

Experience of Machine-Tractor Stations Under  
Wartime Conditions

by V. Venzher

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EXPERIENCE OF MACHINE-TRACTOR  
STATIONS UNDER WARTIME CONDITIONS

V. Venzher,  
Candidate in  
Economic Sciences

During the years of the Stalin five-year plans, on the basis of the industrialization of the country and the forced development of the machine-building industry there has been effected a complete technical rearmament of agricultural production in our country.

On the eve of the war, 6,980 machine-tractor stations serviced 97 percent of kolkhoz acreage under cultivation. In MTS and sovkhoses there were more than half a million tractors. Almost half the entire acreage devoted to spike grain crops in kolkhozes was harvested by combines. With regard to level of mechanization of basic agricultural operations (plowing, sowing, harvesting) and with regard to productive use of tractors and combines, there is no country in the world that can compare with the Soviet Union.

Obviously, the difficulties of wartime extremely complicated the activity of machine-tractor stations. For MTS, as for kolkhozes, the war was a period of severe trial of their solidity, strength, and vital activity. MTS passed these trials with distinction. Mobilizing all their manpower and material-technical facilities, they made a tremendous contribution to the general cause of defeating Hitlerite Germany. The aim of this article, then, is to throw light upon the experience of MTS under wartime conditions.

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First of all, let us characterize the difficulties that confronted

MTS during the war. An analysis of these difficulties will aid us more correctly to evaluate the activity of MTS during the period being examined.

For a fixed group of rear area rayons, the capacity of MTS tractor pool and the number of draft animals in kolchozes were sharply reduced from 1941 through 1943. But the volume of field operations not only was not cut, but increased, for during that period, in order to replace the losses from the occupation of the western rayons of the country, an overall expansion of areas under cultivation was effected in eastern rayons. MTS of those rayons which were located in the zone of military operations or which were even occupied for a short time found themselves in increasingly more difficult conditions.

The second considerable difficulty of the war period was the lack of fuel. The war caused a sharp cut in supplying agriculture with petroleum products. Converted to 1 hectare of kolchoz crop, for a fixed group of rear area oblasts there was released considerably less tractor fuel to meet MTS needs in 1942, than in 1940. Changes were also made in conditions for hauling petroleum fuel to points of need.

During the war, conditions for repairing machine-tractor pool became incomparably bad. In 1942, as compared with 1940, the supply of MTS with mechanical parts for tractors (for a fixed group of rear area rayons) was cut several times in monetary expression, as was the supply of spare parts for agricultural machines. During this period the chief source of covering the deficit of spare parts and materials had to be the MTS themselves, repair plants, and enterprises of local industry. In order to show more clearly the complexity

of MTS operations during the war, let us remember that they were deprived of a considerable quantity of well-trained and experienced mechanizer cadres who had gone into the army.

Despite all these difficulties, MTS as a whole performed with distinction its leading role in developing kolkhoz production. Without machine-tractor stations, the kolkhoz rural districts would not have been able so successfully to supply the country and the front with food supplies, and industry with raw material.

Concentrating in MTS modern, most perfect agricultural machines and implements guaranteed the high level of their productive utilization and created the best conditions for maneuvering the machine-tractor pool. At any given moment, depending upon demands and upon new circumstances which had arisen in the course of the war, the machine pool could be directed to a sector of operations which was vital to the fate of the harvest -- either to those managements where it was more necessary, or concentrated to fulfill the most important operations.

The concentration of tractor technology in MTS made it possible to use tractors continuously throughout an entire season of agricultural operations. The arena of application of machine technology in MTS, as is well known, is not confined to the framework of one management alone, but under wartime conditions this mobility had a tremendous significance. The production link with kolkhozes and support for their labor resources made it possible for machine-tractor stations to augment successfully cadres of mechanizers from among kolkhoz workers. MTS were able to instruct, in a centralized procedure, new cadres to conform to the available pool of machines, their types and makes.



The advantages of MTS had a telling effect, finally, in the fact that they, being the material-technical base of kolkhoz production, served as a mighty lever for state influence upon kolkhozes, in the sense of directing agricultural production and organizing this production to conform to the needs of the country. Thanks to this, the gain to the national economy through using first-class machine technology in our agricultural production reached a high level.

