

Science
and
Mar

• • • • •

Scientific Management, Socialist Discipline, and Soviet Power

• • • • •

Mark R. Beissinger

Harvard University Press
Cambridge, Massachusetts
1988

How
cent
coun
thre
Mar
desi
que
of e
B
adm
hist
tech
argi
succ
whi
pov
dat
resc
tecl
disc
cycl
soll
a n
hist
the
tor
fro
rec
pol
as i
me
ma
E
the
for
list

1

.

From Revolution to Rationalization

The old bureaucratism has been smashed, but bureaucrats still remain.

—Joseph Stalin, April 1919

Upon attaining power the Bolsheviks faced vexing dilemmas of industrial authority. The strains of war and the crumbling of the old order were keenly felt at the industrial enterprise. The Bolshevik seizure of power at first only amplified this disintegration. Simply from February 1917 to May 1918, labor productivity fell by 80 percent.¹ Taking Bolshevik slogans about self-management seriously, workers spontaneously nationalized industries and set up workers' councils for administering production. Managers and specialists from the old regime found themselves under attack or arrest.

The civil war and continued hostilities with Germany necessitated that the Bolsheviks restore industry, especially defense-related industry, to normal levels of operation quickly. In this situation worker discipline and bureaucratic mismanagement represented mortal dangers to the very survival of the revolution. During these years disciplinary, centralist, normative, mobilizational, and managerial strategies all found reflection in Bolshevik policies. The early years of Soviet power can largely be understood as a struggle between these disparate administrative strategies and

the political forces that stood behind them. An underlying tension between the proponents of each remained beneath the surface of Bolshevik politics throughout the 1920s. But by the early twenties the regime had come to embrace techniques of Scientific Management borrowed from the capitalist West as its primary approach for restoring discipline to a decaying industrial order.

Early Encounters

From the moment Taylorist experiments were first conducted in Tsarist Russia in the years following the 1905 revolution, Scientific Management sparked unusual interest within the nascent Russian Social Democratic Labor Party. This interest also generated schisms that would plague the Bolsheviks for several decades. The stakes involved were the soul of the Russian revolution. The basic appeal of Bolshevism in societies undergoing the birth pangs of the industrial revolution has been its unique combination of industrial and anti-industrial messages: its simultaneous condemnation of the enslavement of the worker to his machine and its glorification of the organizational and technical achievements of the machine age.² This duality was reflected in Bolshevik attitudes toward the organizational revolution which capitalism was experiencing in the beginning of the twentieth century.

The Scientific Management movement had provoked vocal and at times violent worker protest in Western Europe and America. Many socialists believed that Taylorism would crush worker solidarity, beget unemployment, impose an onerous work burden on laborers, and lead to deleterious effects upon their health.³ As Taylorism was imported onto Russian soil on the eve of the war, opposition to Scientific Management was imported onto Russian soil as well. In 1913, when attempts to apply Taylorist techniques at the Renault automobile plant in Billancourt, France, touched off a strike of four thousand workers, the event was prominently reported in the Russian liberal press. Press commentary condemned the Taylor system for "excluding any kind of initiative, thinking, or manifestation of personality, turning the worker into a mechanism whose slightest movements are perfected . . . under the observation of the 'chronometer.'"⁴ Reports such as this, along with the growing propaganda activities of Russian Taylorists, sparked a debate

within the intelligentsia over the morality of the new science of organization. The Populist V. P. Vorontsov accused Taylorists of creating "a system for the scientific exploitation of the work force," "squeezing not only sweat, but also the life juices of the worker" and "turning him into an automaton."⁵ "The rapid application of this system," Vorontsov argued, "will burst forth into levels of unemployment and oversaturation of the market with goods, bearing the character of a true catastrophe."⁵

Like its foreign brothers, the Russian working class was deeply distrustful of the Taylor system. The Soviet Taylorist Aleksei Gastev once observed that those employers in St. Petersburg who attempted to apply Taylorism before the war "already took into account the scandalous experience of the West and approached the matter much more gently by focusing on the purely technical side" of the method. All the same, "the working masses and worker organizations behaved sharply negatively towards the system." In the years immediately preceding the war, St. Petersburg's metal-working plants were plagued by a wave of industrial unrest that in many cases centered around the tensions generated by the introduction of Taylorist techniques. At the Aivaz plant, considered a showplace of Taylorism in prerevolutionary Russia, a massive strike erupted in spring 1913 in protest against conditions created by plant rationalization. A young student from the St. Petersburg Polytechnical Institute who had demonstrated considerable artistriness in his use of chronometry was carted out of the plant on a wheelbarrow to the jeers of workers. According to Gastev, during the war, when applications of Taylorism grew more frequent in defense industry, "a sharper mood against the system" developed. But cases of open protest against Taylorism during these years were rare due to the patriotic fervor that engulfed the country.⁶

Given the level of working-class antagonism to Taylorism, the ambivalence it met within the Russian intelligentsia, and the condemnations it provoked from trade unionists and socialists abroad, the unusually warm reception, and at times open enthusiasm, with which Taylorism was received within the nascent Russian Social Democratic Labor Party seems strangely out of place. In the years immediately following the First World War, "technocratic or engineering models of social management appealed to the newer, more syncretic, and sometimes more extreme currents of European

politics."⁷ Like Marxism, Scientific Management preached the dream of a perfectly ordered industrial world free of strife and class conflict. As one Russian Taylorist expressed it, through the application of science and rationality in organizational affairs "harmony between the interests of employers and workers" could be achieved.⁸

Writing in November 1913, the Menshevik N. N. Sukhanov criticized the alarmist views on Scientific Management held by Vorontsov and others among the liberal intelligentsia. Rather than seeing Taylorism as "the evil of the day," Sukhanov differentiated the harmful aspects of the conditions and forms of applications of Taylorism under capitalism from the progressive "rational-technical elements" inherent in the method; he called the latter "completely correct, necessary, and potentially very fruitful." The effects of Taylorism on workers were not very different from those of production automation under capitalism. Just as Marx had noted that it was not against the machine, an objective and inevitable part of the production process, but rather against the uses to which the machine was put that the proletariat should direct its animosity, Taylorism was an objective factor of production against which it was fruitless to rebel. Since Taylorism multiplied productivity several times over, its widespread application could provide socialist parties with new arguments for shortening the working day and for wage concessions. Most important, "full mechanization and full Taylorization" would be as relevant for a socialist economy as for a capitalist one. In fact, the principles of Taylorism would "develop and be personified to their logical ends" only under socialism, where they would not be limited by capitalist economics in the scope of their use, but would be stripped of their harmful aspects and harnessed for preserving the health and energy of the worker.⁹

These arguments foreshadowed Lenin's first reactions to the Taylor system, which he developed in a short article in *Pravda* in March 1913. Lenin recognized Taylorism as part of "the progress of technology and science" under capitalism, a new technique capable of "working out the most economical and the most productive approaches to labor." The gist of the article, however, was a polemical attack upon Taylorism as a "'scientific' system for squeezing sweat" out of the worker, a capitalist trick endangering the worker's health, subjecting him to inhuman work pressures,

and favoring the young and strong over the old and weak.¹⁰ But if in March 1913 Lenin showed ambivalence toward Taylorism, by March 1914 he had become an open admirer. A second article published at that time waxed enthusiastic over the enormous successes of the Taylor system in raising productivity. Taylorism under capitalism, Lenin wrote, "is directed against the worker, leading to greater pressure and oppression upon him, and limited, moreover, to the rational, intelligent distribution of labor *within the factory*." If only Taylorism were applied to society as a whole and were not limited by the laws of capitalist competition! "Taylor's system," he wrote, "without the knowledge and against the will of its authors, is preparing that time when the proletariat will seize all social production into its hands and will assign its own workers' commissions for the proper distribution and regulation of all social labor." If Taylorism could be "redeemed from its enslavement to capital," it would "give thousands of opportunities to cut the work time of the organized workers by a quarter, providing them with four times as much well-being as now."¹¹

Whereas Sukhanov had been most impressed by the possibilities of Taylorism for easing the burden of work, Lenin was absorbed by the Taylor system's potential for achieving greater levels of productivity and production, for ushering in the period of material abundance and prosperity promised by Marxism. Almost by definition Lenin and his Bolsheviks were obsessed with the power of effective organization as a weapon in the achievement of political goals. Ironically, the Bolsheviks were prominently represented among the leaders of the strike at Aivaz in the spring and summer of 1913, having used the issue of Taylorism to wrest control over the metalworkers union from their Menshevik rivals.¹² Yet, less than six months later Lenin was jubilant over the enormous contribution Taylorism would make in paving the way for communist society.

