was very limited during the two years before 1928/29, but increased sharply by 1.6 hours during the next two years. In particular, during the last two months of 1931, it rose to 3.5 hours. The rate of overtime to actual working time was still low, but it is certain that owing to this rapid increase, the actual working hours reached 7.1 hours, even though the daily regular working hours dropped to 6.9.

Due to the adoption of the new work day, the metalworkers came to belong to the groups that had the most overtime work, as <Table 4> shows.

23) TsGaSPb, f. 2345, op. 26, d. 5, l. 12; TsGaSPb, f. 2345, op. 50, d. 16, ll. 124-125; *Leningradskii udarnik*, no. 6, January 27, 1932, p. 6; *Krasnyi putilovets*, no. 113, January 19, 1931, p. 1; *Bol'shevik*, no. 42, March 13, 1932, p. 1.

24) Regarding overtime work, Schwarz commented that "the prevalence of overtime work often brought actual working hours far above the limit," but this is too exaggerated an evaluation as far as Leningrad industry was concerned, as the <Table 3> shows. See Solomon M. Schwarz (1952), p. 268.

<Table 4> Overtime Work in Leningrad Industry, 1929/30-1931
(average per month)

Industrial branch	The average overtime working hours per worker		% of workers who worked overtime		The average overtime working hours per worker who worked overtime	
	1929/30	1931	1929/30	1931	1929/30	1931
Metal	3.1	4.6	17.3	20.8	17.4	21.7
Engineering	4.0	5.6	21.0	24.4	18.2	22.7
Electro-technical	1.9	2.6	11.9	13.2	16.1	19.4
Chemical	1.3	1.2	10.0	8.8	12.8	13.5
Rubber	1.0	0.9	8.1	6.7	11.9	13.6
Wood	1.2	1.2	6.7	7.0	18.0	16.1
Paper	5.0	5.8	30.7	30.9	15.7	18.4
Leather-fur	0.5	0.6	4.1	3.9	11.6	13.8
Textile	0.8	1.0	6.3	6.7	12.3	15.1
Food	1.4	2.9	10.2	17.2	12.9	17.8
Clothes and dressing	0.2	0.3	1.9	2.3	12.0	14.0
Sewing	0.2	0.2	1.6	1.7	11.7	14.3
Leather shoes	0.2	0.3	1.5	2.1	10.5	15.1
Printing	2.2	3.4	15.2	17.7	14.3	17.9
Entire industry	2.0	2.9	12.0	14.4	15.9	20.0

Source: *Trud i profdvizhenie v Leningradskoi oblasti 1932 g.*, 1932, p. 57, table 46.

Thus, the metalworkers worked overtime more than any other workers except those employed in the paper industry. In particular, engineering workers worked overtime twice as much as the average industrial worker in the city. The metal industry depended on the most overtime work in part because it experienced a severe shortage of laborers as its production developed more rapidly than that in any other industrial sector during this period. In terms of gross production, for example, the share of the metal-working industry of all Leningrad industry doubled from 16.8% to 30.5% from 1926/27 to 1932.²⁵⁾

Some large metal plants adopted overtime work on a large scale. According to a contemporary survey by the local trade union of engineering workers, the ratio of overtime to total actual working time in 1931 was 2.9%, which the reporter evaluated as a “huge ratio,” because a smallest increase of overtime work could be a big burden on factory managers who had a very limited financing. The ratios of five of the fifteen metal plants under survey, however,

25) *XV let diktatury proletariata*, 1932, p. 41.

far surpassed this average. The factory with the highest ratio was the Lenin factory, which recorded 5.9%. The Stalin factory reached 4.8% and Il'ich and Izhorskii were both 4.7%. The K. Marks factory reached 3.6%. Some factories, including the Voskov factory, the Kirov factory and Krasnaia vagranka, showed ratios lower than 1%, but did not noticeably pull down the average rate of the entire Leningrad engineering industry.²⁶⁾

The highest levels of overtime work by metalworkers seemed to remain unchanged as of 1934, according to a formal report about Leningrad heavy industry to the Seventh Soviet Congress in 1935.

<Table 5> Overtime Working Hours in Leningrad Heavy Industry, 1931-1934 (% of overtime working hours to the total actual working hours)

Industrial branch	1931	1932	1933	The first ten months of 1934
Energy supply	-	-	2.4	2.1
Metal-working	3.2	3.4	2.3	4.0
Electro-technical	1.8	2.0	1.5	2.5
Chemical	0.8	0.5	0.5	0.6
Production of construction materials	2.4	1.8	2.1	1.5
Entire industry under People's Commissariat of Heavy Industry of Leningrad <i>oblast'</i>	2.5	2.5	1.8	3.0

Source: *Leningradskaia tiazhelaia promyshlennost' k VII s"ezdu sovetov*, 1935, p. 228, table XII.

As <Table 5> shows, laborers in the metal-working industry always worked much more overtime than those in any other heavy industrial sector during 1931-1934. Moreover, the rate steadily increased, reaching as high as 4% in 1934, although it dropped substantially in 1933.²⁷⁾

In terms of annual working days, metalworkers worked longer than any other workers except those employed in the sewing industry and the production of leather shoes, as <Table 6> shows.

26) TsGASPB, f. 2345, op. 26, d. 5, ll. 12 and 15.

27) The steep decrease in 1933 was probably caused by the substantial reduction of production owing to the economic crisis that began in 1932, continuing on a full scale through 1933. See Alec Nove (1992), pp. 226-227.

<Table 6> Actual Working Days in Leningrad Industry, 1931

Industrial branch	Average annual actual working days per worker				
	Actual working days	Stoppage	Holidays and rest days	Non-appearance	Total
Metal	250.5	0.2	72.7	41.6	365
Chemical	243.1	0.2	76.8	44.9	365
Wood	245.6	0.2	73.9	45.3	365
Paper	244.9	0.4	75.5	44.2	365
Leather-fur	249.9	-	71.8	43.3	365
Textile	249.1	0.2	71.1	44.6	365
Food	248.9	0.4	70.8	44.9	365
Clothes and dressing	253.5	0.1	75.5	35.9	365
Sewing	255.7	0.2	77.5	31.6	365
Production of leather shoes	252.9	-	71.5	40.6	365
Printing	249.2	0.2	71.3	44.3	365
Entire industry	249.7	0.2	73.2	41.9	365

Source: *XV let diktatury proletariata, tablitsy*, 1932, p. 92, table 2.

The reason why metalworkers had longer working days than most other workers was mainly because of their shorter holidays, rest days and other non-appearances for work due to regular leaves, absenteeism and illness. In particular, the shorter holidays and rest days had something to do with the 6-day work week, which was widely introduced as a part of the continuous production system at the time.²⁸⁾

Even so, Leningrad industrial workers as a whole, including metalworkers, came to experience shorter actual working days by the early 1930s.

28) Regarding the continuous production system, see the next section of this paper. As of late 1929, before the wide adoption of the continuous work week, Soviet industrial workers were known to enjoy 79 rest days per year. It was expected that they would not lose hardly any rest days under the 5-day week that would guarantee 78 rest days, but under 6-day and 7-day weeks, 12 and 22 rest days would be lost. Even if the Soviet authorities encouraged factory managers to compensate workers for losing them, apparently they failed to do so in general, in part because succeeding in this was “substantially complicated.” See *Leningradskii metallist*, no. 31/32, November 18, 1929, p. 4. As was clearly shown in <Table 8> in the next section, the more 6-day week system was adopted, the less rest days the workers had. In contrast, the more 5-day week was introduced, the more rest days they enjoyed.

<Table 7> Actual Working Days in Main Leningrad Industries,
1927/28-1931

Industrial branch	Average annual actual working days per worker				
	1927/28	1928/29	1929/30	1930	1931
Metal	265.9	266.5	258.8	252.9	250.5
Chemical	257.6	255.9	250.2	243.4	243.1
Textile	261.4	259.7	250.5	244.4	249.1
Food	261.4	262.1	255.2	250.5	248.9
Entire industry	263.0	263.2	254.3	250.6	249.7

Sources: *Trud i profdvizhenie v Leningradskoi oblasti 1932 g.*, 1932, p. 49, table 39; *Ekonomiko-statisticheskii spravochnik Leningradskoi oblasti*, 1932, tablitsy, p. 437.

The annual actual working days of Leningrad metalworkers were reduced by 15 days during the three years between 1927/28 and 1931, while those of all industrial workers decreased by 13 days. Despite the increased reduction, however, metalworkers always worked longer than any other workers' group in principal industrial sectors during this period.

