

From Tractors to Tanks

The Stalingrad Tractor Plant was not originally built to produce tanks, but rather to assemble tractors for agricultural purposes

The Stalingrad Tractor Plant (STZ) is one of the most famous military production plants in history, not least due to its status as having remained in production until the plant itself became the epicentre of the battle that turned the war on the Eastern Front in favour of the Soviet Union.

Stories of unpainted tanks moving directly into combat may be slightly exaggerated, but the location of the plant and its central role in the battle of Stalingrad are historical facts. The plant was not however originally built to produce tanks, but rather to assemble tractors for agricultural purposes. Tank

production was a later consideration, as it was at several Soviet manufacturing plants now primarily known for tank production.

The city of Stalingrad, as with several cities on the Volga river, is very long but also narrow, stretching today 70km along the west bank of the River Volga.





The Stalingrad developed STZ-15/30, built-in Stalingrad as the STZ-1, was later also built at the Kharkov Tractor Plant (KhTZ). This Kharkov-built example is in the (old) military museum in Minsk

A destroyed SKhTZ-15-30 (Kharkov- built) tractor in the summer of 1941



As such, the whole city was within enemy artillery range for much of the battle, the results of which can still be seen in places today.

The city was renamed Volgograd in 1961 as part of the Soviet de-Stalinisation programme following Stalin's death in 1953.

The Battle of Stalingrad began in August 1942, when the German 6th Army and 4th Panzer Army started the attack on the city and its environs. It lasted until the surrender of the aforementioned army by Gen Friedrich Von Paulus in February 1943 after the last Axis-held airstrip in the region had been captured, denying resupply from the air.

Stalingrad was one of the largest battles in the history of land warfare, with the Red Army facing down German, Romanian, Hungarian and other Axis forces. The actual losses are disputed, but Axis forces lost between 647,000 and 948,000 killed, wounded and captured. The Red Army lost an estimated 479,000 killed or missing in action in the immediate environs of Stalingrad. Comparing these figures with the combined Allied losses for all of World War Two gives some perspective as to the intensity and ferocity of the single battle.



A typical retouched Soviet-era illustration of STZ-3 tractors at the STZ plant in April 1945, after production had restarted according to the original photograph caption



A grainy photograph showing an STZ-3 in the despatch area of the STZ plant in Stalingrad



STZ-5 artillery tractors, produced alongside the T-34 tank at the STZ plant, awaiting delivery acceptance by the Red Army



The distinctive features of the Stalingrad produced welded turret T-34 include the turret undercut and sight arrangements

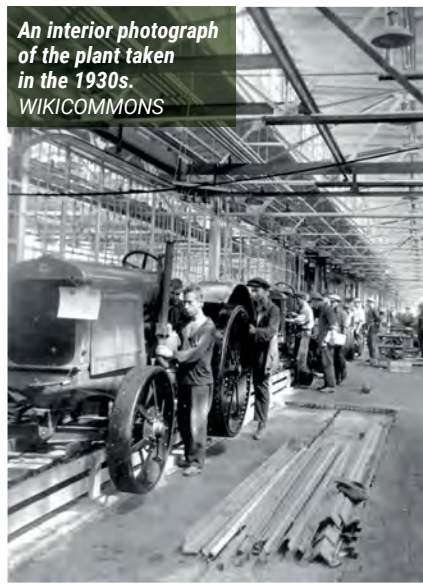
Early Days

The STZ was originally built to produce wheeled and tracked tractors for use in industry and agriculture, and latterly also for the Red Army. The STZ-15/30, sometimes also designated STZ-1, was the first series-production tractor built in the Soviet Union for agricultural use as the country rapidly modernised and mechanised in the early 1930s.

The huge STZ factory on the banks of the River Volga began production of the STZ-1 'International' tractor with the design and engineering assistance of the McCormick Company. The first STZ-1 wheeled tractor left the STZ production line on June 17, 1930. By 1932, the plant was producing 144 STZ-1 tractors per day.