Not all in the Russian socialist movement were so capable as Lenin of reconciling the egalitarian goals of Marxism with the methods and aspirations of Scientific Management. Taylor's system relied on piece-rate wages for stimulating labor, with wage norms set through supposedly objective observation. Marx had argued that piece-rate payment "is the form of wages most in harmony with the capitalist mode of production," because it allows the bourgeoisie to "increase the efficacy of the working-day by inter-

sifying labor" rather than by increasing work hours. Piece-rates, Marx wrote, were "the most fruitful source of reductions of wages and capitalist cheating." They laid the foundation for "a hierarchically organized system of exploitation and oppression" of the worker. They facilitated "the interposition of parasites between the capitalist and the wage-laborer" and caused the worker to "strain his labor-power as intensely as possible."¹³

Although Marx and Engels recognized that technological and organizational complexity would require that management remain as a function under socialism, they argued that management as an exclusive category of people administering production would eventually cease to exist when, under communism, the division of labor had been overcome. A populist strand within Marxism looked to Scientific Management as a means for effecting a cultural revolution in class relationships and for making every man a manager through education and the simplification of the managerial process. These sentiments were echoed by Lenin on the eve of the revolution in his work *State and Revolution*. In a propagandistic appeal to the anarchist elements then so powerful within the Bolshevik movement, Lenin claimed that workers would easily learn to manage industry starting with the less complex functions of management, which had been "simplified by capitalism to an extreme, to the unusually simple operations of observation and record keeping, knowledge of the four arithmetical operations, and issuing the corresponding vouchers, and are accessible to any literate person."¹⁴

Others within the Russian social democratic movement believed the populist view to be an idyllic and naive understanding of the organizational revolution capitalism was experiencing. In 1913 A. A. Bogdanov, Lenin's chief rival within the Bolshevik party and his former lieutenant, warned that Taylorism not only created a worker aristocracy, favoring some groups of workers over others, but it would also lead to a dulling of the senses of workers through constant repetition of muscular movements, making it more difficult for workers to develop the intellect necessary to run industry. Rather than breaking down class barriers to the managerial suite, Scientific Management would bring about the rise of a new caste of professional industrial supervisors and efficiency experts who would impose their rationality upon the working class rather than act in the interest of workers.¹⁵

Only two years after Bogdanov's warning against the technological dangers of Taylorism, a group of political exiles in the remote Siberian village of Narym began a series of philosophical discussions on the use of Taylorism as a means for transforming human culture under socialism. Among the participants were a number of revolutionaries who would later rise to important positions in the Soviet regime: Aleksei Rykov, future member of the Politburo and leader of the Right Opposition in the late twenties; Vladimir Kosarev, chairman of the Tomsk Provincial Executive Committee and high party official in the 1920s; Abram Gol'tsman, a leader in the Soviet trade union movement; and Aleksei Gastev, soon to become the father of Soviet Taylorism. It was during these discussions, which Gastev later described as one of the more important "laboratories" for his work, that he developed the idea of a science of "social engineering" based on Taylorism, a science for adjusting man to the requirements of machine.¹⁶

Born in 1882 in the town of Suzdal, Aleksei Gastev had followed a path not unlike that followed by a whole generation of Russian revolutionaries. His father, who died when Gastev was two, was, like Lenin's father, a provincial schoolteacher; after his death, Gastev's mother supported him as a dressmaker. After studying at a gymnasium and a local technical school, Gastev entered the Moscow Teacher's Training Institute. In 1900 he was expelled for political activities and fled to Switzerland and France, where he joined the Russian Social Democratic Labor Party in exile in 1901, later becoming an active member of its Bolshevik faction. In 1908, however, Gastev decided to put an end to his career as a professional revolutionary, not unlike many of the young intellectuals attracted to the Bolshevik fold who, in the conservative atmosphere following the 1905 revolution, left the party to pursue their own interests.¹⁷ After 1905 serious splits plagued the Bolsheviks, and esoteric creeds penetrated their ranks. In a period when Lunacharskii and Bogdanov were drawn to the philosophies of Ernst Mach and Richard Avenarius, Gastev was attracted to the ideas of Taylor.

From 1908 to 1910 Gastev found employment as a metalworker at the Vasilostrovskii Trolley Depot. The head of the depot, an admirer of Taylor, initiated a study of the depot's production operations. None other than Gastev, the fugitive revolutionary disguised as worker, was chosen to make the rounds of the workshops to

register the wear on belts and sprockets and to analyze the repair of trolley cars. This project sparked in him the idea of developing "a science for the social construction of enterprises."¹⁸ In 1910 Gastev was arrested and sentenced to exile in Siberia. He made his way instead to Paris, where he worked in plants owned by Citroën and Clément-Bayard. At Clément-Bayard, he later wrote, "I became acquainted with the organization of quality-inspection work conducted with unusual thoroughness directly in plant conditions, in the shop." At Citroën—whose owner, André Citroën, had been influenced by the example of Ford during a visit to the United States in 1912, the very year Gastev worked for the company—Gastev witnessed the first applications of assembly line production in France. While there he also became acquainted with technical handbooks published by the French metalworkers union. These served as models for norm handbooks that Gastev would later compile in Soviet Russia.¹⁹

In 1913 Gastev returned illegally to St. Petersburg and found employment as a metalworker at the Aivaz plant. At the very time when the workers of Aivaz, led by Bolshevik organizers, were rising in protest against the Taylor system, the young Gastev found the experiments at the plant "the most sensational and the most influential" of his work experiences. At Aivaz, Gastev later wrote, "one could see that technical and organizational revolution which the unseen organizer, penetrating all the pores of the factory like a bandit at night, was carrying out." Here Gastev "discovered the horrifying difference between the self-mastery of the West European proletariat and the production anarchism in the behavior of the Russian proletariat." From that time on "the idea of the norm came to be seen [by me] as a definite social factor, as a definite social phenomenon."²⁰

Gastev's experiences at Aivaz were interrupted in 1914 by his arrest and exile to Siberia. In Narym he used his forced rest "to engage in a philosophical interpretation of all that empirical material I had gathered in my earlier work at plants both in Russia and abroad."²¹ After the February Revolution he returned to Petrograd and was elected general secretary of the metalworkers union. At the time owners of a number of Petrograd enterprises were negotiating with the metalworkers over the introduction of piece-rates. Although the union rank and file instinctively opposed this move, in

early 1917 an agreement was reached permitting piece-rate payment in enterprises where, in the opinion of management, it was necessary for the normal functioning of the plant. Gastev joined the leadership of the metalworkers union after this agreement had been hammered out. But he and his comrade from Narym, Abram Gol'tsman, formed what Gastev called "a friendly group" within the union that pushed for the introduction of piece-rates and production norms on a more systematic basis. As a result of these efforts, the first piece-rate tariff tables in Russian industry were published in 1917.²² At a time when the Kerensky government was mismanaging the country, Gastev and his technocratic followers were steadily gaining influence within the union.