Let us now see how machine-tractor stations reorganized their activity to fit the wartime situation, how they overcame the difficulties of the war period, how they realized their advantages, and what new experience in organizing production they accumulated during the war years.

Let us begin with cadres. During the years of peacetime construction, training of mechanizer cadres in agriculture was conducted very intensively and on a broad scale. In all, about 4 million mechanizers were trained from 1933 through 1940. During the prewar years, no less than 1,800,000 persons were mechanizers permanently working in their specialties in sovkhoses, MTS, and kolkhozes. Thus was created that mighty reserve from which the Red Army was able continuously to draw cadres of tank men, truck drivers, motorcyclists, and other war specialists. However, due to this, MTS had to conduct a considerable renewing of mechanizer cadres, particularly tractor operators and combine operators, which formed a group youngest in age and most needed by the army.

Mass training of new mechanizer cadres had already begun by the autumn of 1941 -- the first year of the war. For machine-tractor stations alone, according to information of January 1944, 1,263,800 tractor operators, combine operators, and workers of other specialties

were trained, chiefly at the expense of training kolkhoz workers. In the 1944-1945 training year, more than 300,000 new agricultural mechanizers were trained in mechanization schools, MTS courses, and in sovkhoses.

The following two stages can be noted in the process of training and educating new MTS mechanizer cadres. Up to 1944 there takes place a process of replacing cadres of tractor operators, combine operators and others who had gone into the army by women kolkhoz workers and a process of their mastery of new skills. Since 1944, newly trained mechanizers, hurrying to acquire experience and work habits, are successfully showing their qualities and are thus having an influence upon raising the level of machine utilization and labor productivity in agriculture.

In 1943, the number of women tractor operators in MTS of rear area rayons of the USSR rose to 81 percent of the total number, and the number of women combine operators rose to 62 percent.

We can see how the process of renewing cadres proceeded by following the information of the yearly reports of MTS of the Gor'kiy Oblast. Let us limit ourselves to analyzing the movement in two leading skills: tractor operators and combine operators. (Table 1).

TABLE 1  
NUMBER AND COMPOSITION BY SEX OF CADRES OF TRACTOR OPERATORS  
AND COMBINE OPERATORS IN MTS OF GOR'KIY OBLAST DURING THE  
WAR YEARS

As of 1 January (Year)	Total Tractor Operators	Including Women (in Percentages)	Total Combine Operators	Including Women (in Percentages)
1940	6,823	7.6	718	16.7

1942	3,954	36.3	567	37.0
1943	5,417	59.3	590	58.6
1944	6,634	71.5	804	72.0
1945	6,104 <sup>1</sup>	62.4	672	65.6

(Footnote 1: Decrease in the total number of tractor operators and combine operators in 1945 took place as a result of the change in territory of the Gor'kiy Oblast, when the Vladimir Oblast was formed.)

The table shows that MTS of Gor'kiy Oblast were able by 1944 to replace the diminution of mechanizer cadres. This was achieved basically by attracting women kolkhoz workers to work in MTS and by teaching them new skills. The decrease in the percentage of women in 1945 shows that even in the last year of the war there had been a transition to a more equal makeup of cadres by sex.

During the war years, women became the decisive force in our MTS. In the Moscow Oblast, for example, during 3 years of the war, 14,300 tractor operators were trained, including 8,100 women, or more than 56 percent. Throughout the USSR as a whole, the relative participation of women among tractor operators and combine operators in the final total for the war years rose from 9 percent in 1940 to 55 percent at the end of 1944; that is, more than 6 times.

To aid the woman tractor operator master her new skill more quickly, the period of training was protracted at the directive of the government, and also a considerable amount of work was carried out each year to retrain cadres previously instructed. In the 1943-1944 training year, 100,000 tractor operators were retrained; in the 1944-1945 training year, 150,000 tractor operators and 25,000 combine operators.