Even though the metalworkers enjoyed the reduction of working hours and days, they experienced an increase in work intensity. This was sufficiently expected at the time when the new work day system was initiated in metal plants. As mentioned above, one of the most important prerequisites in adopting the new work schedules was to maintain existing total production by increasing labor productivity. For this, factory managers were usually supposed to take various "rationalization measures," including the tightening up of time-schedules, resulting directly and indirectly in a great increase in work intensity. The necessity of such measures was repeatedly emphasized in the press. For example, in Pnevmatika, which introduced the new work day system earlier than any other factory in Leningrad, the following complaints were heard even two months later:

They did not start to repair machine tools for new work at the very moment when previous work was finished. So workers were forced to wait until a machine setter began to repair. How much time was lost for repairs, and how much was paid for stoppages!... Now they repair "free" machine tools in advance. But stoppages owing to repair still were not totally

eliminated. It is possible to eliminate them 100% by expanding equipment. The waiting time for receiving instruments was reduced. They give out them faster. "It would be possible to reduce this time more," say workers.²⁹⁾

In *Russkii dizel'* also, such steps leading ultimately to an increase in work intensity were assumed to be main methods for supplementing anticipated lost time, when the factory decided to introduce 7-hour work day in October 1929: "In converting to the 7-hour work day the factory will lose 10.3% of working hours. But 4% can be made up by the removal of overtime work, while 3% can be saved by more accurate start and end of work. 1% will be compensated by *uplotnenie* of time in evening and night labor that is being conducted without sufficient control and piece-work so that the working time does not surpass six hours per shift."³⁰⁾

Consequently, the control of working time of workers grew much stricter. The K. Marks factory, in which a factory guard was surprised at earlier appearance of many workers on the first day of the 7-hour, as I described, offers a good example for this. Another reporter who visited the factory on the same day described how closely working time was controlled.

For everyone, the test is not trivial... Really the whole working time is under test.... "They showed up at machine tools for 5 minutes before the start of work," say all masters in one voice.... As soon as the bell rang, it turned out that there was no machine tool that was not operating. Usually even during the socialist competition, 5-10 minutes passed already before machine tools set in motion. Now planers, turners and other machine operators answer questions right away from early morning: "just eight minutes remain." The master of planing machines and the vertical lathe shop, comrade Kalinin, remarks: "every worker knows beforehand his 7-hour norm of output, and knows how many minutes are reserved for smoking, for brief break and for elucidation of misunderstanding...."³¹⁾

29) *Leningradskii metallist*, no. 9, March 30, 1929, p. 22.

30) *Ibid.*, p. 23.

31) *Leningradskii metallist*, no. 25, September 11, 1929, p. 18.

Obviously, such strict control of working time was not limited to the early period of the 7-hour work day. Because it was one of the most important issues that could determine the success of the new system, factory management could not emphasize it enough, as long as the work day remained reduced. A contemporary formal report about Leningrad heavy industry³²⁾ shows how widely that controlling was conducted up to 1934.

The struggle with the loss of working time that developed in Leningrad industry in 1933 provided some results. While in the first half of 1933, the loss of working time within a work day reached 25-30% in a number of factories, by the end of the year, we successfully reduced it as a result of concentration of attention on this most important problem. The work by factory management to eliminate wasted working time in 1934 developed in two directions. On the one hand, measures were taken that were directed to strengthening of discipline, to struggle with late access to work and its ending early; on the other hand, measures of organizational order were taken to improve the servicing of work place. The most important among these measures were the following: (1) Establishment of signaling from work sites about any lack of instruments, materials, etc. (2) Apportionment of auxiliary workers for the service of production corners (for transport of materials, parts, instruments, etc.) (3) Organization of controllers' communication and effective regulation of work that served work sites. (4) Preparation of work sites before the start of work and supply of duty details, materials, etc., so that workers might not lose time while setting to work. However, such results that Leningrad industry achieved in its struggle with the wasted working time remained very insufficient.³³⁾

32) For good individual examples, consult articles, entitled "Work full 7 hours!" and "Save working time!" in *Leningradskaiia pravda*, no. 189, August 16, 1933, p. 1 and no. 193, August 21, 1933, p. 1. In these reports, one of the authors lamented that in many metal plants "the actual working time was much less than 7 hours": for example, the Stalin factory 6 hours, Elektrosila 6, Bol'shevik 5.5, and the Baltic shipyard 5.25. Under these circumstances, it is fully understandable that another author cried "Don't lose idle a minute of working time!" in a later article. See *Leningradskaiia pravda*, no. 227, September 30, 1933, p. 1.

33) *Leningradskaiia tiazhelaia promyshlennost' v I polugodii 1934 g.*, 1934, pp. 92-93. Also see *Leningradskaiia tiazhelaia promyshlennost' k VII s'ezdu sovetov*, 1935, p. 142.

Surely, the above efforts ultimately leading to a significant increase in work intensity were applied to the metal industry as well.

3. The Continuous Work Week

Another important change in the labor conditions of the metalworkers was the introduction of the continuous work week, or as it was usually called, the continuous production week. It aimed to increase production by converting plants to continuous operation without idle machinery, i.e., without days of rest. It is known that the idea itself was first expressed in 1922, when a code of laws about labor was approved by a commission of the Central Executive Committee. In 1926, G. K. Ordzhonikidze, an old Bolshevik, repeated this idea in another commission appointed to consider “measures for struggling with private capital.” However, it was not until 1929, three years later, that the idea was considered seriously and finally adopted by Soviet leaders. In February and March, this theme was once again taken up in the national and provincial press.³⁴⁾ In May, Yurii M. Larin, a well-known Soviet writer, put it up for discussion in the course of the debate on the report submitted by the chairman of Council of the People’s Commissars, A. I. Rykov, to the Fifth All-Union Soviet Congress. Even though the Congress did not take up his suggestion, it was eventually adopted by the Soviet government on August 26 in its decree “On the Change-over to Continuous Production in Plants and Institutions of the USSR,” which ordered a “systematic conversion” on a national scale.³⁵⁾

34) *Metallist*, no. 28, July 31, 1929, p. 10.

35) For more details, see Solomon M. Schwarz (1952), pp. 268-269. In another article, Schwarz maintains that the 1922 and 1926 cases were not origins because the point of both considered to be was not the continuous work week, but the reduction of the number of holidays. Instead, it was Larin who first proposed the idea earnestly. Immediately after that, the publishing market was flooded with pamphlets and books on continuous production. See Solomon M. Schwarz (1931), vol. 23, no. 2, pp. 158-160.

In the process of debate in the press, three variations of rearrangements of time schedules surfaced as potential options: (1) A continuous production year with preservation of the 7-day week with five work days and an 8-hour work day. (2) An increase of the number of shifts to utilize holidays. (3) A continuous production year with a 6-day week with five work days and a 7-hour work day. Among these options, Leningrad factories were known to support the third option, probably because the switch to 7-hour operations was still widely under way. Thus, according to this model, one week would be 6 days, Sunday being abolished. There would be 60 work weeks in a year. In 6-day weeks, all workers would work for seven hours during five days. Every five machine tools there would be six workers. One worker, as a reserve, would take a machine tool in turn during the day whenever a worker working on it had a rest day. Sundays and other so-called special rest days are covered by 60 rest days (one free day after every five work days). In addition, there would be a remaining five days for “revolutionary holidays” in which all workers would be free at the same time.³⁶⁾

Like the introduction of the 7-hour work day system, it was impossible to adopt the continuous work week in all Leningrad metal plants at once. It likewise required a “preparation period” during which the existing production process had to be changed in accordance with new time schedules. Regarding this, the most important thing was that materials needed to be supplied on time. This problem was more serious particularly because the Leningrad metal industry was dependent mainly on metallurgy, such as founding cast iron, non-ferrous metal, sheet iron, beams, tin and brass, from outside the city. It was estimated that 16 to 20% more of such materials would be needed if the new work week was to be introduced under the existing shift system (one or two shifts a day). Equally important was the reorganization of shifts and the order of work. This would be either very simple or extremely complicated, depending on the production process of factories. The large engineering factories and shipyards had especially great difficulties in shift arrangement

36) *Metallist*, no. 28, July 31, 1929, p. 10.

because their production did not consist of processes precisely divided by operations in which every worker could continue the same work. Additionally, the factories needed to consider the situations of engineers and other personnel and of equipment and energy supply.³⁷⁾

When the metal industry adopted the continuous production system, its general situation reflected these technical difficulties. There was its “practice” among some students of higher educational institutions and technical colleges in metal plants such as Znamia truda No. 2, Promet, the Baltic shipyard and the Kulakov factory at least as early as by February 1929.³⁸⁾ Several shops in Krasnyi vyborzhets, Il’ich and Krasnyi putilovets also launched new time schedules by summer, but most large metal plants did not start it until late in the year. In addition, even in a few factories that adopted new system, it was practiced only partially at some shops of secondary significance. Thus, merely 25% of all workers in Sevkabel’ had switched to the new work week by October 1. At that point, Elektrosila also decided to introduce it to pressing, material, instrument and automatic shops, which consisted of 20% of all workers. The Lenin factory was slower. It decided to launch the new work week at some shops, including machine repair and construction shops, on September 1, but the number of their workers accounted for only 5% of all workers,³⁹⁾ even though a steel founding shop would join this group with the 5-day week system on October 1.⁴⁰⁾ The Sverdlov factory also was steady but slow in its introduction of the new work week. The factory only launched new time schedules at instrument and repair shops on October 15 but determined to introduce it to other places, such as assembly shops, by January 1930. Additionally, Ruskii dizel’ and Ekonomazer did not start the continuous work week until November.⁴¹⁾

After 1930, however, the situation in the metal industry changed

37) *Leningradskii metallist*, no. 17, June 22, 1929, p. 5.