Adults and Children

Within weeks of the revolution Gastev and his "friendly group" initiated a campaign to adopt piece-rates as the major form of wage payment and to establish norm-setting bureaus to regulate wage rates by means of time-and-motion analysis. In January 1918, at the founding congress of the metalworkers union, Gastev and his supporters pushed through a resolution advocating the adoption of piece-rates in those metalworking plants where it was considered "technically feasible." Nevertheless, opposition to Taylorism within the Russian working class was strong. Already in December 1917 the printworkers union, then under Menshevik influence, had come out firmly against piece-rates, which, it was argued, "harmed the health of workers, dulling their mental abilities and lowering their real wages." In January 1918 the railroad workers union adopted a similar resolution that condemned piece-rates for leading to "the physical exhaustion and a decline in the intensity and productivity of labor . . . and to an increase in unemployment." Gastev later wrote that interest in the Taylor system at the time "turned out to be more solid among managers" than among trade unionists and workers, and that the position of most trade union officials "was settled by the consumer mood of the masses."²³

The propaganda campaign unleashed by Gastev aroused stormy arguments. The occasion for these controversies was a series of meetings between trade union and governmental officials at the end of March 1918 on the disorganization of Russian industry. Repre-

sentatives of the metalworkers union put forth their "Platform on Worker Industrialism," which criticized "elective administration based upon pure democracy and not upon industrial order." It envisaged the application of a broad system of "social norm-setting" throughout the country. Not only were norms, in the form of Taylorism and piece-rate payment, necessary for reestablishing labor discipline in the economy, but social norm-setting would eventually be necessary for regulating the entire life of the workers' state, including "foreign trade, the participation of national and foreign capital, and finally a certain international industrial orientation."²⁴ Opponents of piece-rates viewed this as nothing less than a restoration of capitalism. Trade union chairman V. V. Schmidt aimed at a compromise; he called for the establishment of a minimum production quota for workers, as well as a halt to the decline in living standards that accompanied the revolution and which, in his view, was the chief cause of lower productivity.²⁵

The growing importance of the labor discipline issue led Lenin to intervene. He summoned Schmidt and G. D. Veinberg, a representative of the metalworkers union, to a meeting of the Presidium of the Supreme Council of the National Economy (VSNKh) to discuss the problem. Lenin was hardly a neutral arbiter of the dispute; at a time of growing industrial disorder and under the influence of the metalworkers' example, the onetime prerevolutionary admirer of Taylorism had become a convinced and open supporter. He came down firmly on the side of the metalworkers and spurred on Schmidt to produce a strong resolution on the labor discipline issue. In a draft version of his pamphlet *Important Tasks of Soviet Power*, Lenin added a long passage extolling the benefits that the universal application of Taylorism under socialism would bring. "We should introduce the Taylor system and American scientific methods for increasing labor productivity throughout all of Russia, combining this system with a shortening of work time and with the use of new approaches to production and to the organization of labor without any harm to the work capacities of the toiling population." In a bow toward the populist vision presented in *State and Revolution*, Lenin claimed that the widespread application of Taylorism would allow each citizen to spend only six hours a day on physical labor and to devote four hours a day to managing the state.

Lenin fully expected that the road to communism via Taylorism would bring "many difficulties," for though "the most advanced elements of the working class" would comprehend these dialectical twists and turns, "certain strata" among the workers would greet Taylorism with "bewilderment and possibly even opposition." He had entrusted Schmidt and Veinberg with the task of drafting a resolution on labor discipline. But at a meeting of the All-Union Central Council of Trade Unions (VTsSPS) shortly afterwards, opposition to piece-rates and Taylorism was firm. Angered by the way in which VTsSPS had been watering down the resolution, Lenin ordered that it be strengthened to include not only the unconditional application of piece-rates and Taylorism throughout Soviet industry, but also the imprisonment of workers who blatantly violated labor discipline.²⁶

When VTsSPS met again, it adopted a resolution on labor discipline that, contrary to Lenin's urgings, bore the mark of a compromise. Without mentioning Taylorism directly, the resolution touched on piece-rates as "one measure, within the general system of measures" that might be considered by trade unions in strengthening labor discipline provided such measures did not "exhaust the employee." The document advised unions to create norm-setting bureaus, but it left the determination of the activities of these bureaus in the hands of the unions themselves. And rather than approving penal discipline against unruly workers, the resolution proposed that unions establish their own disciplinary measures, which in extreme cases might include expulsion from the union.²⁷

Ideological opponents of Taylorism found powerful supporters within the Bolshevik left wing as well as among the Mensheviks, then prominently represented in the trade union movement. Biting critiques of Taylorism, the piece-rate system, and punitive measures against workers poured forth from Bolshevik and Menshevik publications in Bukharin's home base of Moscow. At the end of April Lenin was forced to defend his advocacy of Taylorism and disciplinary coercion before the left communists at a meeting of the Central Executive Committee of Soviets (TsIK), where he accused Bukharin of "throwing sand in the eyes of the workers." He attacked Bukharin and Osinskii for their stands on Brest-Litovsk, piece-rates, Taylorism, and the use of specialists from the old re-

game, and linked their views with the positions of the Menshevik opponent. "Only those who can comprehend that it is impossible to create or introduce socialism without learning from the organizers of [capitalist] trusts," Lenin asserted, "are worthy of being called communists . . . we must learn from them if we are to be communists and not children with infantile notions."²⁸

Opponents of Taylorism, however, continued to hold sway within the trade union movement. In the middle of May, piece-rates were condemned as "an old, outdated form of the speed-up system" by the All-Russian Conference of Construction Workers, which, in a bow to Lenin, allowed the possibility of introducing them only where "workers are insufficiently disciplined."²⁹ The issue provoked a major confrontation at the First All-Russian Congress of Councils of the National Economy (Sovnarkhozy) in late May. Gastev, who addressed the congress, hinted that economic sabotage was being carried out not only by remnants of the capitalist class but by the proletariat as well, which was putting up "enormous opposition" to piece-rate payment and norm-setting. The widespread application of Taylorism in Russia, he said, was "inevitable . . . no matter who would be in power—Lenin, Palchinskii, or Skoropadskii." He called for training a generation of "social engineers" from among skilled workers. In response, opponents of Taylorism ridiculed Gastev as a "poet of capitalism." Taylorism, they said, "can bring us nothing but Russian Orientalism." A resolution condemning the Taylor system failed to gain a majority. But the opposition was strong enough to cause the trade union leadership to conclude that for the time being widespread application of Taylorism was politically impossible.³⁰ Only in January 1919, at the Second All-Russian Congress of Trade Unions, was trade union approval forthcoming on these issues. Even this resolution encountered serious opposition from those who accused the trade union leadership, then firmly in Bolshevik hands, of "caving in and even taking the initiative" in promoting "that most refined form of exploitation of hired labor."³¹

In spite of resistance, the use of piece-rates spread rapidly during these years. In July 1918 21 percent of the labor force worked under the piece-rate system; by September 1918 that figure had climbed to 31 percent. As might be expected, the establishment of piece-rates remained a haphazard affair. Where norm-setting bureaus were set

up, they lacked the guidance and expertise to perform their functions properly. Gastev later wrote that by the end of 1918 "it was clear that it would be impossible to get along without the creation of special institutions that would . . . create a methodology of organization."³² From that moment on, he devoted his energies to the realization of this project. At the end of 1918 Gastev became head of the department of the arts in the Ukrainian Commissariat of Enlightenment. At a meeting of the commissariat's collegium in early 1919 he put forth his most ambitious project yet: the creation of a "school for the social-engineering sciences." Gastev claimed that the proposal was "very positively received" and was blocked only by the incursions of Denikin and the intensification of civil war in the south.³³ Thoughts of a similar project were contemplated simultaneously by Lenin, who in late 1918 and early 1919 suggested that an "Institute for Taylorism," devoted to "the study and practical realization of the principles of the scientific organization of labor," be created. The project met serious objections from left communists on the grounds that Taylorism was nothing less than a "sweat-shop system."³⁴

By the onset of 1919, arguments over hiring prerevolutionary specialists in managerial posts overshadowed the issue of borrowing capitalist organizational techniques. In May 1918 at the First All-Russian Congress of Sovnarkhozy Lenin had successfully sponsored a resolution calling for the employment of specialists from the old regime. The rapid influx of bourgeois specialists into administrative bodies aroused protest within the trade unions and from the approximately 5500 former workers, known as red directors, who occupied the remaining posts in industry. In 1919, as Lenin noted, there was hardly a week when, in one form or another, the issue of the relationship between the red directors and the bourgeois specialists was not debated in the Council of People's Commissars (Sovnarkom). The party program approved by the Eighth Party Congress in March 1919 declared that workers would have to learn the art of management from bourgeois specialists "for a considerable period of time," while expressing the hope that, by "rubbing shoulders with the rank and file of the workers and also with the most advanced among the class-conscious communists," specialists could be won over to the Bolshevik cause.³⁵

But as the civil war entered its most intense, final phase, the

economic situation continued to deteriorate. By 1920 gross industrial production in the largest of Russia's industries slumped to only 18 percent of prewar levels, and gross production per worker to only 26 percent.³⁶ This economic collapse was due in large measure to the disruptions of war. But in many cases it was traceable to the rampant red tape and poor organization induced by the excessive centralization of War Communism and to what the regime routinely referred to as a "lack of discipline" on the part of the working class. Almost by instinct, the Bolsheviks reached for centralist solutions to problems which, at least in part, had been caused by excessive centralization. This paradox was cited by critics of the regime, who turned their attention to the growing cancer of "bureaucratism" afflicting all sectors of political and industrial life. When the civil war drew to a close and the economic situation did not improve, the issue of authority relations in industry became a source of acrimony.

