The Stakhanov Movement on Soviet Railroads

BY P. KRIVONOSS
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By P. KRIVONOSS
ORDER OF LENIN
GENERAL MANAGER
OF THE SOUTH DONETZ RAILROAD
MEMBER OF THE SUPREME
SOVIET OF THE U.S.S.R.

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VERY profession has its devotees. Personally, I like the work of the locomotive engineer best.

In the summer of 1935, a few months after his appointment to the post of People's Commissar of Railways, L. M. Kaganovich visited the Moscow terminal enginehouse of the Lenin Railroad and conferred with the locomotive drivers. The question he put to them was how to increase the speed of freight trains.

At that time I was employed in the Slavyansk division of the South Donetz Railroad. As soon as I read about this conference, in the papers of July 1st, I made up my mind to reply to the question raised by
the People's Commissar. Several days later my crew ran a heavy coal train on the Slav-yansk-Lozovaya division of our line at a speed of almost 20 miles per hour, as compared with the prevailing speed of 14 miles. On the following day we increased this figure to 20.5 miles and subsequently to 21.5 miles and to 29 miles per hour. Later on there were days when we succeeded in raising the speed of trains hauled by “FD” (Felix Dzerzhinsky) freight type locomotives to 50 and even 55 miles per hour.

This marked the beginning of a new movement on the railroads which was later named the Krivonoss movement in my honor. It became widely known and spread rapidly to all branches of the service, involving thousands of locomotive drivers, dispatchers, yardmen, trackmen, operators and construction men. It was a mass movement of railroadmen aimed at making full use of existing rolling stock and equipment and testing the efficiency standards then in operation.

Alexander Ognev, a locomotive driver of
Zinaida Troitskaya, first woman locomotive driver, now General Manager of the Moscow Circuit Railroad, in her office
the Tula junction, on the Dzerzhinsky Railroad, also began to run trains at higher speeds, and soon attained a record of 33.5 miles per hour on his division, as compared with the regulation speed of 13.65 miles per hour.

Our achievements were soon brought to the notice of the Soviet Government, and on July 30, 1935, a special reception for foremost railroad workers was held in the Kremlin. At this reception, which was attended by the leading members of the government, Alexander Ognev promised to increase the run of his locomotive between enginehouse inspections to 9,300 miles, as compared with 5,600 miles, which was the regulation standard.

In January of the following year Ognev ran his locomotive 9,300 miles without enginehouse inspection; he raised this figure to 12,400 miles in the period from March 10 to April 9, 1936. Later Ognev achieved a still higher record, bringing the monthly run of his “FD” locomotive up to 13,650 miles and reducing fuel expenditure by 105 tons.
Ognev also increased the length of run in between boiler washings eight times, and brought the weight of trains hauled by his locomotive up to 3,000 tons, instead of the 2,400 tons provided for by the then existing railroad standards. His locomotive covered 37,820 miles between successive tire turnings, although the usual run between turnings was only 21,700-24,800 miles.

The example set by Ognev was followed by a large number of railroad workers.

Higher running speeds marked a revolution in railroad operation and necessitated higher efficiency on the part of yardmen. Maxim Kozhukhar, yard foreman of Yassinnovataya Station, reduced the time required for making up standard trains to 30 minutes, then to 25 minutes, 15 minutes and even 14 minutes. On the night of October 6, 1935, Krasnov, yard foreman of Debaltsevo Station, topped Kozhukhar’s record and made up a train in only five minutes.

Three days later, on October 9, conductor
Vorona, of the Krasnoliman division, during a test run, brought a freight train to its destination 8 hours 4 minutes ahead of schedule.

At the same time there began a wide movement to improve and perfect the technical equipment of all branches of the service. Numerous inventions and rationalization proposals were submitted by workers and engineers.