Advanced MTS have put into wide practice obligatory apprenticeship of tractor operators for 30 days in the spring, under the guidance of experienced tractor operators (Chkalov MTS, Gor'kiy Oblast, etc) or have at first used them as workers on trailer implements and gradually trained them for work on tractors (First Mikhnev MTS, Moscow Oblast; Krasnokholmsk MTS, Kalinin Oblast; etc). On the basis of systematic operations with tractor operators, the better MTS of the country have continuously raised their degree of skill, successfully preparing a tractor operator-repairman who is able independently to perform the complete set of operations in maintaining a tractor. The experience of apprenticing young tractor operators has spread to all MTS. By a decision of the SMK USSR and the TsK VKP(b) it was established that newly trained tractor operators be released for independent operations only after they have spent a 3-week apprentice period in field operations under the direction of an experienced tractor operator.

Work with cadres has yielded its results. During 3 years of the war, newly trained mechanizers acquired a considerable amount of experience, and this has had a telling effect upon improving MTS operations.

During the war years the total number of mechanizer cadres in the country grew significantly, and this is creating favorable conditions for the further rise in mechanization of socialist agriculture. In the Fourth Stalin Five-Year Plan, which is the plan for establishing and further developing the national economy of the USSR, we are confronted with the grandiose task of renewing and expanding the pool of agricultural machines and implements. As new machines enter agriculture on a mass scale, not only will all the previously trained cadres be used, but a constant training of new, including women, cadres will have to be carried on.

The war demanded of MTS no lesser efforts in resolving the task of repairing the machine-tractor pool and keeping the machines in working condition.

We have already pointed out that in the first 3 years of the war, centralized supply of spare parts was curtailed. In these years industry of union and republic subordination was able to take upon itself only individual obligations for manufacturing spare parts in a centralized procedure. But this procedure, dictated by wartime circumstances, could not provide for the demands of spare parts and materials at the expense of industrial production. Industry could satisfy this demand only in the amount of 30-40 percent. Therefore, the most important source of supplying the machine-tractor pool with spare parts had to be the repair base which land organs and the MTS themselves had at their disposal. In the nature of a state assignment for each MTS there were established yearly fixed, differentiated plans both for restoring old spare parts, and for manufacturing those new spare parts which the given MTS could make, depending upon the equipment on hand.

Practice has confirmed the vitality of this reorganization of repair during the entire war period. MTS of Gor'kiy Oblast in 1942 manufactured new spare parts in the amount of 392,000 rubles and restored old spare parts in the amount of 487,000 rubles; 1943, 651,000 rubles and 1,114,000 rubles respectively; and in 1944, 724,000 rubles and 1,450,000 rubles respectively. In all, machine-tractor stations of Gor'kiy Oblast in 3 years manufactured new spare parts for tractors and agricultural machines and implements in the amount of 1,767,000 rubles and restored parts in the amount of 3,051,000 rubles.

In the first 2 war years, while MTS has large internal resources at their disposal -- they had stocks of old parts which were still not used, normative accumulations of spare parts and materials, and a pool of machines that was less depreciated -- they introduced into the number of operating pools almost the very same number of tractors as in prewar 1940. Only subsequently, when internal stocks were to a considerable degree exhausted, the number of non-operating tractors increased, but in the face of difficulties this increase of temporarily conserved machines has to be recognized as insignificant. As an example let us compare the indexes of utilization of tractive capacity of the tractor pool in the MTS of Gor'kiy Oblast in the last prewar year and during the war (Table 2).

TABLE 2  
PERCENTAGE OF TRACTOR POOL CAPACITY OPERATING IN A  
GIVEN YEAR

	<u>1940</u>	<u>1941</u>	<u>1942</u>	<u>1943</u>	<u>1944</u>
Capacity of entire tractor pool	94.5	92.4	88.1	84.0	83.5
Capacity of pool of wheeled tractors	96.9	95.5	89.9	88.8	87.0
Capacity of pool of caterpillar tractors	90.9	86.1	83.7	74.1	76.2

Consequently, MTS of Gor'kiy Oblast, despite the difficulties of wartime, used almost 9/10 of capacity of wheeled tractors and 3/4 of capacity of caterpillar tractors, and as compared with prewar 1940, as a whole for the entire tractor pool, only 1/10 less than the capacity on hand. Such a relatively high coefficient of utilization of

tractor pool capacity in the difficult war period could be guaranteed only as a result of displaying persistence, inventiveness, and extreme intensification of forces.