The major function of industry under War Communism was to supply the Red Army with needed supplies. It was only natural, therefore, that Trotsky, as People's Commissar for Military Affairs, should come forth with his own solution to the problems of industrial management. Obsessed with his successful experience as commander-in-chief, he proposed a program for the "militarization of labor" that envisaged the imposition of strict military discipline upon industrial relations, the total subordination of the trade unions to managerial authority, and the creation of labor armies. Among Trotsky's allies in his quest to militarize labor were the proponents of Taylorism within the ranks of the Bolsheviks.

A. Z. Gol'tsman, Gastev's friend from their years of exile in Narým and a member of Gastev's group within the metalworkers union, had a major influence on Trotsky's program. Gol'tsman had argued for the creation of a new "officer corps" for industry, a "worker aristocracy" of managers recruited from the working class and trained in the new science of organization.³⁷ Gol'tsman's idea, which for a brief time enjoyed Lenin's support, was an outgrowth of Gastev's school for social engineers. At the very time when Gol'tsman was advancing the idea of training a worker aristocracy, Gastev was calling for a cultural revolution in the Russian working class, through the universal application of Taylorism, in *Proletarskaia kul'tura*, the mouthpiece of the Proletkult movement. Gastev

shocked the progressive intellectual readership of the journal by defending Taylorism as the logical means for creating the new communist man. "Machines," Gastev asserted, "would be transformed from the managed into the managers," and social norms would penetrate all aspects of proletarian life: "strikes, sabotage, social creativity, food consumption, apartments, and finally, even the intimate life of the proletariat, right down to its aesthetic, mental, and sexual needs." The article elicited a storm of protest, not least from the founder of the Proletkult movement, Bogdanov, who called Gastev's scheme nothing less than "monstrous Arakcheevism"—a charge soon to be leveled against Trotsky.³⁸

Under the influence of Gol'tsman and Gastev, Trotsky incorporated portions of the Taylorists' program into his own platform. In January 1920 he identified the militarization of labor directly with the goals and aims of the Taylorists.

A whole number of features of militarism . . . blend with what we call Taylorism . . . If you take militarism, then you'll see that in some ways it was always close to Taylorism. Compare the movements of a crowd and of a military unit, one marching in ranks, the other in a disorderly way, and you'll see the advantage of an organized military formation . . . And so the positive, creative forces of Taylorism should be used and applied.³⁹

The current economic situation, Trotsky concluded, under which "80 percent of human energy is wasted on trying to get groceries," is "the negation of Taylorism."

In March 1920 three political groupings emerged at the Ninth Party Congress over the issue of labor discipline. In their three platforms were the outlines of the major administrative strategies pursued by the Bolsheviks in the years to come. Trotsky argued for stripping trade unions of their managerial functions and imposing discipline upon the proletariat by force—by blacklists, penal battalions, and concentration camps. The force of disciplinary and coercive measures, he argued, "will reach its highest degree of intensity in the organization of labor in the period of transition" from capitalism to socialism.⁴⁰

In addition to Trotsky and his Taylorist allies, a new faction emerged within the party's left wing, the Democratic Centralists, who criticized the growing bureaucratization of party and industrial

life and defended worker participation in managerial decision-making. Among the sympathizers of the Democratic Centralists were a large number of red directors and trade union officials who viewed Trotsky's program as a reactionary and draconian effort to repress workers and to exclude them from the managerial suite. These officials were particularly critical of Gol'tsman's plan for training a worker aristocracy, which, they argued, sought to replace *kollegial'nost'* (collective decision-making) with *genial'nost'* (rule by the technically gifted). The Democratic Centralists defended the sanctity of the industrial collegium, calling it "a special kind of laboratory in which workers were to be taught the art of management," "a necessary upper class of a management school, giving final training and a much broader outlook" to proletarian administrators.⁴¹

Lenin at first was attracted to the spirit of Trotsky's theses, but found it necessary to distance himself from the political furor surrounding them. Whereas Trotsky tied Taylorism to a program of labor coercion, Lenin differentiated the use of force from the use of technique for fostering organizational efficiency, drawing a line between disciplinary and managerial strategies. On the eve of the congress he emphasized the special character of managerial work. "One might be an excellent revolutionary and agitator, but be completely unsuitable as an administrator." Rather, "in order to manage, one must be competent, one must know all the conditions of production fully and in detail, one must know the technology of this production at its contemporary level, and one must have a certain scientific education." *Kollegial'nost'*, he declared at the party congress, should be abolished because it generated red tape and bureaucratic impediments. Ridiculing the view that the collegium represented a form of management school for workers, Lenin sarcastically called it "a preparatory class for school." Drawing applause from the floor, he added: "We are now adults, and we will be held back in all fields if we behave like school children."⁴²

First Steps

The birth of the Soviet Scientific Management movement can be dated to 1920. In that year, in the wake of the abolition of collective management and while Trotsky was propounding his program of

labor militarization, the Soviet government took its first steps to support managerial research. Though the civil war was virtually over, the first institutions in Soviet Russia for the promotion of Scientific Management were organized not in the civilian sector but in military industry. Before the revolution there had been considerable interest in applying Taylorism to Russia's defense plants. Due to Trotsky's policy of employing specialists from the old regime, many who had participated in these prerevolutionary experiments continued to work in the post-1917 military establishment. Trotsky's personal interest in promoting Taylorism led to the creation of an Initiative Commission for the Scientific Organization of Production under VSNKh's Council for Military Industry (*Promvoensovet*) in April 1920.⁴³

Gastev and his supporters were also taking steps of their own to organize systematic research on Taylorism. In July 1920 Gol'tsman, a member of the Presidium of VTsSPS and head of its tariff department, raised the issue of creating an institute for labor research jointly under VTsSPS and the People's Commissariat of Labor (*Narkomtrud*). Some within the Presidium received the idea skeptically, reacting to it, in the words of one witness, "in a most critical manner." Nevertheless, the proposal was approved, and Gastev was asked to head the new institute. In September 1920, "in the interest of the development of proper tariff and norm-setting procedures," VTsSPS formally decreed the establishment of an Institute of Labor. When *Narkomtrud* approved the merger of its own Institute for the Experimental Study of Live Labor with Gastev's institute one year later, the new unit was renamed the Central Institute of Labor, or TsIL.⁴⁴

It was on the railroads, however, that the movement for the scientific organization of labor—or as it was then already known, NOT (*nauchnaia organizatsiia truda*)—assumed significant proportions. Due to declining rates of productivity and the strains of war, in 1920 the railroad arteries of Soviet Russia were in crisis. Compared with 1913, when 17 percent of all engines were out of commission, in 1920 more than half of all engines were in need of repair. Freight traffic stood still, even though the overall volume of railroad traffic had declined considerably and the number of personnel employed had increased from 815,000 in 1913 to more than 1.3 million by 1921.⁴⁵ Using this crisis to his advantage, Trotsky

persuaded Lenin to assign him to head the troubled People's Commissariat of Railroads. Once there, Trotsky began to implement his program of labor militarization. To overcome opposition within trade union circles, in August 1920 Trotsky established a separate trade union committee, Tsektran, which became the focus of sharp controversy within the party and a lightning rod for discontent over Bolshevik labor policies.