For many years Ivan Kravtsov, veteran furnace builder, had longed to design a new type of furnace, that would consume less fuel and produce more heat. The idea came to him quite by chance, when the physician who attended him during an illness explained the structure of the bronchial tubes. Kravtsov spent several years in perfecting his invention, and succeeded in producing a furnace which secured a greater economy in fuel than any of the existing types. His invention has been examined by a special technical commission, and a new type of fire box for railroad engines is being constructed according to his plans. Preliminary
calculations show that with the introduction of this new fire box Soviet railroads will cut down fuel expenses by about 500,000 rubles a day.

Ivan Trofimov, who has to his record 33 years of uninterrupted work on the railroads, occupies a unique place among the Stakhanovite workers of Soviet railroads. The son of a poor peasant, he is responsible for many progressive innovations and improvements, including the invention of split piston valve packing rings, which drastically cut down steam escape, and a new type of piston valve. Trofimov has also devised a method of using hard grease for the running parts of the locomotive, a method used also on German and American railroads.

In 1929-30, together with his sons, Valentine, Eugene and Victor, all of whom are now railroad engineers, he designed a new type of exhaust steam injector which gives 5 to 7 per cent economy on fuel expenditure and is absolutely reliable in operation.
Maxim Kozhukhar, former yard foreman, now Senior Assistant Station Master at Yasinovataya Station, South Donetz Railroad, with his daughter
At present Trofimov and his sons are working on the complete reconstruction of the steam engine in use on Soviet locomotives. According to their calculations, even on the older type of locomotives, the reconstructed steam engine should reduce fuel expenditure by about 30 per cent.

The Soviet Government has decorated Ivan Trofimov with the Order of Lenin, the highest distinction in the land, in recognition of his services.

In 1929 a twenty-year old section foreman, Bizyayev, designed a new type of track-laying machine, which is now extensively used on railroad construction and track repairs. This machine raises mileage laid per shift from 0.62 miles, which was formerly the maximum, to 24.8 miles.

The Soviet railroads can boast of many men like Kravtsov, Trofimov and Bizyayev.

The wide scope of new inventions, improvements and rationalization proposals on Soviet railroads may be judged from the fact that during the last two years 34,000 such proposals submitted by workers, en-
engineers and technicians have been put into operation.

July 30, the anniversary of the reception given to railroad men in the Kremlin by the leaders of the Soviet Government in 1935, is observed every year as National Railroadmen's Day.

On this day railroad workers in all parts of the country check up on the preparedness of their branch of the service for the coming winter months, which are always the most difficult for the railroad system.

National Railroadmen's Day is marked throughout the country by meetings at which the work for the past year is reviewed, and by social gatherings, balls, and other festivities in celebration of the successes achieved in railroad transport.

The achievements of the Soviet railroads take on still greater significance when one bears in mind that the World War and subsequent foreign intervention played havoc with the Russian railroad system. Hundreds of railroad stations, enginehouses, water towers, and 4,500 bridges were
destroyed. Cross ties were not renewed for several years, and the road-bed was badly in need of repairs. New construction was completely abandoned, and railroad sidings were crowded with battered locomotives and dilapidated cars. Traffic declined drastically; daily carloadings fell from 27,400 in 1913 to 6,200 in 1918, when the volume of freight traffic was only one-fifth of the pre-war figure.

The Soviet Government called upon the workers to revive the railroad system, and the revolutionary enthusiasm which developed in response to this appeal made it possible to bring daily carloadings up to 88,000 by 1938 and to increase the volume of freight traffic over threefold as compared with 1928. In 1937, the last year of the Second Five-Year Plan period, Soviet railroads carried 517,300,000 tons of freight, and four times as many passengers as in 1928.

The thoroughgoing reconstruction of the railroad system began practically only in 1935. Since then the railroads have received several new types of locomotives, including
the “FD” type for freight trains and the “JS” (Joseph Stalin) type for passenger trains. These locomotives exceed the old type in traction power by 50 per cent, and are fitted with mechanical stokers.