Significant aid in the job of organizing and conducting repair of the machine-tractor pool was rendered to MTS by city enterprises. In the order of patronage, many industrial enterprises set aside, for strengthening the repair base of MTS, necessary machine tool and other equipment, made those spare parts which the protégé MTS could not make in their shops, supplied MTS with fitting equipment, and sent skilled workers for the duration of repair operations.

It is characteristic that advanced MTS even under war conditions were able to save capital in repair. In this regard, information of the First Krasnokholmsk MTS, Kalinin Oblast, is indicative (Table 3).

TABLE 3

<u>Years</u>	Net Cost of Working 1 Hectare of Light Plowing (in Rubles)	Including	
		Cost of <u>Fuel</u>	Cost of <u>Repair</u>
1939	55	16.4	9.5
1940	52	15.6	9.5
1941	41	16.3	6.8
1942	46	15.0	11.5
1943	40	13.0	6.1
1944 (to 1 July)	33	13.8	6.1

The lowering of net cost of tractor operations, which had begun



in this MTS even before the war, as is shown by the information of the Table, continued through the course of all the war years, and as compared with 1940, the cost of repair in 1943, converted to 1 hectare of tractor operations, was cut by 3 rubles 40 kopeks.

Decisive victories at the front made it possible from 1944 for the country to undertake anew the centralized production of spare parts and to expand considerably the production of them in a decentralized procedure, retaining however the manufacture of new and the restoration of old spare parts directly in MTS. This improved considerably the supply of MTS with spare parts, helped to raise the quality of repair, and to a great extent determined the expansion of volume of operations in MTS in 1944.

As an example of supply, let us observe the condition of supplying spare parts in MTS of Kurgan Oblast. The total cost of spare parts brought into the oblast or newly made on the spot was 12.7 million rubles in 1944, 64 percent of which was the share of centralized supply, 25 percent the share of decentralized supply, and 11 percent the share of MTS shops. For tractor parts alone, delivery in a centralized procedure increased more than twice in 1 year: from 3.3 million rubles in 1943 to 7 million rubles in 1944.

In 1945 the role of centralized supply of spare parts has increased even more. This has created all the conditions for raising the quality of repair and putting all the available pool of machines into operation, and for the most productive use of them. However the experience which MTS acquired during the war in making new parts and restoring old must even in the future be of essential aid in organizing and conducting repair of MTS machine-tractor pools.



The pool of gas generator tractors was extremely important during the war years. The relative participation of gas generator tractors in rayons where they were concentrated was 9-12 percent of capacity, and this was of appreciable aid to MTS in these rayons. As an example of operations of gas generator tractors during the war we can see the Chernyanov MTS, Tambov Oblast, which has completely changed over to solid fuel. Here there are 41 gas generator tractors, gas generator trucks, and a 35-horsepower stationary motor installed in a repair shop. The advantages of this MTS had a particularly telling effect during the war period. As compared with 1940, volume of tractor operations was not lowered here. Seasonal output of 1 tractor on the average for the MTS comprised 407 hectares in 1943, as against the norm of 400. In an advanced brigade, 760 hectares were worked by one tractor, and the best tractor operator in the MTS, together with his shift alternate, worked 884 hectares. The MTS lowered the net cost of 1 hectare of tractor operations by 5 rubles 24 kopeks against the plan, and in 1943 rendered a saving of 108,000 rubles, including 44,000 for repair.

Together with the best utilization of existing pools of gas generator tractors, a successful solution was made of the problem of converting a large number of liquid fuel tractors ("SKhTZ") to solid fuel. This was a new and extremely essential measure in the struggle to save petroleum products. The example of the same Gor'kiy Oblast is indicative. Over the course of 1943 alone, 796 wheeled tractors in MTS of this oblast were converted to solid fuel. As a result of this, in the total volume of tractor operations as a whole for MTS of the oblast, the share of operations fulfilled on solid fuel rose from 6.4 percent in 1940 to 12 percent in 1943, and to 12.8 percent in 1944, or twice: this made possible a saving of no less than 6,400 centners in 1943, and in 1944 more than 10,000 centners of liquid

fuel. As a whole for MTS of Gor'kiy Oblast, 58,900 hectares of light plowing were worked by "SKhTZ" tractors alone, reequipped to operate on solid fuel: average output of 1 gas generator reequipped "SKhTZ" tractor was 300-400 hectares in the best MTS of the oblast (Borskaya, Chislovskaya, and other MTS).