Throughout 1920 Trotsky relied upon Taylorist forces inside and outside the commissariat to ward off attacks on his program of labor militarization. During the summer a conference sponsored by pro-Taylor forces within the union (Gol'tsman was among the twenty-five members of Tsektran's ruling committee) was held to discuss how Taylorism might be used to repair locomotives. This was not a new subject for Russia; Taylorism had been applied with some success on Tsarist railroad lines in the years preceding the revolution. Two positions collided at the conference. Some participants, mainly Tsektran officials, argued for quick efforts to implement Taylorist techniques. Another group, composed primarily of engineers and specialists, some familiar with prerevolutionary experiments in this area, objected that applications of Taylorism were inconceivable, given the shortages of metal that plagued repair shops and the backwardness of railroad equipment. Over the heads of the specialists, the conference approved resolutions calling for the introduction of piece-rates and the establishment of norm-setting bureaus.⁴⁶

By early fall Zinoviev had joined the opponents of Tsektran and issued a call for its dissolution. In November 1920, in large measure to force through his policies within the transportation unions in the face of mounting protest, Trotsky resolved to convene a conference to discuss rationalization on the railroads. He assigned an "organizational troika" to make arrangements for the meeting. The troika subsequently expanded the conference to include all branches of the economy. Its aim was to pose the issue of Taylorism in a broader context, since "the principles of the scientific organization of labor are generalizable for all aspects of economic life."⁴⁷ Undoubtedly this decision met with the approval of Trotsky, who hoped the publicity of an expanded conference would aid him in subduing his trade union rivals. But the strategy backfired, since it provided Trotsky's opponents with an opportunity to bring in reinforcements from outside.

The First All-Russian Conference on NOT that convened in Moscow in January 1920 was transformed into a national event, a show-trial on the proper role of Taylorism in the Soviet republic. It was attended by more than four hundred delegates and received extensive coverage in the press.⁴⁸ Its organizational presidium was chaired by V. M. Bekhtirev, a prominent Russian physiologist with Bolshevik sympathies. As the founder of the State Institute for the Study of the Brain in Petrograd in 1918, Bekhtirev had long been interested in labor hygienics. But his scholarly interests and ideological leanings gave the conference a different outlook from that intended by its organizers. Although more than half of the delegates were transportation workers, less than a third of the proceedings were actually devoted to rationalization on the railroads.⁴⁹ Instead, the major polemics revolved around the potential harm and benefits of the Taylor system—with Taylorists, whose views were defended primarily by Gastev, clashing sharply with anti-Taylorists, whose chief spokesman was O. A. Yermanskii.

Yermanskii had become involved in the revolutionary movement in the 1880s and was a member of the Menshevik faction. From 1918 to 1921 he served on the Menshevik Central Committee and was the leader of the party's left wing. But in the words of one of his Menshevik contemporaries, "this small man had colossal ambitions and an inflated opinion of himself, and even had pretensions toward 'replacing' Martov in the Central Committee." In April 1921, shortly after the First All-Russian Conference on NOT, Yermanskii decided to "leave temporarily" the ranks of the Mensheviks, feebly promising his comrades that he would rejoin when the political situation improved. To many Mensheviks, Yermanskii's betrayal was seen as an effort to save his own skin at a time when the Mensheviks were experiencing severe repression at the hands of the regime.⁵⁰ It was a pattern that was to repeat itself in Yermanskii's behavior several times over the following twenty years.

In 1918, when Lenin publicly endorsed the universal application of Taylorism throughout Russia, Yermanskii published an impassioned critique condemning Soviet interest in Scientific Management. Under his adopted identity as the engineer A. O. Gushko, Yermanskii had been employed by the Russian Technical Society before the revolution, where he was exposed to the Taylorist ideas then so popular among St. Petersburg's technical circles. In particular, the work of one German specialist, physiologist Edgar Atzler,

attracted his attention. Atzler and his colleagues conducted experiments estimating the expenditure of energy required for various tasks. They concluded that the demands of the Taylor system were excessively fatiguing to the worker and threatened his health.⁵¹ These findings neatly paralleled objections to the Taylor system raised by the labor movement. Among Yermanskii's allies at the First All-Russian Conference on NOT were, in the words of one analysis, "representatives of medical science who considered it necessary to keep in mind, above all, the potential preservation of the strength and health of workers in deciding issues of the organization of labor." Yermanskii saw his role as "defending the Marxist position" on the Taylor issue, arguing that Taylorism led to an "intensification" of labor rather than an increase in productivity and brought about the physical exhaustion of the labor force.⁵²

The visible presence of prerevolutionary Taylorists at the First NOT Conference was a sore in the eyes of the ideologically orthodox and a source of considerable friction. As one communist participant described the atmosphere of the meeting, "A number of skirmishes took place between the communists and former Cadets; the forms of address of 'citizen' and 'comrade' alternated one after another, as might be expected at a time of quarrels concerning the methods of organizing labor."⁵³ The primary defender of the specialists and the methods they represented was Gastev, who by this time was already employing prerevolutionary Taylorists at his new institute, TsIT. In the words of one old communist who knew him well in 1919, Gastev was "totally consumed" and "passionately infatuated" with the idea of NOT. To him Taylorism represented a way of refashioning man in the image of machine, of achieving a perfectly ordered industrial society by means of the slide rule and the stop watch. "Engineering," Gastev once wrote, "is the very highest expression of work," and its creative application, "not only to organizational design, but also to remaking man, is the very highest scientific and artistic wisdom."⁵⁴ At the First NOT Conference Gastev unveiled his latest work, entitled "How One Should Work" (*Kak nado rabotat*), which consisted of sixteen commandments for a new work culture. "We spend the better part of our lives at work," Gastev argued, "and we need to learn to work so that it grows easier and becomes a constant, vital school."⁵⁵ Gastev's rules were made into a series of popular posters, one of which hung in the reception room to Lenin's office.

The resolutions of the conference were a patchwork of compromises between these two factions; indeed, later Gastev and Yermanskii would each claim that the document supported his position.⁵⁶ Not only was much effort spent, with little success, trying to define "the scientific organization of labor," but the final resolutions called for yet another, this time broader, meeting to mull over these unresolvable issues once again. The only common resolution recognized the achievements of Taylor but warned against too close an identification of Taylorism with Scientific Management, since Taylorism also contained "unscientific elements leading mainly to an excessive increase in the intensity of labor." Serious disagreements undermined measures aimed at further coordination of the movement. In one working section Gastev pushed through a resolution recognizing TsIT as the central coordinating organ of the NOT movement. But when this same resolution was brought up for the approval of the entire gathering, it was narrowly defeated. The conference favored a central organization, but it "does not believe that it has the right, at the present moment, to select an authoritative organ to act in the name of Scientific Management with all the necessary authority," because of "the uncertainty of the attitudes of executives of economic *markomaty* and the trade unions towards this issue." The resolutions drew the approval of at least one powerful supporter; within a few days of the conference Lenin commanded his aides to "order literature from America, Germany, and England on Taylorization and the scientific organization of labor."⁵⁷

On January 25, 1921, while the First NOT Conference was still in session, the Workers' Opposition published its famous theses on restoring workers' control to industry. Although the issue of Taylorism was not among the explicit concerns of the faction, it drew its primary support from those unions where Taylorist techniques had been applied most vigorously—the transportation and metal-working industries. The Workers' Opposition arose as a protest movement against the growing bureaucratization of industrial and party life and against the disappearance of any semblance of worker participation. Beneath this protest lay a deep apprehension of the increasingly visible presence of Tsarist specialists in key managerial posts and of the methods of management they brought with them. Although the platform of the Workers' Opposition was soundly defeated at the Tenth Party Congress, the sailors of Kron-

stadt revolted while the congress was in session. The political tensions surrounding Taylorism and labor militarization played a key role in provoking the mutiny. In February a wave of industrial unrest paralyzed Petrograd; it was led primarily by transport workers protesting Trotsky's anti-labor policies, including the application of Taylorist methods. The Kronstadt revolt was first sparked when sailors from the Kronstadt fortress made contact with these striking workers.⁵⁸ A month after the suppression of the uprising, a government document on rationalization spoke of "the instinctive mistrust of workers toward all kinds of experiments directed at extracting greater productivity from them." Such mistrust, it said, had placed "a number of strong obstacles" before the Taylorists and had demonstrated the need for "observing extreme caution and deliberation" in introducing NOT, lest overzealousness lead to further disturbances.⁵⁹