The STZ-1 was a rudimentary 'all-metal' tractor, with even the road wheels being made entirely of stamped parts, but eminently suitable for Russian agricultural conditions. From 1931, production of the same tractor began at the Kharkov Tractor Plant (KhTZ) as the SKhTZ-NATI.

An interior photograph of the plant taken in the 1930s.
WIKICOMMONS



T-26 Light Tank Production

In the early 1930s, a special design and experimental department was organised within STZ, with the task of preparing design documentation to modify the T-26 tank for series production at STZ.

The same team at STZ would also later work on preparing the T-34 for series production at the plant.

In August 1933, Workshop №2 was completed at STZ, specifically organised to produce T-26 light tanks as a secondary production centre to primary T-26 production at the Leningrad Kirov Plant (LKZ).

The first five T-26 tanks produced at STZ were delivered to the Red Army by the end of 1933. However, due to difficulties related to conversion to the assembly of armoured vehicles rather than simpler



A restored STZ-3 at the Military Glory of the Urals Museum, Verkhnyaya Pyshma, Russia. JOHN HAM

and lighter tractors, STZ delivered only a further 23 T-26 tanks to the Red Army in 1934, albeit with the number rising to a still modest 115 tanks delivered in 1935.

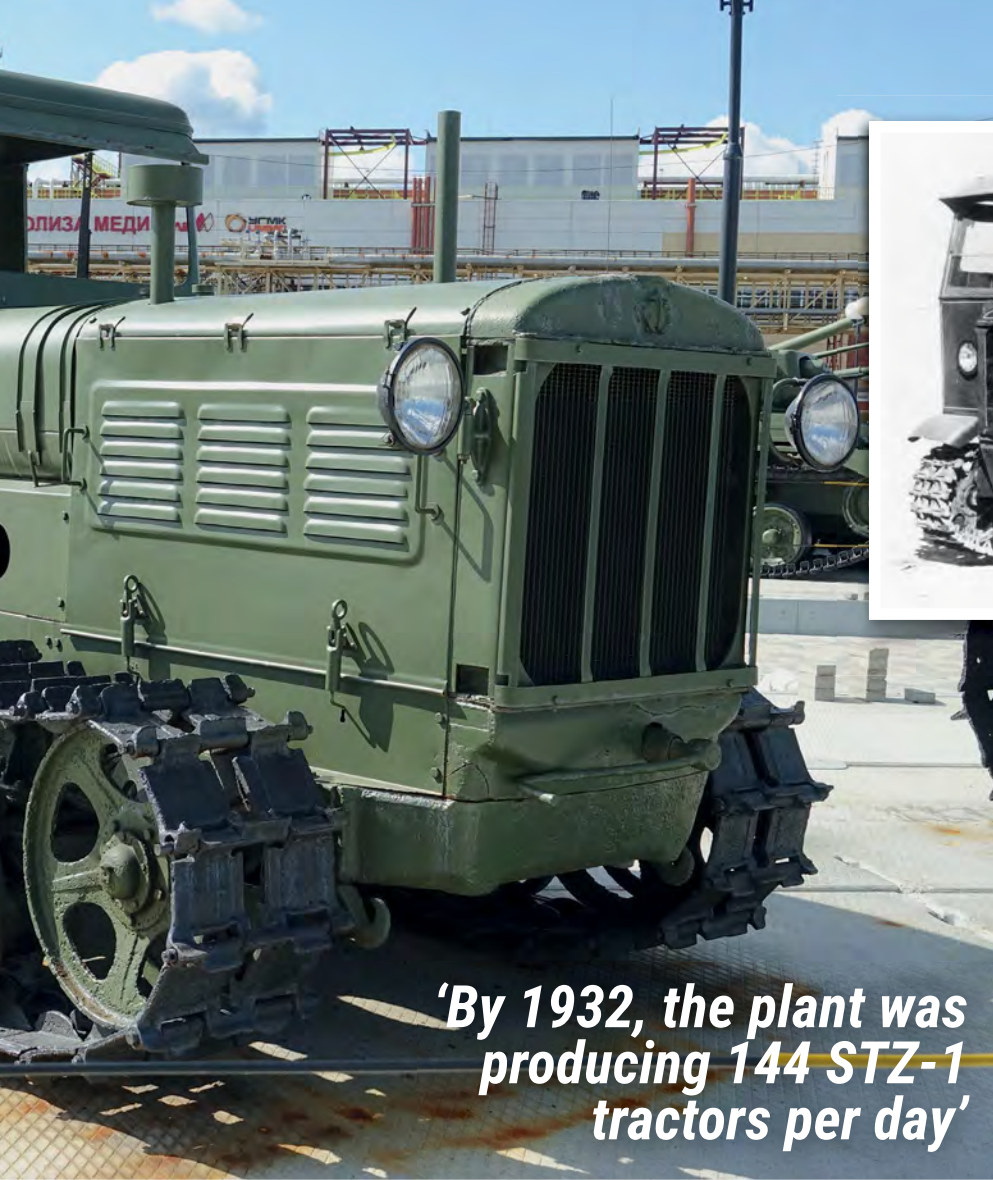
These were minuscule numbers by Soviet production standards, but before the outbreak of war, STZ remained primarily a tractor rather than a tank production plant. Production of the T-26 tank would nevertheless be a particularly useful learning experience considering the future importance of STZ in Stalingrad.