Conversion of tractors to all possible types of local fuel is of great importance, but no less important are the measures for lowering direct costs of liquid fuel.

The experience of MTS in the Moscow Oblast shows what can be achieved by a systematic struggle to cut petroleum product consumption. In 1942 MTS of the oblast lowered fuel costs by 80 kopeks per hectare of plowing, as compared with 1940, while the First Mikhnev MTS, Moscow Oblast, saved 20 tons of petroleum products in 1943.

The potential extent of saving in petroleum products can be judged if only from the fact that the tractor brigade headed by the most well-known woman tractor operator in the country, Dar'ya Garmash (Rybnovskaya MTS, Ryazan' Oblast), saved 10 tons of fuel in 1944. The best tractor operator of the Moscow Oblast, V. N. Korolev (Komsomol'skaya MTS) saved 5.8 tons of fuel on his tractor during the 1944 season.

Mass training of new cadres of mechanizers, primarily from among women kolkhoz workers, the adaptation of the repair system to meet wartime conditions, the struggle to save petroleum products, and the conversion of a part of the tractors to solid fuel -- all these measures were aimed at reaching the main goal: guaranteeing

the unbroken operation of the tractor pool so that kolkhoz agriculture could fulfill its sacred duty to the Motherland.

Speaking about the role of MTS under war conditions, it is necessary to keep in mind that the military situation had an essential influence not only upon the balance sheet, but also upon the structure of traction in kolkhoz agriculture. Live traction was out to a greater degree than was mechanical. In the structure of the tractive balance sheet of agriculture there took place a displacement in the direction of raising the relative participation of tractor traction. This to a lesser degree pertains to rear area regions of the country and has an especially telling effect in regions which underwent occupation. Prior to the German invasion, 14,400 tractors were operating in sovkhoses and kolkhozes of the Kuban'. After the Germans were routed it was possible to reestablish the number of tractors: 7,800 by November 1944, or 50 percent of the previous pool. There were, however, 9-10 times fewer draft animals. Prior to the German invasion, 16,800 wheeled 15-horsepower tractors were located in the Kura Oblast; at the moment when the usurpers were routed, only 4,000 remained, or only 24 percent; however, with regard to draft animals, of 380,000 horses less than 8 percent were left, while of 22,000 oxen not one remained. This situation to an ever greater degree raised the role of MTS, particularly in the liberated regions, and demanded more complete utilization of the draft animals in the kolkhozes themselves. Corresponding reorganization of MTS and kolkhoz operations was successfully carried out. Kolkhozes used a large number of unproductive cows for agricultural operations, sharply increased the herd of work bulls, and many of the lighter operations started to be carried out by hand. The tractor pool was first of all used for the

most laborious operations which determine production success (plowing, etc).

Due to unfavorable weather conditions in 1943 in a number of regions of the country, MTS took their entire available pool of machines into the field in the springtime, and the plan for tractor operations in spring sowing was fulfilled 96 percent. This had a decisive influence upon the success of the agricultural year. But the quality of repair of tractors which had left for the fields in the spring of 1943 proved to be poor, and in subsequent periods of agricultural operations (fallow, harvesting, plowing), the percentage of plan fulfillment fell off.

In the decree of the SMK USSR and the TsK VKP(b) on the plan for agricultural operations in 1944, it was pointed out that government, party, and land organs of a number of oblasts, krays, and republics had not provided timely, high-quality repair of the tractor pool, and thus had not provided for fulfillment of the yearly plan for tractor operations.