38) GARF, f. 5469, op. 13, d. 356, ll. 1-40.

39) GARF, f. 5469, op. 13, d. 282, ll. 49-50.

40) *Leningradskii metallist*, no. 29, October 22, 1929, p. 17.

41) GARF, f. 5469, op. 13, d. 282, ll. 49-50.

significantly, as preparation finished in each factory and the new system “enjoyed great popularity and support among wide masses of workers in general,” at least according to a central trade union magazine.⁴²⁾ Although there are no data available regarding the state of the Leningrad metal industry at the time, some information about all Soviet and Leningrad industry suggests that conversion of the Leningrad metal industry was carried out at a feverish pace. According to the Leningrad Oblast’ Council on the National Economy, 53% of all Leningrad industrial workers were supposed to adopt new system by 1929/30, but the conversion had already taken place in most of main factories in Leningrad by the end of 1929.⁴³⁾ Meanwhile, in the Leningrad metal industry, around 70% of all workers were expected to have the new system by the end of 1929/30.⁴⁴⁾

In addition, a Soviet government committee on that system reported that by April 1, 1930, 63% of all industrial workers had already gone over to the continuous work week.⁴⁵⁾ The rate increased to 69.2% by July 1 of the year.⁴⁶⁾ Owing to such successful developments, the above committee urged that the switch to the new system should be completed during 1931/32, except in the textile industry that had difficulties in the supply of raw materials.⁴⁷⁾

The whole Soviet metal industry also experienced its quick introduction, even though the rate of switch of the metal-working industry was lower than the average rate of all Soviet industries for producers’ goods. According to data of the Supreme Economic Council of the Soviet Union, as of April 1, 1930, the ratio of workers with a continuous work week in Soviet metal-working industry was 63.1%; and that in electro-technical industry was 77.9%. On the other hand, the average rate in all Soviet industries for producers’ goods was 71.6%.⁴⁸⁾

42) *Metallist*, no. 42, November 18, 1929, p. 5.

43) *Smena*, no. 286, December 13, 1929, p. 3.

44) *Leningradskii metallist*, no. 35, December 21, 1929, p. 12.

45) *Pravda*, June 25, 1930, p. 1.

46) *Za industrializatsiiu*, July 22, 1930, p. 1.

47) *Pravda*, June 25, 1930, p. 2.

Such successful switches continued. It was reported that almost 80% of all factories in Leningrad adopted the continuous work week by April 1931.⁴⁹⁾ However, because most factories were converted only partially, the ratio of workers with the conversion was relatively low. <Table 8> shows the extent of conversion in some Leningrad metal plants.⁵⁰⁾

<Table 8> The Ratio of Workers with the Continuous Work Week at Shops in Leningrad Metal Plants, July 2, 1931

Metal plant	Total number of workers	Workers with the continuous work week	
		Number	%
The Stalin	3,233	1,765	54.6
Goszavod No.4	6,322	3,115	49.2
The Voskov	2,035	760	37.3
The Molotov	3,982	3,071	77.1
The K. Marks	1,825	1,442	79.0
Vpered	52	52	100.0
Total	17,399	10,205	58.7

Source: TsGASPB, f. 2345, op. 10, d. 12, l. 161.

In fact, it was reported that as of July 1, 1931, 62.7% of all metalworkers in Leningrad were working under continuous operations. Among them, the rates of workers in the engineering and electro-technical sectors were 64.1% and 66.2%. Meanwhile, the average of workers in all Leningrad industry recorded 58.2%.⁵¹⁾

Despite such fast development of the continuous work week in 1930-1931, however, the new system soon turned out to be a failure. It was never firmly established among Leningrad metalworkers thereafter. In mid-1932, by which point almost all metal plants adopted the 5-day or 6-day work week, only a few

48) Ia. M. Bineman (ed.) (1930), pp. 22-23.

49) *Leningradskaia pravda*, no. 116, April 27, 1931, p. 3.

50) As of July 1931, the rates of shops with conversion to all shops in a factory were very different. For example, the Molotov factory reached 80-90%; Bol'shevsk and Goszavod No. 4 60-70%; and the Stalin factory, the Voskov factory and the K. Marks factory 40-50%. See TsGASPB, f. 2345, op. 10, d. 12, ll. 160-161.

51) *Ekonomiko-statisticheskikh spravochnik Leningradskoii oblasti*, 1932, pp. 434-435, table 11.

succeeded in performing “uninterrupted production.” In most factories, metalworkers never worked in a “continuous” manner, as <Table 9> clearly shows.

As of July 1, 1932, only one of five workers in the metal-working and electro-technical industry worked in a continuous-work week manner. This is the lowest rate, except for in the textile and printing industries and the production of leather shoes, amounting to around 10% below the average rate of all Leningrad industry. This means that the metal industry experienced serious difficulties in adopting it. Of course, other industrial sectors, such as chemicals, construction materials and food also, suffered such difficulties, but the extent was not as great. The majority of workers in some sectors, including power stations, sewing, paper and food, worked under continuous production.

<Table 9> The Distribution of Leningrad Industrial Workers
by the Type of Work Week, July 1, 1932

Industrial branch	Total Number of workers	%						
		Interrupted work week			Continuous work week			
		Total	5-day week	6-day week	7-day week	Total	5-day week	6-day week
Power station	4,635	21.6	0.2	21.4	-	78.4	23.1	55.3
Metal-working	178,416	80.3	1.3	78.5	0.5	19.7	17.9	1.8
Engineering	138,525	79.3	1.4	77.9	-	20.7	18.9	1.8
Electro-technical	44,536	85.1	-	85.1	-	14.9	13.5	1.4
Chemical	36,986	48.6	0.3	46.5	1.8	51.4	48.5	2.9
Rubber	27,940	49.8	0.2	49.6	-	50.2	50.2	-
Construction material	12,801	57.7	-	54.9	2.8	42.3	33.8	8.5
Wood (excluding furniture)	7,578	54.3	-	49.1	5.2	45.7	38.4	7.3
Textile	48,594	82.7	0.4	82.3	-	17.3	15.0	2.3
Production of clothes, shoes and leather	67,288	39.3	1.9	37.4	-	60.7	58.8	1.9
Leather-fur	6,031	56.2	-	56.2	-	43.8	43.8	-
Production of leather shoes	20,854	95.3	8.7	86.6	-	4.7	4.7	-
Sewing	30,344	25.3	1.3	24.0	-	74.7	71.6	3.1
Production of household Articles	3,381	72.9	-	72.9	-	27.1	26.7	0.4
Production of cultural service	23,216	79.1	2.1	73.8	3.2	20.9	17.0	3.9
Paper	3,019	40.3	9.2	31.1	-	59.7	51.6	8.1
Printing and cardboard box	15,643	93.1	-	88.7	4.4	6.9	6.9	-
Food	29,543	41.7	0.4	40.6	0.7	58.3	56.4	1.9
Entire Industry	452,757	70.4	1.0	68.8	0.6	29.6	26.9	2.7

Source: *XV let diktatury proletariata*, 1932, tablitsy, p. 94, table 4.

Meanwhile, even though the metal industry did not adopt the continuous production extensively, almost all of its workers worked under the newly introduced week. Interestingly, as the table reveals, the metalworkers under continuous work week preferred the 5-day week to the 6-day. In contrast, the overwhelming majority of workers under the interrupted work week had the 6-day week. This trend is not only true of the metal industry. All Leningrad industrial sectors showed a similar trend, except that the workers in power stations tended to select a 6-day week system under the continuous work week. Given that Leningrad factories preferred the 6-day week during the debating before its introduction, it is ironic that almost all of the workers under the 6-day week were interrupted.

Continuous production was incompletely realized because the metal plants failed to introduce a multi-shift system extensively to make production “continuous” in a true sense of the word. As was shown, the most important in the idea of continuous production was to maximize production by not having machines idle even for a moment, that is, making production “uninterrupted.” In order to realize this idea, it was necessary to make machines work not only 365 days a year, but also 24 hours a day, as a Soviet writer emphasized in the energetic debate about the continuous production right after the Fifth All-Union Soviet Congress:

Nobody doubts that it is extremely unreasonable to leave machine tools or machines inoperative for 16 hours every day and 42 hours from Saturday through Sunday. Under one-shift system, the equipment is utilized for 46 hours and does not work for 122 hours every week. That is, it operates only for one fourth of a given time and stays idle for three fourth. In the meantime, we seek any possibilities for development of production with maximum economic effectiveness. These possibilities lie in both multi-shift work system and the continuous week, where it can be realized. The benefits from these measures are enormous: the continuous work greatly increase product output, brings four billion rubles to the country in a year, draws 400,000 workers into production, and promises saving in overhead expenses and speeding up of turnover of resources.⁵²⁾

52) *Leningradskii metallist*, no. 17, June 22, 1929, p. 5.