STZ-3 Tracked Agricultural Tractor

From 1933, work began at the National Automotive and Tractor Institute (NATI) in Moscow on a new tracked agricultural tractor for production at the tractor plants in Kharkov and Stalingrad. The STZ-3 tracked agricultural tractor was built at STZ from 1937 until 1952, during which time some 191,000 vehicles were produced.

Although primarily an agricultural tractor, the STZ-3, powered by a four-cylinder petrol (multi-fuel) engine developing 52hp, had a tow capacity of five metric tonnes. It was widely used by the Red Army during the initial phase of World War Two when large numbers were pressed into military service.

The same tractor design was also



'By 1932, the plant was producing 144 STZ-1 tractors per day'

built in Kharkov as the SKhTZ-NATI. The 'S' meaning 'Selskoye Khozeistvo' – agricultural use, KhTZ being the manufacturer and NATI the Moscow-based tractor design bureau where the design was originally penned - for series production at Stalingrad and Kharkov.

STZ-5 Artillery Tractor

As the STZ-3 agricultural tractor was being developed at the NATI institute in Moscow, work was undertaken in parallel on a forward control cab version specifically designed as a medium artillery tractor for the Red Army. The STZ-5 featured a small cab and a rear cargo area to accommodate the gun crew and ammunition.

Mechanically the STZ-5 was identical to the STZ-3, but it was fitted with small link 'road' tracks as opposed to the grouser tracks of the agricultural STZ-1, which were designed for fields rather than road transport. The load platform could accommodate 1,500kg, and the STZ-5 could tow artillery of up to 8,000kg. The STZ-5 was built at STZ from 1937 until 1942, latterly in parallel with T-34 assembly until production was terminated as all priority was by then on tank output. A total of 9,900 STZ-5 tractors were

built, making the STZ-5 one of the most common of all Red Army specialised artillery tractors.

T-34 Medium Tank Production

Production of the T-34 was originally planned at Plant №183 (the former Kharkov Steam Locomotive Plant - KhPZ) and the 'Dzherzhinsky' plant (STZ) in Stalingrad on the banks of the River Volga in southern Russia.