In 1944, MTS did better than in preceding years in preparing tractors, overfulfilling plans for spring field operations while observing agrotechnical deadlines, and successfully carrying out harvesting, sowing of winter crops, and plowing of plowland. In 1944 on fixed territory, MTS carried out tractor operations (excluding threshing) for 14 million hectares more than in 1943. However, as a whole for the Union, taking into consideration the regions liberated in 1944, the volume of tractor operations increased by 25 million hectares.

In 1943, MTS of the advanced Moscow Oblast fulfilled the plan

for tractor operations 122.6 percent, and in 1944, 135 percent, raising the average seasonal output of each tractor 27 percent as compared with 1943 (converted to 15 horsepower). The best tractor brigade of the oblast, lead by A. Reztsova (Bronnitskaya MTS), achieved an output of 1,518 hectares for each 15-horsepower tractor. The best tractor operator in the oblast, V. N. Korolev (Komsomol'skaya MTS) worked 1,620 hectares with his tractor. In 1944, all 114 machine-tractor stations in Moscow Oblast fulfilled their yearly assignments.

A predominant number of regions of the country achieved great improvement in MTS operations during 1944, and many oblasts guaranteed preterm fulfillment of yearly plans. In addition to Moscow Oblast, the following oblasts fulfilled their plans for tractor operations ahead of schedule in September-October 1944: Gor'kiy, Kura, Leningrad, Orlov, Yaroslavl', Smolensk, Dnepropetrovsk, Chernigov, Stalin, and a number of others. Fulfillment of plans for tractor operations were successfully coped with not only by MTS of rear area regions, but by many MTS of liberated regions after they were reestablished. However, MTS in certain regions of Siberia, the Volga area, the Urals, and Kazakhstan, were lagging.

We have already introduced separate information about those losses that were inflicted by the occupying forces upon the power facilities of kolkhoz agriculture. In kolkhozes, sovkhozes, and MTS, as an Extraordinary State Commission has established, the occupying forces destroyed, seized, or sent to Germany 137,000 tractors, 49,000 combines, about 4 million plows, harrows, and other soil-cultivating agricultural implements, 265,000 sowing and planting machines, and 885,000 harvesting and sorting machines. In Nikolayev Oblast,

where the occupying forces stayed more than  $2\frac{1}{2}$  years, it was possible after liberation to collect and repair only 270 tractors out of the original 3,882, or 7 percent.

In the Kuban', from where the Hitlerites were driven quickly, it was possible to recover 50 percent of the previous number of tractors.

At the present time the MTS network has been completely re-established. In all regions where MTS were previously located and operating, they collected and reestablished the entire machine-tractor pool which they were able to find after liberation, they received aid from MTS of eastern regions, and again entered the ranks of operating enterprises. The Soviet State is now concerned with the most rapid supplementing of tractor and machine pools of MTS, so that the former level of agricultural development in liberated regions can be completely reestablished more quickly, and so that the further growth of agriculture can be assured, and the development of cultivation raised.

It is well known that the occupying forces inflicted tremendous damages to the development of cultivation: plowable lands in regions subjected to occupation turned out to a considerable degree to be neglected, were not developed, became overgrown with weeds, and lost their cultivable condition; correct crop rotations were disrupted, and boundary marks were destroyed. The same can be said also about that small part of the land which was cultivated during the occupation period. The technique of cultivation was so low that even this part of the land lost its cultivable condition to a considerable degree. Plowing was done on a small scale, on individual sectors, and



no struggle was waged against weeds and agricultural pests. And the situation could not have been different under the system of enforced, slave labor which the occupying forces introduced.

The MTS in liberated regions have been entrusted with the task, so important to the national economy, of bringing plowable lands to a cultivable condition.

After industry has switched over to peacetime production, after the remaining tractor plants now under construction are put into operations, other than the Altay Tractor Plant, and after the Stalin-grad and Khar'kov plants are rebuilt, our country will be able to increase considerably the tractor pool of MTS and, on that basis, to resolve successfully the task of reestablishing and further raising agricultural production.

Many MTS of liberated regions, experiencing insufficiency of power, are utilizing the available pool of machines in combination with those draft animals which remain, and with the active laboring participation of kolkhoz masses are fulfilling and overfulfilling state assignments for reestablishing agriculture.