Naturally the best thing would be three-shift system with 7-hour or 8-hour work day. Thus, a number of metal plants in Leningrad partially adopted such a system, according to the nature of the shop or trade. For example, in the summer of 1931, the Stalin factory, Goszavod No. 4, the Molotov factory, Russkii dizel', the K. Marks factory and Bol'shevik had workers who worked for 7 1/2 hours a day in a three-shift by 5-day week.⁵³⁾ In addition, an overwhelming majority of machine operators (*stanochniki*)⁵⁴⁾ worked by a three-shift system. As of March 1, 1932, 100% of the machine operators in the Stalin factory and 91.1% in Krasnyi putilovets adopted three-shifts. The entire Leningrad metal industry recorded 87.3%.⁵⁵⁾

A great majority of Leningrad metalworkers, however, worked under a one-shift or at most two-shift system, as <Table 10> reveals.

<Table 10> Shift Coefficient⁵⁶⁾ in Leningrad Industry, 1929-1932

Industrial branch	1929	1930	1931	February 1932
Metal	1.2	1.3	1.4	1.6
Engineering	1.2	1.3	1.4	-
Electro-technical	-	1.3	1.4	-
Chemical	1.4	1.6	1.6	-
Textile	1.7	1.7	1.9	1.9
Sewing	1.7	1.6	1.9	-
Electric power station	-	1.9	1.9	-
Paper	1.5	1.5	1.6	-
Printing	1.2	1.2	1.4	-
Wood	1.4	1.4	1.6	-
Leather-fur	1.3	1.3	1.4	-
Food	1.2	1.1	1.6	-
Entire Leningrad industry	1.3	1.4	1.6*	1.8

Sources: *Ekonomiko-stasticheskiĭ spravochnik Leningradskoi oblasti*, 1932, tablitsy, pp. 434-435; *Trud i profdvizhenie v Leningradskoi oblasti*, 1932 g., 1932, p. 58, table 47.

* According to the former source, it is 1.5 during the first half of 1931.

53) TsGASPB, f. 2345, op. 10, d. 12, l. 170.

54) They denote industrial workers who work with machine-tools such as mechanical machine tools, presses, scissors and hammers.

55) *Trud i profdvizhenie v Leningradskoi oblasti*, 1932 g., 1932, p. 58, table 48.

56) Ratio of total number of man-days to number of man-days on the most numerous shift. It denotes the average number of shifts in a factory.

Thus, even though the shift coefficient steadily increased since the continuous production was introduced, it was still under 2 as of early 1932. In particular, a multi-shift system in the metal industry was less popular than in chemical and textile industries; and even all Leningrad industry recorded a higher average rate than the metal industry.

Moreover, it seems that three-shift schedules were less and less adopted after 1932. According to a yearbook of labor statistics published by the Central Statistical Office of the Soviet Union in 1936, the coefficient in Soviet industry as a whole dropped from 1.73 in 1932 to 1.70 in 1933, 1.61 in 1935. Among Soviet industrial sectors, it was 1.40 in engineering industry in 1935.⁵⁷⁾ Based on data from that yearbook, Schwarz computed that in the same year the rates of Soviet workers employed in the engineering industry on different schedules were as followings: one-shift 51.7%, two-shift 22.4%, three-shift 25.5%, and four-shift 0.4%. On the other hand, in all Soviet industry, one-shift was 38.2%, two-shift 22.8%, three-shift 35.4%, and four-shift 3.6%.⁵⁸⁾ Therefore, under the condition that most of the metalworkers worked by a one or two-shift system, the growth of their utilization of equipment could not be higher than a given limitation. For example, some factories, including *Russkii dizel'*, the K. Marks factory and Goszavod No. 4, were estimated to increase its utilization of equipment by only 20-25% right after they introduced the continuous work week in 1931. In contrast, in the case of a metal plant that succeeded in increasing 40%, more than half of that achievement was attributed to the introduction of the 2nd and 3rd shifts.⁵⁹⁾

There are several reasons for the incomplete continuous work week system and its ultimate decline in the metal industry particularly after 1932. First of all, the changeover was sometimes undertaken superficially, without adequate preparation, from an economic, technical, or organizational standpoint. The following statement was openly made in a report to the Presidium of the

57) A. S. Popov (ed.) (1936), pp. 79 and 96.

58) Solomon M. Schwarz (1952), pp. 277-278.

59) TsGASpB, f. 2345, op. 10, d. 12, ll. 163-164.

Supreme Economic Council in mid-1930.

In spite of the satisfactory number of undertakings in which the system of the continuous work week has been adopted, the changeover in many of them is only nominal.... In many branches of industry, including engineering and metallurgy, the introduction of the continuous work week is only fictitious.

In particular, such a situation was true for “the majority of the Leningrad industries.”⁶⁰⁾ A secret letter in the summer of 1929 of the Volodarsk district committee of the party to all of its basic organizations clearly shows such rough-and-ready method of administration and its results. Even though the following is about an electrical power station, it is worthwhile to cite as a typical example.

Promstroi of the 5th GES received an order from the bureaucratic authorities to convert to the continuous work week in only three days. This problem was rushed through without any serious discussion at the party and Komsomol meetings and among individual groups of the workers. At a general meeting of the workers, the suggestion about conversion to the continuous work week was almost unanimously rejected. After then it was revealed that activities against the conversion were conducted in smoking rooms during three days, and moreover its organizers were a former chauffeur of Denikin and several kulaks. Having utilized a tradition that they work overtime on Sundays, they drew the overwhelming mass of seasonal workers into their side. The party members did not discern enemies. During the conversation in smoking rooms, they took a comprising attitude, and did not attend a meeting of the workers in most cases.... After this failure, the organization conducted a big explanation activity, and the conversion to the continuous work week was realized.⁶¹⁾

Of course, here the protest from the workers was not caused by agitation of “enemies” but instead by the unreasonable emphasis by bureaucratic authorities on quantitative growth.

60) *Za industrializatsiiu*, August 1, 1930. Cited from Solomon M. Schwarz (1931), p. 165.

61) E. I. Makarov, et al. (eds.) (2000), pp. 398-399.

Such complaints must have been strong among metalworkers from the beginning of the campaign, for ultimately they made another contribution to its decline. But the Soviet authorities still wanted to attribute that waning to “enemies,” as a Soviet writer wrote in the central organ of the trade union of metalworkers at the end of 1929:

The conversion to the continuous work week faces opposition from our class enemies because it is a key lever in socialist construction, strengthening the position of the proletariat in the class struggle developing in our country. Class enemies exist everywhere, come out against the continuous work week, and slander its initiators, trying to destroy it.⁶²⁾

Thus, for Soviet authorities that considered continuous production “as one of the ways leading to much more rapid development of socialist offensive,” it became urgent to prevent wider propagation of resistance among the workers. For this, “cultural workers” in metalworkers’ trade union organization, who had the task of “raising political levels” of the general workers and “remaking them into new cadres of workers ideologically,” had to conduct “wide explanation of the political and economic significance of the continuous production week to the working masses.” This was the case particularly among newly entered workers most of whom were not familiar with industrial environs.⁶³⁾ However, the “cultural workers” were frequently unsuccessful. At some shops in the Lenin factory, “according to old habit,” some workers did not show up for work on Sundays, the “traditional days of rest.”⁶⁴⁾ In addition, inconvenient transportation was an excuse used by workers who did not welcome the new work week. For instance, many workers in Krasnyi vyborzhets and the Voroshilov non-ferrous metallurgical factory who worked overnight had to come earlier and await the start of their work on the street, because trams did not run from 1:00 to 6:00 in the mornings.⁶⁵⁾

62) *Metallist*, no. 42, November 18, 1929, p. 4.

63) *Leningradskii metallist*, no. 27, September 30, 1929, p. 5.

64) *Leningradskii metallist*, no. 29, October 22, 1929, p. 17.

65) GARF, f. 5469, op. 13, d. 282, l. 82.

Along with inappropriate preparation and resultant wide protests from the workers, another factor contributing to the ultimate decline of the continuous production was the lack of workforce, particularly skilled workers, raw materials and instruments. As was mentioned repeatedly in contemporary media and formal reports, many metal plants suffered from chronic insufficient supply of workforce and production materials. According to a report by the Leningrad Oblast' metalworkers' Trade Union Committee which surveyed eight large metal plants with continuous production, including Bol'shevik, the Stalin factory and the K. Marks factory, in mid-1931, more than half of them experienced such shortages. Among plants, three factories suffered a lack of skilled labor and engineers, while two factories were short of instruments and equipment.⁶⁶⁾ Moreover, not all of the factories under survey even fully utilized the existing workforce, so that a number of shops could not convert to the continuous work week. This occurred, for example, in the Stalin factory.⁶⁷⁾

As for production materials, the situation was equally serious. In late October 1930, a conference of vice-chairmen of the Leningrad Oblast' Council on the National Economy confirmed extreme raw materials' shortages, stating that:

The supply of Leningrad industry with basic forms of materials does not correspond to the size of enlarged output during the shock quarter⁶⁸⁾ of this year. In particular, the sufficiency of metal industry with ferrous metals reaches the following size: 40% of iron castings, 45% of shaped iron and 10% of sheet iron; and 50% of semi-finished products of non-ferrous metals.⁶⁹⁾

Thus, suffering from wide opposition from workers and severe shortages of materials and workforce, the Leningrad metal industry became one of the

66) TsGASPB, f. 2345, op. 10, d. 12, l. 169.