The railroads of Central Asia, where water is scarce, have been provided with Diesel electric locomotives, which have proved to be very serviceable.

One thousand one hundred and sixteen miles of line have been electrified and provided with Soviet-made passenger and freight electric locomotives with running speeds up to 86.3 miles per hour.

Among the new locomotives introduced on Soviet railroads is the “SO” (Sergo Orjondikidze) type condenser steam locomotive, which can run as much as 1,000 miles without water refilling.

The Voroshilovgrad Locomotive Works has built a high-power “FD” locomotive with a condensing installation and a new type of high-pressure locomotive with a uniflow boiler. Soviet engineers are engaged in designing several new types of locomo-
A. Ognev, former locomotive driver, now General Manager of the Dzerzhinsky Railroad
ves, among which mention should be made of the steam-electric locomotive designed by engineer Maisel.

In the five years from 1933 to 1938 the Soviet railroads received 186,000 new cars, including 101,000 four-axle freight cars and over 5,000 passenger cars. All railroad cars have been equipped with automatic brakes, and 25 per cent with automatic coupling. The bulk of the freight cars now being built are powerful four-axle gondola cars, hopper cars, tank cars, box and flat cars of from 50 to 70 tons capacity. Soviet industry is now developing the production of all-metal passenger cars of a new type.

Under the Third Five-Year Plan the Soviet railroad system will develop at a still more rapid rate. Among other things, the plan stipulates the construction of 6,820 miles of new line, 4,960 miles of second track, and 1,140 miles of electrified lines in the period from 1938 to 1942 inclusive.

New trunk-lines will be built in the Urals and in Siberia, and several railroads in the R.S.F.S.R., the Ukraine and the Trans-Cau-
casus regions will be extended. The allocations for capital railroad construction during the Third Five-Year Plan period amount to 37,300,000,000 rubles, as compared with 20,700,000,000 rubles under the Second Five-Year Plan.

The number of locomotives in service will increase by 8,000. The plan calls for the construction of 225,000 four-axle freight cars and 15,000 passenger cars; in addition to this 300,000 freight cars and 4,000 passenger cars will be equipped with automatic coupling. Two hundred thousand cars will be fitted with automatic brakes. New car repair plants are being built. The fulfillment of this program will enable the Soviet railroads to raise the volume of freight traffic from 220,000,000,000 ton-miles in 1937 to 316,700,000,000 ton-miles in 1942.

The extensive introduction of new technique on Soviet railroads served to enhance the enthusiasm of the railroad workers. The vast army of railroad workers tenaciously fought to utilize existing equipment to the full, rapidly and completely to master the
latest types of machines, improve the technical efficiency of the service and modernize still further equipment and rolling stock.

Such names as those of locomotive drivers Ognev and Makarov, dispatchers Zakorko and Kutsafin, yard foremen Kozhukhar and Krasnov are known far and wide throughout the Soviet Union, to a no lesser degree than the names of the country's famous actors, scientists and statesmen.

I was a rank-and-file locomotive driver. I have been twice decorated by the government in recognition of my work in raising efficiency. From locomotive driver I was promoted to superintendent of the Slavyansk enginehouse, and later was appointed general manager of the South Donetz railroad. Alexander Ognev was promoted from locomotive driver to superintendent of the Tula enginehouse; later he was made general manager of the Moscow Circuit Railroad, and at present he holds the responsible position of general manager of the Dzerzhinsky Railroad.

Bogdanov, another locomotive driver,
was appointed general manager of the October Railroad after he had transformed the Kirov Railroad, the great polar line of the Soviet Union, into an exemplary enterprise.

Valentine Makarov is another Stakhanovite who has been promoted to responsible work. Like all of us, he comes from a railroad family. He was the first to prove the feasibility of high running speeds on the Far Eastern railroads and the possibility of eliminating the practice of reducing the weight of heavy freight trains in winter.