An example of rapid reestablishment could be MTS of Moscow Oblast. All MTS of liberated regions of Moscow Oblast are fulfilling plans for tractor operations and are outstripping MTS of other oblasts.

MTS of the Kuban' are being reestablished well. In 1944 they successfully fulfilled their production plan, but 30 MTS considerably overfulfilled their yearly plans for tractor operations. MTS of Krasnodar Kray in 1944 fulfilled their plans for payment in kind 125 percent. As compared with 1943, they raised the average output of

each 15-horsepower tractor by 140 hectares of plowing. MTS of a number of oblasts in the Ukraine (Dnepropetrovsk, Stalin, and others) also overfulfilled the plan for tractor operations in 1944. But individual machine-tractor stations have shown themselves to be fine models of operation. The Staro-Beshevskaya MTS, Stalin Oblast, in one year's operations returned to itself its former glory. It fulfilled the plan for tractor operations 170 percent, yielding an average output of 555 hectares for 1 conditional tractor, and saving 20 tons of fuel. The best brigade of this MTS, a brigade member of which is P. Angelina, who is well-known to the entire country, worked more than 1,100 hectares for each conditional 15-horsepower tractor, and saved more than 4.2 tons of fuel. In the first year after the occupying forces were driven out kolkhozes serviced by this MTS collected an average of 11 centners of grain from each hectare.

Kolkhozes of liberated regions are especially clearly aware of the important significance of machine-tractor stations in kolkhoz production. In the process of reviving MTS, there arose a mass movement to have kolkhozes participate in construction work of MTS being reestablished. Initiators of the movement for accelerated construction in MTS by using kolkhoz forces were the kolkhoz workers of Noginsk Rayon, Moscow Oblast, who transformed the construction of the Noginsk MTS into a national works project. At the same time the kolkhoz workers of Noginsk decided to raise their MTS to a new, higher level of production perfection, and, apart from structures for production purposes, to build for the MTS all the necessary living and cultural-education buildings. In a short time were built: capital repair shop, sheds for storing agricultural machines and implements, motor garage, mechanized motor base, a drier for wood blocks, and



also the general living accommodations of the tractor operators and all the cultural-everyday institutions underwent capital repair. All this was fulfilled in the order of national construction without any state outlays whatsoever.

The beginning of the Noginsk kolkhoz workers found a wide response. Accelerated construction in MTS is being carried out in Smolensk Oblast, in Belorussia, and in other regions of the country.

The improvement of MTS operations in rear area regions of the country in 1944 and the successfully conducted process of reestablishing MTS in liberated regions have laid a firm foundation for the further raising of MTS activity.

During 9 months of 1945 machine-tractor stations worked with their tractor pool 20.8 million hectares more than in 1944. By 1 October 1945, combines had collected 2,733,000 hectares more of grain crops than in 1944. By 10 August, the yearly plan for tractor operations had been fulfilled ahead of schedule by MTS of Leningrad Oblast; by 20 August, by MTS of Gor'kiy Oblast; and by 25 August, by MTS of Moscow Oblast. In September, MTS of Smolensk, Yaroslavl, Tula, and Ivanovo Oblasts, Karelo-Finnish SSR, and the Tatar and Udmurt ASSR had fulfilled their yearly plans for tractor operations ahead of schedule.

For MTS the war year of 1944 was a year that was crucial not only in the sense of raising the volume of completed operations, but also in the sense of shortening time limits for operations and achieving better quality in carrying them out. Precisely this last circumstance was the chief success of MTS. Raising the level of agrotechnology guaranteed deriving better harvests; this in its turn was a

factor in raising the social economy of kolkhozes and their fulfillment and overfulfillment of plans for selling their products to the state and for payment in kind for work on MTS. In 1944, as compared with 1943, the average output for 1 15-horsepower tractor in an MTS rose 29 percent for the country as a whole; payment in kind for work on MTS was almost twice as much.

The first successes realized by MTS in 1944 and 1945 were first of all caused by the increased skill of new cadres of mechanizers in agriculture and by assigning them to MTS. Now new mechanizers, who had grown up during the war, are for the most part higher-quality cadres, cadres which are more skilled and experienced; since new cadres underwent training during the severe period of the war, they acquired work patterns for using machine-tractor pools, for repair work, and for organizing tractor utilization under various production conditions, and they developed new methods of achieving higher labor productivity.