How Not to Work

The proclamation of the New Economic Policy (NEP) in 1921 marked a major shift in Bolshevik administrative policies. Under the new system, private market activity was permitted in the trade network, and some small industry was privatized. Large-scale industry, however, remained firmly under the control of the state, subject to a confusing variety of arrangements. Trusts were placed on independent economic accounting (*khozrashchet*), with the right to finance the purchase of materials and labor at their plants. But significant control over the activities of trusts remained in the hands of VSNKh through financial and pricing policies, the appointment and dismissal of officials, inspection, the administrative transfer of material resources from one unit to another, and, at times, simply direct order. In some branches the work of trusts was planned from above in a manner closely resembling the classic model of a command economy.⁶⁰

With its emphasis upon economic efficiency, NEP opened new possibilities for state support of rationalization activity. Indeed, by the end of 1921 Gastev could write that "we are now experiencing a kind of 'epidemic' of labor studies," with thousands drawn into the field for the first time.⁶¹ But controversy continued to plague the new science of organization. The First All-Russian NOT Confer-

ence had revealed significant ideological and methodological differences within the ranks of management experts and had done nothing to resolve the problem of leadership in the movement. Moreover, the austere economic and financial conditions of NEP would place limits on the extent to which the Scientific Management movement could rely upon state support. From 1921 to 1923, when work on Scientific Management was expanding, ideological and methodological differences within the NOT movement widened as a result of a new competition to secure control over limited state resources.

Nowhere was this more clearly exhibited than in the struggle over the control and financing of NOT institutes. In September 1920 Gastev had been allotted 1.2 million rubles from VTsSPS for organizing TsIT. The money, however, was not there to be given. For the first year of its existence the employees of TsIT were paid in kind, not in cash. At the end of October 1920 Gastev sent an urgent plea to the VTsSPS Presidium for financial and organizational support. He had gathered together a staff for the institute "despite very unfavorable conditions." But he was compelled to release "the most valuable employees," since "I am not in a position to guarantee them housing or even a minimal supply of shoes." "I have one employee," he wrote, "who is conducting most valuable work, but who goes around literally without any soles on his shoes, and not one of my employees has a room."⁶² In November VTsSPS decreed material aid for TsIT, but the money promised by the trade union leadership never materialized.

In desperation Gastev appealed to Lenin, who in June 1921 wrote to the People's Commissariat of Finance requesting aid for TsIT. Lenin inquired whether it would be possible to obtain the funds "by selling some of the Romanovs' possessions in Germany." But no money was ever received by TsIT; instead, Gastev's request for half a million gold rubles was gradually cut from half a million to 100,000, from 100,000 to 20,000, and from 20,000 to 8,000. Even this last amount was never received in full by TsIT, which, by this time, had learned "to rely on self-sufficiency while waiting for foreign blessings." As Gastev noted, "We began to collect any equipment we could get by chance and created our own apparatus on the spot; in the absence of metal, we began to make things out of wood." In November 1922 Gastev submitted a proposal to VTsSPS to al-

7. Samuel P. Huntington and Jorge I. Domínguez, "Political Development," in Fred I. Greenstein and Nelson W. Polsky, eds., *Handbook of Political Science*, vol. 3 (Reading, Mass.: Addison-Wesley, 1975), p. 7.
8. J. V. Stalin, *Works*, vol. 6 (Moscow: Foreign Languages Publishing House, 1953), p. 196.
9. Friedrich Engels, *Herr Dühring's Revolution in Science* (New York: International Publishers, 1935), p. 292.
10. H. H. Gerth and C. Wright Mills, eds., *From Max Weber: Essays in Sociology* (New York: Oxford University Press, 1946), p. 231; Max Weber, *The Theory of Social and Economic Organization* (New York: Free Press, 1947), pp. 337-339.
11. See Friedrich A. Hayek, *The Road to Serfdom* (Chicago: University of Chicago Press, 1944), p. 125.
12. P. J. D. Wiles, *The Political Economy of Communism* (Cambridge, Mass.: Harvard University Press, 1962), pp. 18-20.
13. Peter M. Blau and W. Richard Scott, *Formal Organizations* (San Francisco: Chandler, 1962), pp. 185, 247.
14. March and Simon, *Organizations*, p. 50.
15. Zbigniew Brzezinski and Samuel P. Huntington, *Political Power: USA/ USSR* (New York: Viking Press, 1963), pp. 125, 424. See also Allen Kassarof, "The Administered Society: Totalitarianism without Terror," *World Politics*, 16 (July 1964), 558-575; Paul Cocks, "The Rationalization of Party Control," in Chalmers Johnson, ed., *Change in Communist Systems* (Stanford, Calif.: Stanford University Press, 1970), pp. 153-190.
16. Galbraith, *New Industrial State*; Jerry F. Hough, *The Soviet Union and Social Science Theory* (Cambridge, Mass.: Harvard University Press, 1977); Peter C. Ludz, *The Changing Party Elite in East Germany* (Cambridge, Mass.: MIT Press, 1972); Peter H. Solomon, Jr., *Soviet Criminologists and Criminal Policy: Specialists in Policy-Making* (New York: Columbia University Press, 1978).
17. Alfred Meyer, "USSR Incorporated," *Slavic Review*, 20 (September 1961), 369-376; T. H. Rigby, "Traditional Market, and Organizational Societies and the USSR," *World Politics*, 16 (July 1964), 539-557. Even Robert Tucker, who argued that Soviet politics should be understood as a succession of political systems, noted that it evolved "within a framework of continuity of organizational forms." Robert C. Tucker, *The Soviet Political Mind* (New York: Praeger, 1963), p. 18.
18. Peter M. Blau and Richard A. Schoenherr, *The Structure of Organizations* (New York: Basic Books, 1971), p. 136.
19. For a similar phenomenon in American public administration, see Herbert Kaufman, "Administrative Decentralization and Political Power," *Public Administration Review*, 29 (January-February 1969), 3-15.
20. Blau and Schoenherr, *Structure of Organizations*, pp. 111-139; John Child, "Predicting and Understanding Organizational Structure," in D. S. Pugh and C. R. Hinings, eds., *Organizational Structure: Extensions and Replications* (Westmead, Eng.: Saxon House, 1976), pp. 61-62.
21. Francis E. Rourke, *Bureaucracy, Politics, and Public Policy*, 2nd ed. (Boston: Little, Brown, 1976), pp. 151-152. See also Jeffrey D. Strauss-