In 1936 Makarov ran a train from Skovo­rodino (in the Far East) to Moscow in record time and without a single mishap. About a year later he ran a train hauled by a single "SO" condenser locomotive from Moscow to Vladivostok and back under exceptionally difficult winter conditions, thus proving the worth of this new type of locomotive. Only two years have passed since then, and today Valentine Makarov is assistant chief of the central locomotive department of the People’s Commissariat of Railways.

The dispatcher Zakorko, who showed re-
Railroad workers at the Kislovodsk Health Resort, Caucasus
markable work in organizing traffic on his division, is now general manager of the Stalin Railroad, one of the major trunk lines of the country. Another dispatcher, Kutafin, has been appointed general manager of the Southern Railroad, also an important line.

Special mention should be made of Zinaida Troitskaya, a woman locomotive driver, one of the outstanding figures on the Soviet railroads. For many years women were not allowed to drive locomotives in the U.S.S.R., for this work was considered too difficult for them. Troitskaya was the first to prove that women can do this job no worse than men and today hundreds of women are employed as locomotive drivers. Many study courses have been established to provide special training for women who wish to become locomotive drivers or assistant drivers. Zinaida Troitskaya is now general manager of the Moscow Circuit Railroad.

It is hardly necessary to cite the hundreds and thousands of similar examples depicting the development and promotion of Soviet railroad workers. I need only say that among
the members of the Supreme Soviet of the U.S.S.R. there are 42 railroad workers, and that many railroad workers have been elected to the Supreme Soviets of the Union and Autonomous Republics.

One thousand five hundred railroad workers have been decorated with Orders of distinction by the Soviet Government. Approximately 50,000 are holders of the "Stalin Shock Workers' Badge" and "Railroad Merit Badge," which are awarded by the People's Commissariat of Railways for distinguished services on the railroads and initiative in raising labor productivity.

Since the great October Socialist Revolution the number of railroad institutes has increased sixfold, the number of railroad technical colleges has doubled, and the number of railroad technical schools and railroad apprenticeship schools has increased almost elevenfold.

During the Second Five-Year Plan period alone over 15,000 engineers and 34,000 technicians were trained for the Soviet railroad system. The railroad institutes of the
U.S.S.R. employ 2,000 professors and instructors and have a student body of 21,000. Tens of thousands of people attend railroad technical schools and other educational establishments.

Note should be made of the fact that many young engineers, graduates of Soviet institutes, hold key executive positions on the railroads. Among them are such men as engineers Filipov, Bagayev, Dubrovin, Sloevov and Kucherenko, all of whom are Assistant People’s Commissars of Railways. Kovalev, Martyshev, Zeitlin and Brekhunets, young railroad engineers, hold the important positions of general managers of railroads or chiefs of central departments in the People’s Commissariat of Railways. In every branch of the service, including the scientific research institutes, one finds that young specialists predominate. They enjoy the assistance and instruction of such eminent railroad experts as Academician Obraztsov, Professors Vedeneyev, Peredery, Syromyatnikov, Bogdanov and hundreds of others. In a spirit of close collaboration and
team work, they are directing their joint efforts to advance the progress of Soviet railroads and raise the level of all railroad workers to that of engineers and technicians. This latter task has led to the organization on the railroads of study courses which provide the workers with all necessary facilities to improve their qualifications. Last year one million railroad workers graduated from these courses, which are conducted after working hours. The numerous technical centres and hundreds of consultation rooms and libraries have also done much to raise the general level of knowledge of all employees of the railroad system.

Higher skill has led to a rapid rise in labor productivity, attended by a substantial increase in earnings. Locomotive drivers employed on passenger traffic earn over 1,000 rubles a month, and those on freight traffic earn about 850 rubles a month. The average monthly earnings on the railroads amounted to 284 rubles in 1937, which was twice as much as in 1932.

Such is a brief description of the life and
work of Soviet railroad workers, whose efforts are aimed at making the Soviet railroads the best in the world. Undoubtedly this goal will be reached within the next few years.