67) TsGASPB, f. 2345, op. 10, d. 12, l. 172.

68) It covers a period from October 1 to December 31, 1930. It was devised to deal with the remaining last three months of 1930, as from 1931 the economic year was in keeping with the calendar year.

69) S. I. Tiul'panov (ed.) (1967), p. 204.

industrial sectors that experienced the most serious difficulties in adopting the continuous work week that the Soviet regime pushed ambitiously to increase production.

4. Labor Protection

Finally, another important factor that affected the general labor conditions of the Leningrad metalworkers was work safety. Concerning this, Schwarz emphasizes that from the beginning to the end of 1930s, safety standards deteriorated. To validate this suggestion, he cited several examples from the late 1930s, strongly implying that these were also true of the late 1920s and early 1930s, when “the speed-up has become the gospel of the economic leaders.” A typical example of his concerns working environments in the Stalingrad and Kharkov tractor plants in 1935. According to a man from a central trade union, whom Schwarz cited, these “new, well-equipped modern” tractor plants belonged to a “highly regarded manufacturing industry of recent origin”: “the plants were designed to turn out 72 tractors per shift. With output more than doubled, they cannot meet safety requirements in their present neglected condition. The factories have been converted to Stakhanov methods, but the ventilation systems are unchanged, and as a result large quantities of gas accumulate on the premises. Checkups in the Kharkov Tractor Works showed, for example, that the air at the upper end of the conveyor belt contained ten times the permissible maximum of gas.” In addition, according to Schwarz, the author of this report, after listing a number of further safety hazards in tractor, concluded that “very little attention to safety is paid by plant committees, by middle-level officials, and by the central boards of the unions.”⁷⁰⁾

How generally can such negative description of work environments be applied? Like Schwarz, one can easily assume that as the Soviet industrialization grew quickly since the late 1920s, the work environments of

70) Solomon M. Schwarz (1952), p. 290, which cited *Trud*, December 8, 1935.

the Leningrad metalworkers substantially deteriorated and consequently aggravated the problem of work safety. Indeed, even though the issue of work safety was not so frequently discussed in public, it is not difficult to find individual cases in the local press during the early period of rapid industrialization.

For example, in the beginning of 1929, the factory newspaper of the Stalin factory reported as follows: “labor protection, look in the 3rd department. There they made various sizes of substitutions for motors, but there were no attached clamps for them. So the workers were forced to move those heavy substitutions from one place to another without anything to grasp, completely exhausted and swearing at everything in the world.”⁷¹⁾ In early 1932, in the Engel’s engineering factory, the following complaints were also heard: “It is obvious from the reports on the inspection that at several shops, necessary attention was not given to labor protection and safety techniques. In particular, many places were unprotected, and there were few tanks with hot water. At some shops, cleaning up is conducted carelessly ... Very frequently there are cases that the female workers have to lift excessively heavy things in the process of work ... The protection for workers who are in dirty workplace is extremely bad. Windows in the shops are not washed.”⁷²⁾

In mid-1933, a shop in the Egorov factory also showed a poor working environment. Here the issue was a broken ventilator: “at the woodworking shop there is a ventilator in basement, which sucks shavings from machine-tools. But because machine operators are so careless that they sometimes release whole keys and even bolts and nuts instead of shavings, the ventilator does not work properly. Owing to the poor repair of the ventilation, the new motors have strong overheating. Additionally, after rain releases much water, the pump does not work, even though an entire brigade of metal workers headed by brigadier during whole 5-day week has tried to repair it. Who will bring order, and what does administration of the woodworking shop think?”⁷³⁾ Another example

71) *Poliustrovskii gigant*, no. 1, January 9, 1929, p. 3.

72) *U stanka*, no. 8, February 8, 1932, p. 4.

of poor ventilation occurred in Krasnaia vagranka in January 1934: “The machine shop produces neither fusion nor drying but is full of smoke and fume. All of this comes from the fact that when they produce fusion, all the harmful smoke and gas reaches the machine shop. Moreover, from the drying apparatus, smoke reaches metalworkers upstairs. It immensely affects not only labor productivity but also the health of the workers.”⁷⁴⁾

Nonetheless, these individual cases do not appear to confirm that the work environment among the metalworkers grew worse and worse with the speed-up of industrialization. The following table is about industrial accidents among Leningrad workers, which can offer a useful standard for their working conditions. Each figure, which was called “coefficient of frequency of accident” at the time, indicates the average number of accidents with the loss of ability to work in 1,000 “complete” workers per year.⁷⁵⁾

As <Table 11> shows, Leningrad metalworkers had fewer accidents in 1931, when the metal industry was expanding very fast, than in 1927, before industrialization was accelerated. Furthermore, their rate of accident in 1931 was much less than in 1929/30, when rapid industrialization was just initiated.⁷⁶⁾ Thus, compared to 1929/30, metalworkers had fewer accidents by 11.5% in 1931.

73) *Egorovets*, no. 39, July 31, 1933, p. 4.

74) *Krasnaya vagranka*, no. 3, January 17, 1934, p. 3.

75) If industrial accidents “without the loss of ability to work” are also considered, the actual number of accidents would be even more. Even if there is no useful comprehensive information on this kind of data, individual factory data confirms this assumption. For example, a survey about Pnevmatika in 1929 reveals that during the first eight months of the year, accidents with the loss of ability to work were 54, whereas accidents without the loss of ability to work were 265. See GARF, f. 5469, op. 13, d. 282, l. 166.

76) The rate of accident among all industrial workers as well as among metalworkers increased in 1929/30, probably because of the sudden start of the forced industrialization without appropriate preparatory measures for work safety. In the next year it decreased, however, as interest grew among local authorities. Concerning this, I will discuss later.

<Table 11> Industrial Accidents in Leningrad Industry
(1927 and 1929/30-1931)

Industrial branch	Coefficient of frequency											
	1927				1929/30				1931			
	Mor-tal	Seri-ous	Sli-ght	Total	Mor-tal	Seri-ous	Sli-ght	Total	Mor-tal	Seri-ous	Sli-ght	Total
Metal-working	0.161	3.6	250.1	253.9	0.228	2.4	262.1	264.7	0.216	2.5	231.6	234.3
Wood	-	2.7	285.9	288.6	0.264	1.9	354.0	356.2	-	4.2	279.8	284.0
Textile	0.063	2.5	79.7	82.3	0.108	0.8	84.8	85.7	0.048	1.6	71.2	72.8
Sewing	-	0.4	66.5	66.9	-	0.2	94.4	94.6	-	0.2	56.2	56.4
Paper	0.528	0.8	117.9	119.2	0.288	6.1	129.0	135.4	0.504	4.4	127.7	132.6
Mineral	-	2.9	168.3	171.2	-	1.6	149.9	151.5	-	0.7	148.6	149.3
Food	0.315	2.5	183.9	186.7	-	2.4	192.5	194.9	0.072	1.3	161.4	162.8
Tobacco	0.220	0.2	50.3	50.7	-	1.1	60.7	61.8	-	-	74.6	74.6
Leather	-	1.5	135.0	136.5	-	1.3	162.2	163.5	0.048	4.3	96.0	100.3
Animal products	1.783	2.4	140.9	145.1	-	0.6	151.6	152.2	-	4.3	161.5	165.8
Chemical	-	1.3	120.5	121.8	0.288	1.7	134.4	136.4	-	3.0	108.5	111.5
Power station	2.685	3.6	57.5	163.8	0.888	4.4	120.1	125.4	0.684	1.3	195.2	197.2
Printing	-	1.0	47.7	48.7	-	1.4	64.9	66.3	0.096	1.8	65.5	67.4
Entire industry	0.142	2.5	158.2	160.8	0.156	1.8	179.3	181.3	0.120	2.28	158.5	160.9

Sources: For 1927, *Trud i profdvizhenie v Leningradskoi oblasti k nachalu 1928 g.*, 1928, p. 112, table 96; for 1929/30-1931, calculated from *Trud i profdvizhenie v Leningradskoi oblasti, 1932 g.*, 1932, p. 146, table 116.

Such reduction of accidents was apparently more quick among all Soviet metalworkers. The following table contains data for the accidents in several main Soviet industries.