In 1944 among tractor brigades of the country there arose a competition for working no less than 1,000 hectares (converted to plowing) on each tractor in the brigade. This was a new phenomenon which had arisen during the war. Earlier, separate tractor operators had undertaken such high obligations for themselves, but now whole brigades did.

A study of the experience of advanced MTS of the country shows the development of controlling the tractor park, a development which had grown during the war.

Advanced MTS understood that the decisive link in tractor utilization is the tractor brigade, and therefore they expanded the

rules and obligations of the brigade members, made it possible for them to show initiative and to strengthen the brigade management in all ways. In these MTS, the brigade was a complete economic organism with shops, corresponding to the field conditions, for conducting preventive repair of tractors; moveable sheds or permanent cellars for storing petroleum products; permanently fixed pools of trailer machines and implements; depots of necessary parts for conducting field repair within the time limits planned by the graph for technical maintenance of tractors; and with all the necessary servicing equipment and a cultural camp for the tractor operators.

Depending upon local conditions, each tractor brigade was assigned for a number of years to a definite tillage brigade of the kolkhoz, to a separate kolkhoz, or to a group of smaller kolkhozes. All the above-enumerated systems of organizing tractor brigades makes them in effect permanent brigades, when they cultivate the same fields year after year, becoming excellently familiar with their condition and their predecessors and bearing full responsibility for the results of their labor.

But increasing the role of tractor brigades and the higher level of their material-technical supply lays new obligations upon MTS in the sphere of tractor utilization and training of mechanizer cadres. To control a tractor pool consisting of several tens (and sometimes even hundreds) of tractors, with its entire pool of trailer tractor implements is a job that demands a high degree of perfection in control. Tractor brigades, of which each MTS has 15-20 (large MTS have considerably more), and the tractors assigned to them for the period of field operations are concentrated by sectors and by types of operations, and it is impossible to observe them all at any one

time. This determines three basic aspects of controlling tractor pools in the field.

(1) The establishment of exact planned assignment for the entire agricultural season and by periods of operation for each tractor brigade, by time limits and types of operations and plans for field repair of tractors in conformity with the volume of forthcoming tractor operations; (2) the drawing up of working plans (graphs) for each tractor brigade within the limits of each agricultural period; (3) a system of active daily check of operations of the tractor pool for taking urgent steps and a systematizing of the information derived from this check for recording the experience and the efficacy of control.

Planning without check does not reach its aim. In advanced MTS, check of fulfillment is well set up, and this decides the success of the job. Many MTS introduce a dispatcher service, others limit themselves to receiving daily evening reports from each brigade with information about the operations of each tractor by shifts. This makes it possible immediately to act upon the slightest deviation from the 24-hour graph. Every day the MTS director or chief mechanic analyzes the 24-hour operations of the tractor pool and takes the necessary steps to eliminate any detected deficiencies immediately. It became legally binding for advanced MTS to fulfill their daily plan not as a whole for the MTS, not as a whole for tractor brigades; but for each brigade individually, and within the brigade for each tractor assembly.

The successes of MTS would have been impossible without the colossal support which socialist industry gave them. During the course

of the war, from 1944, industry sharply increased output of spare parts and repair materials and thus aided MTS in bringing their pool of machines up to the best condition. As a result of the victorious completion of the war, the country was able again to undertake the widescale development of the production of agricultural machines. By the fourth quarter of 1945, according to the state plan, industry was to release 5 times more tractor plows than in the first quarter; 18 times more combines; 30 times more tractor cultivators; 12 times more tractor threshers; 16 times more tractor sowing machines; and 5 times more reapers. All these in their basic mass go to rearm machine-tractor stations and lead to a further increase in MTS operations.

Relying upon the experience of wartime and upon technically more skilled cadres of tractor operators who have passed severe training under wartime conditions, and having the mighty support of socialist industry at their disposal, machine tractor stations are self-assuredly proceeding along the paths of improving their activity, thus guaranteeing the further rise in socialist agricultural production.

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