

## “The Armed Forces of Ukraine need 100 trawls a month”: Metinvest COO Oleksandr Myronenko discusses opportunities to increase production of mine trawls for tanks, feedback from the military and training centres for sappers

In the studio of Priamij TV channel, Metinvest’s chief operating officer, Oleksandr Myronenko, talked in detail about the Group’s production of mine trawls for tanks, the needs of the Ukrainian army, sapper training and the specifics of demining territory.



— **Metinvest is doing the critical work of demining our territory. We are one of the most heavily mined countries in the world and this problem must be addressed now. Let’s start with trawls, which you have started producing in-house. Why is it that nobody produced them before, that we had only Soviet-era trawls?**

— We have been communicating very closely with the military since the beginning of the war and are constantly trying to respond promptly to their needs. Everyone knew the extent of mining that the enemy had done on our territory when the counter-offensive preparations began. There are many kilometres of fields mined mainly with TM-62 anti-tank mines. We need certain equipment on our vehicles to traverse them. One model that was commonly used in the Soviet Union is an analogue of the KMT-7 mine trawl, which is most suitable for Soviet-era T-64 and T-72 tanks that the Ukrainian army operates. Unfortunately, this trawl is no longer manufactured in the country and has not been for some time. There were several dozen of these trawls left over.

When the military started the offensive operation, it was very difficult to traverse these minefields and they had to move very slowly to save their equipment. Since the Russians also use similar rollers, the military asked us to look at the trophy samples they had taken from downed Russian tanks. We went and had a look, made drawings and developed test samples of these trawls. After that, we started testing them together with the military to ensure that the design was reliable and could withstand the number of explosions required by the regulatory documents.

— **What territories can be demined with such mine trawls?**

— The trawls are now being used in many areas. We have already supplied eight of them to the army and they are already in operation. Two more trawls are waiting to be taken by the military, and five are in the production process. I think that by the end of the month we will also finish them and hand them over. Most importantly, these trawls must be able to withstand a certain number of explosions. The trawl can go over the same terrain as a tank because it pushes the trawl in front of it. If there is a risk of getting stuck or if the trawl breaks down, it can be discarded quickly and the tank can be evacuated. They do not have any specific restrictions.

— **Okay, with that understood, what kind of mines can they detonate?**

— They are used mainly for anti-tank mines. Of course, they also detonate anti-personnel mines. While those do not cause any damage to trawls, the TM-62 anti-tank mine is quite powerful. A single trawl can withstand up to eight explosions of a TM-62 anti-tank mine.

**— Before the trawls are put into operation, they must undergo specific tests, since they are responsible for the lives and well-being of our defenders. What did the trawl testing look like? And what was the most difficult part?**

— The hardest part was to design them correctly, match all the dimensions and manufacture the rollers. The rollers that come into direct contact with the mine are most difficult part to produce. They must have a certain hardness and withstand explosions. As for the tests, we made a test sample, took it to the National Guard of Ukraine's training ground and installed it on a tank. After that, the tankers went to a minefield they had set up and detonated mines with the trawl. We recorded the results together with the commission and the troops. Our first samples could withstand three or four explosions before the rollers were damaged and required repairs. After that, we improved the rollers. The latest samples that we are delivering to the army can withstand eight or more explosions, after which the trawl needs to be removed and the roller replaced. The frame itself is quite strong and does not suffer any major damage, it can only be damaged mechanically. For example, if the tank rams into something or collides with the ground, it can be bent. The roller is the part that is damaged the most because mines detonate under it.

**— How has the military reacted to these trawls? Can we talk about where they are being supplied now?**

— We have supplied them mainly around Zaporizhzhia and Donetsk. I will not mention any specific brigades or military units to which we have supplied them. As for the military, there are two opinions. The first is from the command, who were satisfied with the results after testing the latest samples. The second is from the tankers whose tanks have survived hitting eight, ten and even 16 mines with them equipped.

**— You started producing experimental samples in the summer of this year. Whose expertise did you require for this mass production?**

— We used our own expertise. We have capable design bureaus and a rather strong design team that has developed many things for our civilian production. It is constantly improving production and has already been working productively with the military in all the areas they need.