As was clear from <Table 12>, the reduction of accidents in 1932 to 1928 reached 43.8% and 34.9% in all Soviet engineering and metallurgical industries respectively, whereas they decreased only 7.7% during the period between 1927 and 1931 in the Leningrad metal-working industry.⁷⁷⁾

77) The number of accidents among Leningrad metalworkers in 1931 was 83.7% of that in 1928 which recorded 279.9. In other words, accidents among them were reduced by 16.3% between 1928 and 1931. According to another contemporary source, the accidents in the Soviet metallurgy and engineering industries were reduced by 29% and 46% respectively. See K. P. Gorshenin, *et al.* (eds.) (1939), p. 179.

<Table 12> Industrial Accidents in Soviet Industry, 1928-1933

Industrial branch	1928	1932	1933	% of 1932 to 1928	% of 1933 to 1928
Metallurgy	321.8	209.4	198.1	65.1	61.6
Engineering	320.2	180.1	168.5	56.2	52.6
Electro-technical	-	127.2	115.7	-	-
Textile	74.4	55.4	48.0	74.5	64.5
Sewing	109.2	57.1	44.7	52.3	40.9
Leather	259.5	146.7	111.3	56.5	42.9
Saw-mill and veneer	274.5	186.3	173.9	67.9	63.4

Source: *SSSR v tsifrah*, 1935, p. 206, table 1.

The metalworkers, however, were still among Leningrad industrial groups that had the most industrial accidents in 1931. First of all, as <Table 11> shows, despite the reduction of accidents, the decrease rate among them to 1929/30 was only a little higher than the average rate of decrease among all industrial workers, who recorded 11.3%. Their decrease rate was much less than that among the workers employed in the wood, sewing, chemical, food and leather industries.⁷⁸⁾ In addition, through 1927-1931, the metalworkers always recorded the highest rates of accidents, save for workers in the wood industry. Their rates were much higher than those of all Leningrad workers, and in particular, recorded twice as many as the chemical workers and three times as many as textile workers. Furthermore, metalworkers suffered on average more mortal and serious accidents than all other industrial workers. Such characteristics of metalworkers are true of other metalworkers in the Soviet Union. As <Table 12> shows, Soviet workers in metallurgy and engineering have always experienced more accidents than those in other industries.⁷⁹⁾

78) Roughly similar data can be found in other contemporary statistics that show that the rates of industrial accident decreased in the Leningrad printing industry and power stations, even though in the above table, those rates increased. The following statistics show the percent of decrease in 1931 compared to 1930:

Fiber	18.4	Printing	16.2
Sewing	25.0	Leather	31.5
Chemical	23.8	Metal-working	10.6
Tram depot	13.1	Electric power station	9.9
Entire Leningrad industry	9.3		

See Iu. I. Smykovskii (ed.) (1932), p. 68.

79) If mining industry is considered that did not exist in Leningrad, it makes a difference.

Meanwhile, in most Leningrad individual factories, industrial accidents declined by 1931. Concerning this, a report of the local trade union of engineering workers on the basis of 25 large Leningrad engineering factories offers an interesting analysis. The report traces the number of accidents by factory groups divided by “the nature of production,” giving the following results:

<Table 13> Industrial Accidents in the Leningrad Engineering Industry (1930-1931)

Industrial groups	Coefficient of frequency		
	First half of 1930	Second half of 1930	Second half of 1931
Iron-casting group	391	369	352
Metallurgical group	294	325	281
Engineering group	274	232	203
Other groups	289	277	211

Source: TsGASPB, f. 2345, op. 26, d. 5, ll. 17-18.

As is obvious in <Table 13>, the metal plants belonging to the iron-casting group showed the highest accident rate. For example, during the first half of 1931, accidents in the Lapse factory reached 459. Kooperator had 336, and the Molotov factory, 280. In metallurgical group, it was Krasnyi putilovets that experienced the most frequent accidents: 295. Additionally, Izhorskii and the Lenin factory reached 266 and 239 respectively. In the engineering group, the Sverdlov factory led with 318. Russkii dizel' and the K. Marks factory recorded 261 and 271 respectively, whereas the Stalin factory and the Engel's factory recorded much lower rates, showing 156 and 147.⁸⁰⁾

It was no accident that the iron-casting group showed the highest frequency. Within a metal plant as well, iron-casting caused the most industrial accidents. For example, even though the Stalin factory, categorized as an engineering factory in the above classification, recorded comparatively fewer accidents in during the first half of 1931, some shops of it showed “the worst” in the previous year:

In Soviet industry, the mining industry almost always recorded the highest accident rate. For example, the accident rate in the Soviet coal industry reached 465.0 in 1928, 289.1 in 1932 and 291.6 in 1933. That in ore extraction was 334.2 in 1928, 223.7 in 1932 and 192.1 in 1933. See *SSSR v tsifrakh*, 1935, p. 206, table 1.

80) See TsGASPB, f. 2345, op. 26, d. 5, l. 18.

<Table 14> Industrial Accidents in the Stalin Factory by Workshop, 1930

Workshop	Coefficient of frequency
Iron-casting	474.4
Boiler	380.0
Iron construction	322.4
Forging	261.3
Model	238.0

Source: GARF, f. 7676, op .1, d. 134, l. 113.

The highest accident rate of iron-casting workshop was twice the average rate of the entire factory, which recorded 220.0 in the same year.⁸¹⁾

The highest frequency of accidents in iron-casting work can be explained by “exceptionally bad conditions of the work.” The workers were supposed to deal with hot molten iron so that they were almost always at risk of being burned. Consequently, the work processing had to be conducted very carefully and in a particularly orderly manner. Also, it was necessary for workers to put on “special working clothes” to prevent unexpected burning. Even if such measures were taken, accidents were not completely eliminated because of “other shortcomings.”⁸²⁾

Severally, accident rates reflected the characteristics of particular work processes. At the iron-casting workshop, for example, the highest number of accidents were in transporting work. They accounted for 30.5% of all accidents in 1929 and 36.8% in 1930. The second most frequent reason was associated with works around mould boxes. This accounted for 20.7% in 1929 and 13.8% in 1930. Work dealing with furnaces caused nearly the same rate of accident. In contrast, at turbine shop, which did not entail casting work, accidents happened most frequently in operating machines: 43.9% in 1929 and 38% in 1930. In addition, 20-25% of all accidents were related with hand tools.⁸³⁾

Furthermore, the kinds of injuries differed among workshops. The workers

81) GARF, f. 7676, op. 1, d. 134, l. 113. Incidentally, in 1928 the frequency coefficient of the workshop reached as high as 716.3, an “absolutely intolerable quantity.”

82) GARF, f. 7676, op. 1, d. 134, l. 113.

83) Calculated from GARF, f. 7676, op. 1, d. 134, l. 114, upper table.

in the iron-casting department tended to have injuries on their fingers or legs most frequently: 33% and 30.5% in 1929. These were caused probably by burning when dealing with molten iron. Injuries on eyes and hands accounted for 17% and 13.4% respectively. In contrast, at turbine shop, workers had the most injuries on their eyes: 44.4% in 1929. The second most frequent injuries were on their fingers: 33.9%. These injuries were due mostly to the work processes involved in operating machines and handling instruments.⁸⁴⁾

Speaking of the Leningrad metal industry as a whole, the causes for industrial accidents were various, but accidents happened most frequently in operating machines. Although the following table is for 1926, it suggests reasons for the accidents occurring during the period under review.

As <Table 15> shows, besides the injuries caused in operating machinery, many occurred when the metalworkers used small instruments, moved heavy things, and bumped into diverse objects.

<Table 15> Reasons for Industrial Accidents in Leningrad industry, 1926

Concrete reasons for injury	Number of accidents				
	Entire manufacturing industry	Among them			
		Metal-working	Wood	Textile	Chemical
Total of accidents	24,673	14,289	1,381	2,863	1,914
Coefficient of frequency	139.9	207.9	289.1	71.3	123.8
The distribution of accidents by concrete reasons for injury (% of total)					
1. Machinery operation	26.7	25.8	51.1	34.0	13.1
2. Handling of instruments and simple devices	15.1	15.6	13.9	9.3	25.1
3. Loading, unloading, lifting and moving of heavy things	15.2	16.4	11.8	10.5	17.4
4. Falling from high places (stage, stairs, hatch, pit, etc.)	5.3	4.3	4.8	6.5	5.4
5. Collapse and toppling of objects and structures	6.3	6.4	3.8	6.0	8.2
6. Inflammable, poisonous, pungent and hot substances (gas, steam, etc.)	6.6	8.5	0.7	3.5	5.7
7. Bruises, pricks and cuts by various objects	13.5	11.6	8.8	18.7	10.4
8. Other reasons	11.3	11.4	5.1	11.5	14.7
Total	100	100	100	100	100

Source: *Trud i profdvizhenie v Leningradskoi oblasti k nachalu 1928 g.*, 1928, p. 113, table 97.

84) Calculated from GARF, f. 7676, op. 1, d. 134, l. 114, lower table.