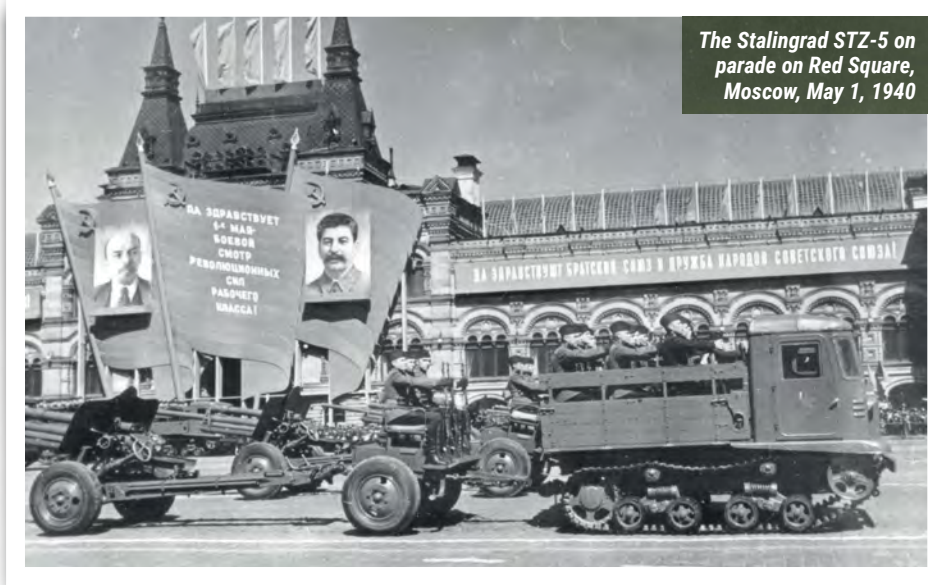
The STZ-3 was later adapted specifically as a forward control cab artillery tractor for military service. This is a prototype STZ-5 based on the STZ-3 chassis but with forward control cab, rear cargo area and 'road' tracks. MIKHAIL SVIRIN

The plant in Kharkov had, by 1940, almost a decade of experience in tank production, having developed the T-12 and T-24 medium tanks, and series-produced the BT series of 'fast tanks' and the T-35 heavy tank. By contrast, the STZ plant had been built to produce wheeled and tracked tractors for agriculture and industry, albeit with the Red Army latterly taking delivery of more specialised tractors for use as artillery and general-purpose transport use.

In 1940, the same department within STZ that had earlier organised limited T-26 production at STZ worked to prepare the Kharkov-designed T-34 medium tank for production at the same plant.

STZ used the technical documentation provided by Plant №183 in Kharkov to develop T-34 production in Stalingrad, with modifications to allow for local production requirements and alternative local sub-component contractors.

By comparison with Plant №183 in Kharkov, T-34 production was also



The Stalingrad STZ-5 on parade on Red Square, Moscow, May 1, 1940



An STZ-5 in Red Army service, complete with guitar carrying gun crewman, August 1942



An STZ-produced T-34 turret, now located at the Central Armed Forces Museum in Moscow



T-34 turrets, of cast and welded construction, are today located at strategic points around modern Volgograd defining specific points in the Battle of Stalingrad



This T-34 M-1942 today stands outside the former STZ plant in Volgograd in proud recognition of the workers who kept the plant operating during the 1941-45 'Great Patriotic War'

slow to start at STZ and pre-war remained more modest in scale, with only 226 STZ built T-34 tanks being delivered to the Red Army before the outbreak of the 'Great Patriotic War' on June 22, 1941. The plant continued to assemble new T-34s on a massively increased scale during the war and undertook capital repairs of damaged T-34 tanks and the repair of V-2 diesel and M-17 petrol engines. After the evacuation of the Kharkov plant to Siberia in the autumn of 1941, the STZ plant remained one of the main suppliers of new tanks to the Red Army until the early summer of 1942. By this time the newly-established 'Tankograd' cities of Chelyabinsk (ChKZ also having formerly been a tractor plant), Nizhny Tagil and Sverdlovsk were online and Axis forces were threatening the loss of Stalingrad. Production of T-34 tanks was

as they were referred to in official Soviet documentation, using hull and turret sets provided by the 'Krasny Oktyabr' (Red October) plant in Stalingrad.

Hence the situation whereby Plant №264 built T-34 hull and turret sets for final assembly at STZ, while receiving T-60 hull and turret sets from the nearby Krasny Oktyabr plant for final assembly of T-60 tanks within its territory. These plants are not as widely publicised as the STZ plant but were equally critical in the defence of the city in its darkest hours.