Currently, we are still in the process of verifying the quality of our trawls with the Ministry of Defence to ensure that they have no issues. The soldiers who use the trawls have provided only positive feedback because the quality is quite high.

In addition, we also service these trawls. If they get damaged, we take them, repair them, install new rollers and give the repaired equipment back to the military. Also, together with several brigades, we are considering the possibility of repairing old Soviet units because they also malfunction and get damaged. There is a shortage of anti-mine rollers. We have set up mass production because this is basically a consumable. We provide several additional sets of rollers along with the trawl, so that they can be repaired very quickly in field conditions and continue to operate.

**— How do they work in practice? How many times does a tank with this trawl have to pass through a given field before it becomes safe for further troop passage?**

— It depends on the mine type and the length of the minefield. It can be up to a kilometre long: a minefield is 2-3 metres wide and the mines are placed 4-5 metres apart. In addition, the Russians are also improving their minefields. They can make so-called sandwiches, when one mine is placed on top of another and creates a double explosion. There can be different configurations of mine placement to increase the explosive power and damage the tank more.

Eight detonations are required if the mines are placed 4 metres apart, which is about 40-50 metres. The mine trawl is located directly opposite the track; it protects the tank and the track from damage. The tank moves through the minefield and if there is any critical damage, it can reverse, then another tank can come in and continue the route. If there is no damage, the tank continues to move. If, for example, a trawl is critically damaged, there are quick dumpers that are very important on the battlefield: the trawl is quickly discarded from the tank so the tank can evacuate.

The demining process is slow and complicated. It is crucial to be able to quickly disconnect the trawl from the tank. The tankers we talk with say that when a tank with a mine trawl appears on a minefield, everything available is shot at it. The aim is to disable it, so it cannot demine, thereby preventing the infantry from approaching enemy positions.

**— Tell us about the production capacity of these trawls. How many can you currently produce?**

— At the moment, without production expansion, we produce five trawls a month and donate them to the army. There are opportunities to increase capacity, but we have a major issue: people. We do not have enough specialists who can help us increase production to, for example, 10, 15 or 20 mine trawls. Remember, we must still maintain our core production facility and we also do some things for the military on a volunteer basis. We are currently working together with the Ministry of Defence to create favourable conditions so we can recruit more personnel and increase production. The military says it needs more than 100 trawls per month. This is the need that must be met.

**— In addition to producing trawls, you have also opened a Mine Action Centre in the Chernihiv region to train sappers. Could you please tell us what kind of centre it is? What kind of training is provided and how long does it last?**

— We finance several training centres in the Dnipro and Chernihiv regions. These centres train professional sappers. The training can last from three to six months for specialists who are trained to carry out demining, and then they go to combat units and carry out demining. The centre will operate as long as it is required. These are stationary facilities, like a school or university, and people constantly study there. To us, this is very important: we have invested UAH9.5 million in the Chernihiv region centre alone. We have also provided significant funding for two more training centres in the Dnipro region to train specialists who will also carry out demining and help our troops to advance.

**— Oleksandr, what does Ukraine need in general to speed up the demining process as much as possible? Is there anything missing? What processes need to be accelerated? Finally, how many trawls are required for this?**

— One issue is demining the liberated territories, which can be done in a more stationary way. There are other means of demining for this. It can be carried out by people with metal detectors and various other equipment. There are also fixed trawls that can be attached to a tractor. We have already seen many Ukrainian solutions that use a driver-less tractor to demine a field.

Second, there is a military issue because many types of equipment are now being supplied to the Ukrainian army. The problem is that Soviet trawls only fit Soviet T-64 and T-72 tanks. In addition, the T-72 tanks that we get from Europe do not have fixed mounts for these mine trawls. We are currently working with several institutes to develop a technology to install them by welding the areas where we would mount the trawls. For example, NATO has separate demining equipment where the rollers are not attached to the tank. There is also a lot of European equipment coming in that have separate mine trawls of different designs. When we communicate with the military, we simply ask them to give us drawings. We can make any sample for a particular tank, but we need time and people. This is all we need to increase the production of mine trawls.

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