A 1931 study of 12 metal plants, including Krasnyi putilovets, the Stalin factory, the K. Marks factory, Izhorskii, Ekonommaizer and Russkii dizel', offered a dozen of reasons for accidents from a different perspective.⁸⁵⁾ These include "indirect" circumstantial reasons that cause the above "direct concrete" reasons. For example, some factories, including Krasnyi putilovets, Izhorskii and Vulkan, piled lots of materials and parts at its shops and courtyards.⁸⁶⁾ Krasnyi putilovets, Izhorskii, and Krasnyi gvozdil'shchik all failed to take sufficient measures for the mechanization of loading and unloading of the works. Furthermore, the Molotov factory did not keep to guidelines for the supply of special work clothes provided by the Soviet government.⁸⁷⁾ Krasnyi putilovets and Izhorskii did not have sufficient light, natural or artificial. In particular many windows were not washed well.⁸⁸⁾ The workers in Promet did not use protective equipment such as protective goggles. In addition, there was a lack of safety education among workers, particularly new workers,

85) For the entire list of reasons, see TsGASPB, f. 2345, op. 26, d. 5, ll. 18-19.

86) Piling-up was not a big issue only for metal plants. According to a contemporary inspection of labor protection based on 25 factories in the Leningrad metal, chemical and textile industries, 16 factories (64%) of them had suffered from severe piling-up and four factories (16%) had it "to some extent" as of 1931. By contrast, only three factories (12%) had no problem with it. Piling-up was mainly caused by insufficient organization of the factory, making the movement of the workers and their access to equipment hard. See GARF, f. 7676, op. 1, d. 134, ll. 56 and 58.

87) According to another inspection of labor protection conducted in late 1931, some other metal plants did not fully provide special work clothes for their laborers. For example, Factory No. 8 was suppose to spend 15,000 rubles for special clothes in 1931, but expended only 10,626. Krasnyi gvozdil'shchik distributed clothes worth 10,859 rubles instead of the planned 16,000. The amount that Il'ich expended was only 17,500 rubles, though it was assumed to have spent 29,400. See TsGASPB, f. 2345, op. 9, d. 6, l. 24.

88) The archival materials cited at footnote 86 show that most of the factories under review had the same problem. According to this, only 3 out of 25 factories had fully sufficient light. Lighting in 17 other factories was not good because of "bad or insufficient maintenance," such as dirty windows. Four factories had "partially bad maintenance." See GARF, f. 7676, op. 1, d. 134, ll. 57 and 58.

insufficient spending on labor protection, careless maintenance of protective equipment, and incorrect first aid of health center in factory.

Finally, we have to explain why the industrial accidents among the Leningrad metalworkers decreased during the early 1930s, in contrast to Schwarz's argument. First of all, investment in labor protection in the Leningrad metal industry decreased since 1929/30.

According to <Table 16>, the planned investment in 1931 dropped to 81.5% of the level of 1929/30, even though it increased again a little in 1932. Since new workers flooded in during 1930,⁸⁹⁾ this reduction would have had great adverse effect on the labor protection of the metalworkers.

<Table 16> Investment in Measures for Improving Labor Health and Safety Techniques in the Leningrad Metal Industry, 1928/29-1932 (1,000 rubles)

Industrial branch	1928/29			1929/30			1931			1932		
	Total anticipated	Total expended		Total anticipated	Total expended		Total anticipated	Total expended		Total anticipated	Total expended during first half	
		Rubles	%		Rubles	%		Rubles	%		Rubles	%
Metal-working	1,486.6	1,615.9	108.7	2,203.2	2,437.2	110.7	1,796.5	1,923.9	107.1	1,839.2	548.1	29.8
Electro-technical	425.0	451.3	106.2	682.8	613.3	89.8	187.5	417.2	222.5	654.1	219.8	33.6
Entire industry	6,021.6	6,121.3	101.6	7,946.5	7,546.2	94.9	4,434.1	4,857.1	109.6	4,926.4	1,389.2	28.2

Source: *XV let diktatury proletariata*, tablitsy, 1932, p. 115, table 4.

Despite such decrease in investment, however, there existed several favorable conditions for improving work environment. Above all, with the initiation of the 7-hour work day in early 1929, as shown, the actual working hours of Leningrad metalworkers steadily decreased, which must have contributed significantly to the reduction of the absolute number of accidents. Actual working hours, including increasing overtime, dropped by 0.4 hours

89) The number of Leningrad metalworkers increased sharply from 108,122 in January 1, 1930 to 187,591 in January 1, 1931. See *XV let diktatury proletariata*, 1932, tablitsy, p. 74, table 5.

per day between 1927/28 and 1931. Along with this, the annual actual working days also decreased by 15 days during the same period.

Even though the reduction of working time certainly increased work intensity among the metalworkers, it favorably influenced their work safety in other respects. Factory managers had to prevent industrial accidents with all possible means because the injury of a worker meant the loss of working hours for which they would be criticized, given that “the struggle with the loss of working time” was considered their urgent task. In addition, the campaign for tightening up time schedules, a rationalization measure intended to supplement lost working time, also effectively reduced accidents. The campaign required organizing work sites to reduce lost working time, as a result decreasing the danger of accidents owing to such conditions as the above-mentioned careless piling-up of materials and parts.⁹⁰⁾

The expansion of multi-shift systems, which was accelerated along with the introduction of the continuous work week, did not always worsen work safety. Multi-shift systems could reduce the danger of accidents by serving as a motivation to organize the working process. For example, an iron-casting workshop in the Stalin factory successfully lowered the number of accidents by 32% between 1928 and 1929. The result, reportedly, was “in close relation with the realization of labor protection measures such as following: (1) All casters were given special work clothes and boots, which immediately stopped the burning of legs. (2) Labor in the workshop was organized in the three-shift system by operation: the 1st shift — shaping, the 2nd shift — casting, and the 3rd shift — knocking out of casting and cleaning up of the workshop.”⁹¹⁾

Safety education among the workers also contributed to the decrease in accidents. Although there is no comprehensive data showing how widely it

90) For more examples of the factories that emphasized the necessity of organizing the work site, see *U stanka*, no. 8, February 8, 1932, p. 4; *Egorovets*, no. 32, June 21, 1933, p. 2 and no. 57, October 6, 1933, p. 1; and *Elektrosila*, no. 124, October 28, 1933, p. 1.

91) GARF, f. 7676, op. 1, d. 134, l. 1 13.

was conducted, some information available does relate to the situation. For example, in 1931 “most workers in dangerous trades who were employed in heavy industry were covered by safety education courses,” while 2% of all planned investment for labor protection was assigned to this aim. As a result, in Krasnyi putilovets 1,117 workers took this course in 1931, whereas only 570 joined in 1930. A thousand workers in the Stalin factory, 1,783 in Izhorskii and 1,500 in the Lenin factory received safety education in 1931. In the Sever shipyard, no worker took a safety course in 1930, but in 1931, 125 workers did.”⁹²⁾ In 1932, more than 800 workers of various trades in Elektrosila took such courses. In this factory there were also frequent lectures and talks in its shops.⁹³⁾

Additionally, the regular campaign for the inspection of labor protection also offered metalworkers opportunities to receive safety education. According to a 1932 report conducted for the engineering, paper and leather industries in Leningrad in 1932, 25 metal plants “mobilized workers” most successfully in the inspection of labor protection. As a result, in 25 metal plants with a total 175,000 workers, 142,000 workers, or 81% of all workers, attended “various kinds of conferences, meetings and lectures.” Among them, “more than 85,000 workers participated actively in inspection brigades.” Apart from these opportunities, regular courses for safety education were offered too. During a month of inspection, more than 36,000 workers in 25 metal plants took these courses. The education was offered by trade and by skill of the workers, while being “conducted on conveyor belts by individual production processes, which brought the best results in terms of reduction of accidents.”⁹⁴⁾

Another factor for fewer industrial accidents among metalworkers was the frequent presence of labor inspectors in factories. Concerning this, Schwarz has argued that Soviet labor inspectors became ineffectual, losing their power

92) Iu. I. Smykovskii (ed.) (1932), p. 66.

93) As a result, industrial accidents in Elektrosila substantially decreased by 1933: 1,897 in 1931, 1,316 in 1932 and 526 during the first half of 1933. See *Leningradskii udarnik*, no. 28, October 10, 1933, p. 4.

94) *Leningradskii udarnik*, no. 18, April 1932, p. 0.

during the 1930s: they did not have required training as inspectors, and factory managers ignored them, frequently refusing to see them.⁹⁵⁾ Seemingly, however, this argument is not true of the early part of the decade. First of all, the number of labor inspectors dramatically increased, when a decree of the Soviet government on June 30, 1931, decided to place “social inspectors” in each factory. They were unpaid but had the authority to supervise whether factory administration observed rules about labor protection and work safety.⁹⁶⁾

<Table 17> Labor Inspectors in Leningrad, 1930-1932

Kinds of inspectors	The number of inspectors		
	1930	1931	1932
Legal	25	28	24
Technical	38	47	38
Sanitary	14	18	20
Agricultural	2	-	-
Social	-	189	715
Total	79	282	797

Source: *Trud i profdvizhenie v Leningradskoi oblasti, 1932 g.*, 1932, p. 141, table 109.