In total, starting from the autumn of 1941, Plant №264 built 1,174 T-60 tanks before production ceased in July 1942 to concentrate on the production of T-34 components for STZ and also due to the T-60 having been replaced at a state instruction level by the better armed

STZ produced T-34 tanks during delivery acceptance. Note the mix of cast and welded turrets, the latter with the distinctive STZ 'chisel' in the frontal turret armour, the sloped STZ gun mantlet shield and the all-steel road wheels



finally stopped at STZ only on September 13, 1942, when the fighting was literally on the territory of the plant. STZ produced a total of 3,405 T-34 tanks during the war before being temporarily overrun during the battle that sealed the fate of the Third Reich on the Eastern Front.

T-60 Small Tank Production

In addition to T-34 production at STZ, tank production was also undertaken at Plant №264 at Krasnoarmeisk, then a suburb of Stalingrad. The Krasnoarmeisk shipyard had been established in 1931, being renamed Plant №264 in 1940, at which time it was primarily building Type 1124 river launches which were armed with T-28, and latterly T-34 turrets. From 1940, the plant built T-34 hull and turret armour sets which were shipped to the nearby STZ plant for final assembly. But after the outbreak of war and the evacuation of Kharkov and its manufacturing facilities, the plant began to produce complete T-60 'small' tanks

and armoured T-70 light tank - primarily produced at GAZ in Gorky.

Stalingrad Today

Stalingrad, today Volgograd, was always a city with a large industrial presence. As with other cities such as Chelyabinsk, the founding of a tractor plant would in the years ahead form the basis of mass tank production that would play a determining role in the outcome of the war on the Eastern Front.

As has been related, the T-34 production at STZ is the best-known result of the industrialisation of the city and its role in the subsequent war, but there were, and remain, several other defence plants in the city the role of which was also not inconsiderable.

It is an amazing feat that STZ, which began producing rudimentary wheeled tractors in 1930, would only one decade later be producing the T-34 medium tank, while a shipyard along the river would also be producing smaller tanks. For a few

The T-60 tank was also assembled in Stalingrad in 1941-42 at Plant №264, which also fabricated T-34 hull and turret sets for final assembly at STZ along the river



months after the fall of Kharkov, STZ was, in fact, the main T-34 production centre, while mass T-34 assembly was being re-organized behind the safety of the Ural Mountains in Siberia.

As with the situation with the Siege of Leningrad, having a tank assembly plant located within the city, two in the case of Stalingrad, played no small part in the eventual outcome of events.

As might be expected, modern Volgograd still has many visible references to the famous role of the city as the turning point of World War Two on the Eastern Front.

The famous Gerhardt Mill building remains in the state it was left after the battle, a sobering reminder of just how hard-fought the battle was, the building and

nearby museum now being surrounded by a collection of tanks and other vehicles.

The old STZ factory remains in production today, with a T-34 M-1942 located on a plinth outside the main office entrance.

Another T-34 is plinth-mounted as a memorial in the south of the city, with a third T-34 behind the massive monument to Mother Russia at Mamaev Kurgan, the hill to the west of the city centre which dominates the landscape.

As is often related, grass would not grow on the hill for many years after the war due to the sheer level of metals embedded in the earth on one of the most contested areas of ground on the planet.

Another specific feature of Volgograd today is the pedestal-mounted tank

turrets located around the city centre, that demarcate the front line at different times of the battle, which ultimately included the territory of the Stalingrad Tractor Plant itself.

The turrets are an ever-present reminder of the past, not imposing, but omnipresent, standing guard around the modern city, something hard to capture in words alone.

Military production remains a major enterprise in modern Volgograd, with the manufacture of everything from light armoured vehicles to the final assembly of road-mobile intercontinental rocket systems.