- man, *The Limits of Technocratic Politics* (New Brunswick, N.J.: Transaction Books, 1978).
 22. Hannah Arendt, *The Origins of Totalitarianism* (New York: World Publishing, 1958), p. 361.
 23. Child's analysis of sixty-two British firms indicated that among large companies poor performers tended to delegate decision-making less than good performers. It is not clear whether decentralization is a cause of good performance or centralization the product of poor performance; indeed, both may be true. John Child, "Managerial and Organizational Factors Associated with Company Performance," in Pugh and Hinings, eds., *Organizational Structure*, pp. 153-154.
 24. Jerry F. Hough, *The Soviet Prefects: The Local Party Organs in Industrial Decision-Making* (Cambridge, Mass.: Harvard University Press, 1969); Gregory Grossman, "Gold and Sword: Money in the Soviet Command Economy," in Henry Rosovsky, ed., *Industrialization in Two Systems: Essays in Honor of Alexander Gershenkron* (New York: Wiley, 1966), p. 235.
 25. Charles E. Lindblom, *Politics and Markets* (New York: Basic Books, 1977), pp. 65-75.
 26. Alvin W. Gouldner, *Patterns of Industrial Bureaucracy* (New York: Free Press, 1954), pp. 207-228.
 27. *Ibid.*; Peter M. Blau, *The Dynamics of Bureaucracy* (Chicago: University of Chicago Press, 1963); James Q. Wilson, *Varieties of Police Behavior* (Cambridge, Mass.: Harvard University Press, 1968).
 28. E. A. Johns, *The Sociology of Organizational Change* (New York: Pergamon Press, 1973), p. 133.
1. *From Revolution to Rationalization*
 1. Margaret Dewar, *Labor Policy in the USSR, 1917-1928* (London: Royal Institute of International Affairs, 1956), pp. 37-38.
 2. Adam B. Uliam, *The Unfinished Revolution: An Essay on the Sources of Influence of Marxism and Communism* (New York: Vintage Books, 1960), pp. 58-89.
 3. See, for instance, Louis Duchez, "Scientific Business Management: What Is It? What Effect Will It Have on the Revolutionary Movement?" *International Socialist Review*, 11 (April 1911), 628-631; Hollis Godfrey, "Attitude of Labor towards Scientific Management," *Annals of the American Academy of Political and Social Science*, 44 (November 1912), 59-73; Robert F. Hoxie, *Scientific Management and Labor* (New York: Appleton-Century-Crofts, 1915).
 4. *Russkija vedomosti*, no. 40, 1913, p. 5.
 5. *Vestnik Evropy*, no. 2, 1913, pp. 299-301, 309. See also *Sovremennik*, no. 3, 1915, pp. 89-108; Heather Jeanne Hogan, "Labor and Management in Conflict: The St. Petersburg Metal-Working Industry, 1900-1914" (Ph.D. diss., University of Michigan, 1981), pp. 83-84.
 6. A. K. Gastev, *Kak nado rabotat'* (Moscow: Ekonomika, 1966), p. 19; Hogan, "Labor and Management," pp. 484-509.

7. Charles S. Maier, "Between Taylorism and Technocracy: European Ideologies and the Vision of Industrial Productivity in the 1920s," *Journal of Contemporary History*, 2 (1970), 28.
8. A. Pankin, *Nauchnaia organizatsiia truda* (Petrograd, 1914), pp. 3-4.
9. Sukhanov wrote under the pseudonym Nikolai Gimmer, in *Russkoe bogatstvo*, no. 11, 1913, pp. 132-154.
10. V. I. Lenin, *Pol'noe sobranie sochinenii* [PSS], vol. 23 (Moscow: Politizdat, 1970), pp. 18-19.
11. *Ibid.*, 24:371.
12. Hogan, "Labor and Management," pp. 484-509. The Aivaz plant was a center of Bolshevik support in the capital. Gastev noted that out of 2000 workers at the plant, more than 300 were "illegals" or under police surveillance. A. K. Gastev, *Professional'nye soluzy i organizatsiia truda* (Leningrad: LGSPS, 1924), p. 11.
13. Karl Marx, *Capital*, vol. 1 (New York: International Publishers, 1967), pp. 556, 557, 553-554.
14. V. I. Lenin, *Izbrannyye proizvedeniia*, vol. 2 (Moscow: Politizdat, 1975), p. 308.
15. Zenovia A. Sochor, "Soviet Taylorism Revisited," *Soviet Studies*, 33 (April 1981), 248-249.
16. Gastev, *Kak nado*, p. 7; A. K. Gastev, *Trudovye ustanovki* (Moscow: Ekonomika, 1973), p. 161.
17. Although Soviet sources acknowledge that Gastev was no longer an active member of the party after 1908, he was present at a large number of governmental meetings in the early Soviet period and was habitually referred to as comrade, a form of address reserved for party members. It appears that throughout these years Gastev lived on the fringes of the party and his membership status was unclear. Gastev did not formally rejoin the party until 1931.
18. Gastev, *Trudovye ustanovki*, pp. 159-160. Gastev later wrote about these experiences in a short story entitled "At the Trolley Depot." Alekssei Gastev, *Poeziia rabochego udara* (Moscow: Sovetskii pisatel', 1964), pp. 37-58.
19. Gastev, *Kak nado*, p. 211. See also Gastev, *Trudovye ustanovki*, p. 160; *Literaturnaia gazeta*, October 9, 1962, p. 3; Maurice Lévy-Leboyer, "The Large Corporation in Modern France," in Alfred D. Chandler, Jr., and Herman Daems, eds., *Managerial Hierarchies: Comparative Perspectives on the Rise of the Modern Industrial Enterprise* (Cambridge, Mass.: Harvard University Press, 1980), p. 134.
20. Gastev, *Trudovye ustanovki*, pp. 81, 160-161. After the failure of the Aivaz strike, a number of workers attempted to slow down the pace of production by proclaiming a counternorm to the norms introduced by administrators. But this could not be put into practice because of the efforts of norm-breakers among the workers and the inertia of old norms. After this experience Gastev began to ponder the social role played by production norms. Gastev, *Professional'nye soluzy*, p. 13.
21. Gastev, *Trudovye ustanovki*, p. 161.
22. Gastev, *Kak nado*, pp. 19-20, 113; Gastev, *Trudovye ustanovki*, p. 161; *Pravda*, June 4, 1922, p. 1; P. Petrochenko and K. Kuznetsova, *Organizatsiia i normirovanie truda v promyshlennosti SSSR* (Moscow: Profizdat, 1971), pp. 15, 25-26.
23. L. B. Genkin, *Stanovlenie novoi distsipliny truda* (Moscow: Profizdat, 1967), pp. 122-123; Gastev, *Kak nado*, pp. 19-20.
24. Personal Archive of A. K. Gastev, in possession of his son Yu. A. Gastev, typescript, "Rabota v profsoiuzakh," bk. 1, pp. 57-58. New York. The platform stated that "if the economic agony in Russia continues, then we will face the naked and definite issue of [deciding] which industrial orientation—German or American—the Russian proletariat should contemplate as its organizational contact."
25. Genkin, *Stanovlenie*, pp. 68-69.
26. Lenin, PSS, 36:140-142, 212-213.
27. *Narodnoe khoziaistvo*, no. 2, 1918, p. 38.
28. Lenin, PSS, 36:271, 311. See also Genkin, *Stanovlenie*, pp. 49, 125-126; A. Yermanskii [pseud. A. O. Gushkol], *Sistema Tellora: Chto neset ona rabochemu klassu i vsemu chelovechestvu* (Moscow: Kniga, 1918). Lenin's speech was the basis of a series of articles published under the title "On 'Left-Wing' Childishness and Petty Bourgeois Morals."
29. Genkin, *Stanovlenie*, p. 128.
30. *Trudy Perogo Vserossiiskogo S'ezda Sovetov Narodnogo Khoziaistva, 26-go maita-4 iunია 1918 g.: Stenograficheski orchet* (Moscow: VSNKh, 1918), pp. 379-380; Dewar, *Labor Policy*, p. 39; Genkin, *Stanovlenie*, p. 149.
31. P. A. Garvi, *Professional'nye soluzy v Rossii v pervye gody revoliutsii (1917-1921)* (New York: Rausen, 1958), p. 56.
32. Gastev, *Kak nado*, pp. 113-114; Petrochenko and Kuznetsova, *Organizatsiia i normirovanie*, pp. 25, 28.
33. Gastev, *Trudovye ustanovki*, p. 161.
34. *Istoria SSSR*, no. 2, 1965, pp. 109-110; O. A. Pozdniakov, *Lenin o problemakh nauchnoi organizatsii truda i upravleniia* (Leningrad: Lenizdat, 1969), pp. 43-44.
35. Lenin, PSS, 38: 57; E. H. Carr, ed., *Bukharin and Preobrazhensky: The ABC of Communism* (London: Penguin, 1969), p. 449.
36. D. M. Kruk, *Razvitiie teorii i praktiki upravleniia proizvodstvom v SSSR* (Moscow: Minvuz SSSR, 1974), p. 36.
37. Jay B. Sorenson, *The Life and Death of Soviet Trade Unionism, 1917-1928* (New York: Atherton Press, 1969), pp. 94-95.
38. *Proletarskaia kul'tura*, nos. 9-10, 1919, pp. 43, 50.
39. I. Trotsky, *Sochineniia*, vol. 15 (Moscow: Gosizdat, 1927), pp. 92-93.
40. *Ibid.*, p. 138. Gol'tsman was defended by Trotsky against attacks by Rykov and others, who characterized Gol'tsman as an "industrialist." Although Rykov had participated in the Naryn discussions with Gastev and Gol'tsman, he did not share their views on Taylorism.
41. S. A. Feduikin, *Sovetskaia vlast' i burzhuaznye spetsialisty* (Moscow: Mysl', 1965), p. 122; *Deviatyi s'ezd rossiiskoi kommunisticheskoi partii: Stenograficheski orchet (29 marta-4 aprilia 1920 g.)* (Moscow: Gosudarstvennoe izdatel'stvo, 1920), p. 101.