Although no data shows in a detail how many inspectors were in each metal plant, certainly some inspectors served there. One report mentioned that around 3,000 social inspectors worked in the Leningrad *oblast'* in late 1932⁹⁷⁾ and that all of large factories, including metal plants, had them.⁹⁸⁾ Naturally, such an immense increase of inspectors strengthened the supervision of work safety in metal plants. The following data offer interesting statistics in this respect.

95) Solomon M. Schwarz (1952), pp. 294-298.

96) For this decree, see Ia. L. Kiselev and S. E. Malin (eds.) (1931), p. 193.

97) The official number of social inspectors in the Leningrad *oblast'* excluding the city was 496 in 1932. Consequently, the total number of them was not 3,000 but 1,211(496+715), as is clear from <Table 17>. See *Trud i profdvizhenie v Leningradskoi oblasti, 1932 g.*, 1932, p. 141, table 109.

98) *Leningradskii udarnik*, no. 58, December 15, 1932, p. 8.

<Table 18> Supervision of Technical Inspection of Some Equipment
in Leningrad Industry, 1929/30-1931

	The number of inspection during a year	
	1929/30	1931
Steam boilers	2,589	4,011
Steam and gas receivers	1,022	1,037
Containers	11,559	14,714
Lifts and cranes	1,770	2,148
Total	16,940	21,910

Source: *Trud i profdvizhenie v Leningradskoi oblasti, 1932 g.*, 1932, p. 141, table 110.

Thus, during 1929/30-1931, the work of inspectors increased around by 30%.

Finally, the development of health centers (*zdravpunkty*) also contributed to improvement of working environment among metalworkers. One of the basic tasks of medical institutions in enterprises was “to take sanitary measures in struggle with the illnesses and accidents of workers.” Also they had to conduct cultural work for public hygiene among workers in factories.⁹⁹⁾ In this respect, factory health centers played an important role in reducing accidents among metalworkers. <Table 19> shows their steady increase.

<Table 19> Health Centers in Leningrad Industry, 1928-1932*

Year	Number of health centers in enterprises	Number of health centers with a doctor in enterprises
1928	240	232
1929	253	238
1930	273	255
1931	289**	271
1932	346**	314

Source: *XV let diktatury proletariata, 1932*, tablitsy, p. 167, table 2.

* Excluding transport.

** According to another data they were 411 on January 1, 1931 and 471 on January 1, 1932. See *Trud i profdvizhenie v Leningradskoi oblasti, 1932 g.*, 1932, p. 162, table 132.

99) A decree of the Soviet government on October 11, 1930 instituted first aid center in factories. Ia. L. Kiselev and S. E. Malin (eds.) (1931), pp. 182-185. Also see another decree of Soviet government about factory health centers on August 27, 1957 in *Zakonodatel'stvo po okhrane truda. Sbornik ofitsial'nykh dokumentov*, 1966, pp. 250-252.

Thus, the number of health centers increased especially between 1931 and 1932, and almost all of them had a doctor.

Although it is unknown how many were installed in metal plants, there was at least one health center in each factory by 1932. For example, according to a press report about the Leningrad engineering industry, “health centers existed in all factories” by mid-1932. Particularly large factories including Krasnyi putilovets, the Stalin factory and Bol’shevik, even had branches of the health centers in shops. Moreover, some plants, such as Krasnyi putilovets, the Lenin factory, the K. Marks factory and OGPU, had “expanded medical centers that treated workers in accordance with their specialty.”¹⁰⁰⁾ Health centers in factories continued to increase after then. In 1933, their number soared to 538, which covered all Leningrad enterprises with more than 250 workers. In 1933 alone, 20 new health centers opened in metal plants such as Elektroapparat, Elektrik, Elektropribor and Krasnyi gvozdil’shchik.¹⁰¹⁾

5. Conclusion

In summary, the general labor conditions of Leningrad metalworkers did not deteriorate during the rapid industrialization drive, even though their conditions were not better than those of other workers’ groups in Leningrad. First of all, their actual working time, including overtime, substantially declined from 7.4 hours to 7.0 between 1928/1929 and 1932; and it appears that this remained more or less unchanged “until the end of the decade,” during which “the bulk of industrial labor worked on the basis of 7-hour day.”¹⁰²⁾ Moreover, the metalworkers worked much less than previously in

100) *Za sovetskuiu mashinu*, no. 47, August 25, 1932, p. 15.

101) *Otchet Leningradskogo oblastnogo i gorodskogo komitetov VKP(b). Ob”edinnennoi Leningradskoi piatoi oblastnoi i vtoroi gorodskoi partkonferentsii*, 1934, p. 165.

102) Solomon M. Schwarz (1952), p. 268.

terms of total working days in a year, which decreased by more than 15 days during the period from 1927/28 to 1931.

In terms of work safety too, the Leningrad metal workers did not experience deterioration. Even though their work environments were still poor, industrial accidents declined steadily after 1929/1930. This decrease was unexpected under the conditions of reduced total investment in work safety, yet the shortened actual working time contributed to such a decrease. In addition, safety education, the introduction of the social inspectorate in 1931 which increased the number of labor inspectors and the development of the network of medical centers within metal plants, all contributed to reduction in injuries among the metalworkers.

The improvement of working conditions, however, was not limited to metalworkers. Though they were called “vanguards of the workers,” they were never special beneficiaries of the improvement. Rather, they still had to work under conditions that were generally worse than those of other workers. Their actual working time declined but only as much as that of other workers. Moreover, they worked overtime longer than almost all other workers. In terms of annual working days, the metalworkers were still among the workers’ groups that worked the longest days. They even experienced equally intensified work routines. In addition, the metalworkers were still more frequently subject to injuries in their work places during the early 1930s than most other groups of industrial workers, even though industrial accidents decreased among them. As of 1931, almost a quarter of the metalworkers were injured in work. Furthermore the mortality rate caused by accidents was higher than that of almost any other group of laborers.

Meanwhile, the metalworkers were unwilling to play the role that the Soviet authorities expected, as was shown in their adoption of the continuous work week. The continuous work week system that began to spread from late 1929 among the metalworkers eventually failed. The factory managers suffered very frequently from a lack of workforce and raw materials, a sufficient supply of which was necessary to expand multi-shift systems for the smooth functioning of the continuous production. Furthermore, the workers

did not welcome this institution, fearing that the abrupt and unprepared introduction of the new work week would lead to the collapse of their traditional labor conditions. In this respect, the response of the metalworkers did not differ much from that of other workers. As a result, the continuous work week system did not work well from the beginning; and the multi-shift system, a key element of it, also ceased to expand in late 1932, declining steadily by 1935.

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초록

1920년대 말 ~ 1930년대 초 레닌그라드 금속 노동자들의 노동 조건

김 남 섭

이 논문은 1920년대 말 ~ 1930년대 초의 급속한 산업화 기간 동안 소련 정부의 노동 정책에 의해 레닌그라드 금속 노동자들의 노동 조건이 어떻게 변화했는지를 추적하는 데 목적이 있다. 이를 위해 본 논문은 문서고 자료와 당대에 발행된 신문과 잡지의 관련 기사들, 그리고 각종 정부 보고서 등에 실린 통계 수치를 이용하여, 당시 소련 정부가 적극적으로 도입하였던 “7시간 노동일”과 “연속 노동 주” 제도, 그리고 이러한 제도들의 시행으로 인한 작업안전 상태의 변화를 세밀하게 검토하였고, 그 결과 다음과 같은 결론에 도달하였다. 첫째, 연구자들의 일반적인 믿음과는 달리, 급속한 산업화 기간 동안 레닌그라드 금속 노동자들의 전반적인 노동 조건은 악화되지 않았다. 초과노동 시간을 포함해 그들의 1일 노동 시간은 상당히 줄어들었으며, 연간 노동일수도 꽤 감소하였다. 또 작업 안전 면에서도 금속 노동자들의 상태는 나빠지지 않았다. 작업 환경은 여전히 열악했지만, 산업화가 본격화된 이후 공장에서의 산업 재해 건수는 꾸준히 줄어들었다. 둘째, 하지만 이런 노동 조건의 개선은 금속 노동자들에게만 국한된 것이 아니었다. 오히려 다른 직종의 소련 노동자들과 비교하여 금속 노동자들의 노동 조건은 더 나빴다. 이런 면에서 소련 정부에 의해 “노동자들의 전위”로서 간주된 금속 노동자들은 이러한 노동 조건 향상의 특별한 수혜자가 아니었다. 셋째, 금속 노동자들은 소련 노동자들의 모범으로서 산업화를 위해 적극 희생해 달라는 소련 정부의 요구에도 부응하지 않았다. 산업화를 위해 소련 당국이 야심차게 추진하였던 “연속 노동 주” 제도는 “다교대제 체제”의 도입이 실패하고, 또 새로운 제도의 졸속 도입으로 인한 전통적인 노동 조건의 변화를 우려한 금속 노동자들의 광범한 저항에 부딪쳐 곧 좌절되고 말았다.

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