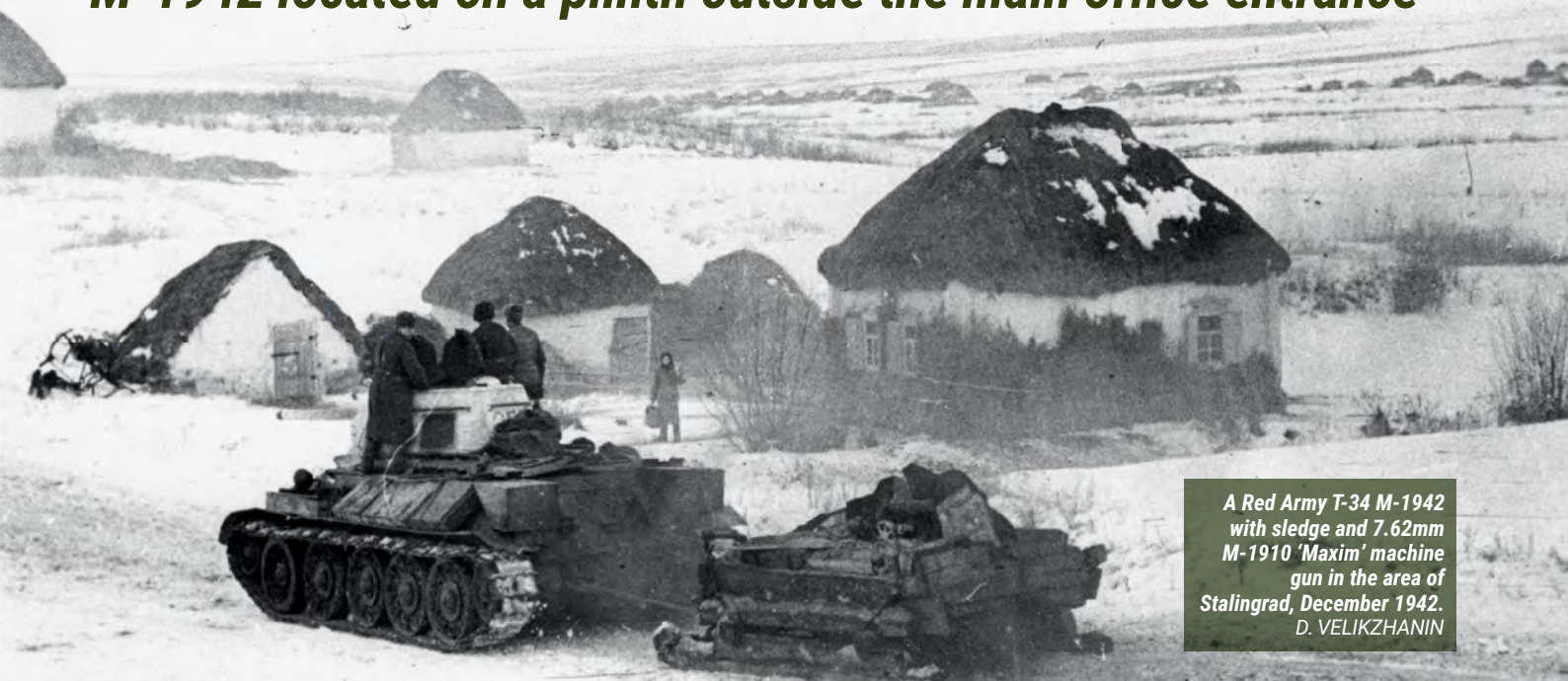
But in Volgograd, it is the sense of history that prevails, a city that would not surrender despite the odds, but also would ultimately witness the surrender of the German 6th Army and 4th Panzer Army, and the capture of the remaining 91,000 troops of what was at one time a force of over well over 600,000 men.

For those interested, they can research the varying statistics, but the Red Army claims to have recovered more than 250,000 German, Romanian and Hungarian Axis fallen on the battlefield, with totals as high as 800,000 Axis soldiers killed, wounded, captured or missing in action.

To give some sense of scale, that is more than eight times the entire size of the current British Army lost in a single battle.

And the STZ tractor plant was metaphorically and physically at the very epicentre of the battle, known around the world even to those with no interest in history, military or otherwise. ◀

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*A Red Army T-34 M-1942 with sledge and 7.62mm M-1910 'Maxim' machine gun in the area of Stalingrad, December 1942.
D. VELIKZHANIN*