42. V. I. Lenin, *O rabote s kadrami* (Moscow: Politizdat, 1979), p. 123; *Deviatyi s'ezd*, pp. 20, 41.
43. P. P. Kovalev, ed., *Nauchnaia organizatsiia truda, proizvodstva i upravleniia: Sbornik dokumentov i materialov, 1918-1930 gg.* (Moscow: Ekonomika, 1969), pp. 126-127.
44. N. S. Il'enko and K. Shamsutdinov, eds., *Nauchnaia organizatsiia truda dvadtsatykh godov: Sbornik dokumentov i materialov* (Kazan: VNIIOkhtrany truda, 1965), p. 689. See also Kovalev, *Nauchnaia organizatsiia truda*, p. 134.
45. Leonard Schapiro, *The Origins of the Communist Autocracy* (Cambridge, Mass.: Harvard University Press, 1977), p. 256; S. N. Ikonnikov, *Organizatsiia i deiatel'nost' RKI v 1920-1925 gg.* (Moscow: Akademiia nauk SSSR, 1960), p. 93.
46. Trotsky, *Sochineniia*, 15:591-593.
47. Petrochenko and Kuznetsova, *Organizatsiia i normirovanie*, p. 46.
48. See *Pravda*, January 25, 26, 28, 29, 1921.
49. I. M. Burdianskii, *Osnovy ratsionalizatsii proizvodstva*, 2nd ed. (Moscow: Moskovskii rabochii, 1931), p. 363; Kovalev, *Nauchnaia organizatsiia truda*, p. 235.
50. B. Dvinov, "Ot legal'nosti k podpol'iu, 1921-1922" (Inter-University Project on the History of the Menshevik Movement, New York, 1955), pp. 24-25. For Yermanskii's autobiography, see O. A. Yermanskii, *Iz perezhitiogo (1887-1921 gg.)* (Moscow: Gosizdat, 1927). There is a good possibility that police pressure played a role in Yermanskii's renunciation of his comrades.
51. Yermanskii, *Sistema Teilorra*. On Atzler and his experiments, see Georges Friedmann, *Industrial Society: The Emergence of the Human Problems of Automation* (New York: Free Press, 1955), pp. 55, 70-72.
52. Trotsky, *Sochineniia*, 15: 593; O. A. Yermanskii, *Nauchnaia organizatsiia truda i proizvodstva i sistema Teilorra* (Moscow: Gosizdat, 1922), pp. viii-ix; *Organizatsiia truda*, nos. 2-3, 1924, p. 38.
53. Burdianskii, *Osnovy ratsionalizatsii*, p. 364.
54. Il'enko and Shamsutdinov, *Nauchnaia organizatsiia truda dvadtsatykh godov*, p. 667; Gastev, *Poeziia rabochego udara*, p. 31.
55. Il'enko and Shamsutdinov, *Nauchnaia organizatsiia truda dvadtsatykh godov*, p. 166.
56. Gastev, *Kak nado*, p. 115; Yermanskii, *Nauchnaia organizatsiia truda*, pp. viii-ix.
57. Personal Archive of A. K. Gastev, in possession of his son Yu. A. Gastev, typescript, "TSIT," vol. 1, pt. 1, pp. 89-90, New York; *Istoriia SSSR*, no. 2, 1965, p. 110.
58. Schapiro, *Origins*, pp. 296-301.
59. Kovalev, *Nauchnaia organizatsiia truda*, p. 131.
60. Alec Nove, *An Economic History of the USSR* (Harmondsworth, Eng.: Penguin, 1972), pp. 96-102.
61. Gastev, *Kak nado*, p. 27.
62. Il'enko and Shamsutdinov, *Nauchnaia organizatsiia truda dvadtsatykh godov*, p. 690; Gastev, *Trudovye ustanovki*, p. 8.
63. Pozdniakov, *Lenin o problemakh*, pp. 46-50. See also Il'enko and Shamsutdinov, *Nauchnaia organizatsiia truda dvadtsatykh godov*, pp. 226-227, 249, 698.
64. *Vestnik truda*, no. 11, 1927, p. 88. See also Il'enko and Shamsutdinov, *Nauchnaia organizatsiia truda dvadtsatykh godov*, pp. 169, 210-211, 222, 226-227, 696.
65. Il'enko and Shamsutdinov, *Nauchnaia organizatsiia truda dvadtsatykh godov*, pp. 228, 676, 701-702.
66. I. M. Burdianskii, ed., *Plat' lei raboty, 1921-1926* (Kazan: Kazanskii Institut NOT, 1926), pp. iii, 1; Kovalev, *Nauchnaia organizatsiia truda*, pp. 155, 159.
67. *Trud*, February 28, 1922, p. 3.
68. Il'enko and Shamsutdinov, *Nauchnaia organizatsiia truda dvadtsatykh godov*, pp. 205, 281-285; Burdianskii, *Plat' lei*, pp. iii-v.
69. Il'enko and Shamsutdinov, *Nauchnaia organizatsiia truda dvadtsatykh godov*, pp. 233, 689-690; D. M. Berkovich, *Formirovanie nauki upravleniia proizvodstvom* (Moscow: Nauka, 1973), p. 91.
70. Il'enko and Shamsutdinov, *Nauchnaia organizatsiia truda dvadtsatykh godov*, pp. 158-159, 234, 675, 686.
71. *Stenograficheskii otchet X s'ezda Rossiiskoi Kommunisticheskoi Partii (8-16 marta 1921 g.)* (Petersburg: Gosizdat, 1921), p. 24.
72. Lenin, *PSS*, 54:120; 53:165.
73. Pozdniakov, *Lenin o problemakh*, p. 127. For other cases, see Lenin, *PSS*, 45:103; 53:163.
74. Lenin, *O rabote s kadrami*, pp. 206, 230.
75. Il'enko and Shamsutdinov, *Nauchnaia organizatsiia truda dvadtsatykh godov*, p. 148. See also Pozdniakov, *Lenin o problemakh*, pp. 76-77.
76. Lenin, *Sochineniia*, 33:331; Lenin, *PSS*, 45:290. Yermanskii's Menshevik past could not be entirely overlooked. In a conversation with A. I. Sviderskii, Lenin requested that Sviderskii send a team abroad to collect foreign literature on Scientific Management. To Lenin's chagrin, this task was entrusted to Yermanskii. Lenin expressed doubts that Yermanskii would properly fulfill the assignment. "He is a Menshevik," wrote Lenin, "and although his book is very good, one can detect a certain malice in it." Lenin, *Sochineniia*, 36:533-534.
77. Ikonnikov, *Organizatsiia i deiatel'nost'*, pp. 13, 20, 55.
78. Lenin, *Sochineniia*, 36:522.
79. Lenin, *Izbranye proizvedeniia*, 3:729; G. Kekechev, in *Organizatsiia truda*, no. 1, 1924, p. 78.
80. Lenin, *Izbranye proizvedeniia*, 3:731. See also L. F. Morozov and V. P. Portnov, *Organy TsKK-NKRRKI v bor'be za sovershenstvovanie Sovetskogo gosudarstvennogo apparata (1923-1934 gg.)* (Moscow: Iuridicheskaya literatura, 1964), pp. 12-13.
81. Adam B. Ulam, *The Bolsheviks* (New York: Macmillan, 1965), p. 569.
82. *Pravda*, March 24, 1923, p. 3.
83. *Pravda*, March 18, 1923, p. 4; M. P. Shevchenko, "Deiatel'nost' kommunisticheskoi partii v osushchestvlenii podgotovki rukovodiashtshchikh kadrov dlia promyshlennosti (1926-1932 gg.)" (Dissertatsiia na soiskanie