

# Army Guide monthly



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## Defence Industry

### Problems of Russian land military vehicles with diesel engines



Chelyabinsk Tractor Plant - URALTRAK (part of the NPK Uralvagonzavod) is delaying the delivery of V-46 and V-84 diesel engines to customers fulfilling the State Defense Order. This applies to both the enterprises that are part of the structure of Uralvagonzavod and other manufacturers of military vehicles. Mil.Press Voennoye correspondent was informed about this by sources from two companies that use these engines as part of their own products, and a source from an enterprise engaged in diesel engine repair confirmed.

Delay in deliveries is associated with negative results of periodic diesel tests. Repeated tests, according to the sources, were also unsuccessful. As a result, acceptance of the engines was suspended.

"Engines are in short supply at the enterprises of Uralvagonzavod, Almaz-Antey, and the Kalashnikov Concern (the Concern includes the Mytishchi machine-building plant, which produces tracked vehicles for the integration of special equipment, which use V-46-2S1M or V-84DT multi-fuel heavy engines - ed.)", - said one of the sources of Mil.Press Voennoye. According to a source of Mil.Press Voennoye, heads of enterprises has troubles due to the current situation are preparing a meeting at the Ministry of Industry and Trade. Its participants will try to strategize and coordinate their actions to solve the problem.

The press service of "ChTZ-URALTRAK" could not promptly respond to the official request of the editorial board about the reasons for the delay and the timing of the resumption of supplies.

"ChTZ-URALTRAK" is currently has financial troubles. According to the 74.RU portal, 22 creditors demand the bankruptcy of the plant.

74.RU quotes the comments of the company's representatives: "The plant is implementing a new development program, which provides for an increase in the economic efficiency of the enterprise, labor productivity and cost reduction. The State Defense Order is being implemented. Research and Development work in the field of engine for use in armored vehicles successfully carried out, completed development of a new forced engine for use in armored vehicles. An engine is being developed for the newest KURGANETS medium tracked platform. ChTZ-URALTRAK was engaged in the development of a future 2V-12-3A engine (1500 hp) for the unified ARMATA platform (T-14 MBT, T-15 IFV and T-16 repair and recovery vehicle) and the 2V-06-3V (750 hp) for the KURGANETS-25

platform (B-11 IFV and B-10 ACV).

At the ARMY-2019 International Military-Technical Forum, within the framework of one of the round tables, an employee of the BT 3 Scientific Research Center of the Central Research Institute of the Ministry of Defense of the Russian Federation said that "an analysis of the characteristics and design of the ChTZ-URALTRAK engines shows that 2B-12-3A and 2B-06-3V are inferior to their foreign counterparts in terms of fuel efficiency, resource, oil consumption, specific heat transfer and other important indicators".

According to him, the 12TV373Ch CHAIKA engine could be used as the base engine for the future models of armored vehicles.



This engine is also created by ChTZ-URALTRAK within the framework of the order of the Ministry of Industry and Trade for "Development of basic models of a model range of high-speed V-shaped diesel engines for special purposes with a power from 750 to 1500 kW for future models of automotive vehicles and tracked vehicles of medium and heavy weight category, special wheeled vehicles and transport and technological means (code CHAIKA).

The problem is that the development of the engine should have been completed in the fourth quarter of 2017, which has not happened so far.

Among other things, ChTZ-URALTRAK produces V-92S2F engines (1130 hp) for the T-72B3M and T-90M Main Battle Tanks. The V-92S2 engine (1000 hp) produced by the Chelyabinsk Tractor Plant is used to equip the TERMINATOR Tank Support Combat Vehicle.



## Defence Industry

### ARMATA MBT - problems 2020



In the last days of December 2019, the Deputy Minister of Defense of the Russian Federation A. Krivoruchko, summing up the results of the implementation of the State Defense Order to the correspondent's question about how the work on the ARMATA is progressing, said optimistically: "I will not hide the fact that the work on fine-tuning the latest samples of armored vehicles and armaments were somewhat delayed, but in the outgoing year, preliminary and state tests of a

whole line of new equipment were successfully completed.

And then: "... preliminary tests of the T-14 tank and the T-15 infantry fighting vehicle have been completed on the basis of an unified interspecific heavy tracked platform with a rear and front engine compartment. In the next month or two, we expect to receive the first batch of 5 vehicles, which we will also connect to state tests for their early completion".

Recall that according to the contract concluded at the end of 2015 for an experimental batch of vehicles on the promising heavy tracked ARMATA platform, 132 ARMATA tanks were to be delivered to the RF Armed Forces in three years.

Then, in 2018 (at the Army-2018 forum), this contract was adjusted and prolonged, as a result, deliveries were to begin at the end of 2018, but it was no longer 132 ARMATA MBTs, but 132 units of equipment, on the ARMATA platform, including, in addition to T-14 MBT, also T-15 IFV and T-16 ARR. According to the statement of Yuri Borisov (at that time the Deputy Minister of Defense of the Russian Federation), this contract provided for the supply for experimental military operation of two battalion sets of T-14 and one battalion set of T-15 heavy IFV. Already in 2020, their experimental military operation was to be engaged in the 2nd Guards Taman Motorized Rifle Division.

However, after the visit of Defense Minister Sergei Shoigu to Uralvagonzavod (UVZ), which took place on August 12, 2018, it became known that there was a significant backlog from the release schedule and adjusting the number of vehicles under construction. So instead of 132 vehicles on the ARMATA platform, which UVZ was supposed to supply by the end of 2019, it was already about 16 vehicles of the "experimental military party": T-14, T-15 and T-16. At that time, it was indicated that state tests of vehicles on the ARMATA platform had not yet been completed and would continue until the end of 2019. Only after that a decision on serial purchases will be made.



As can be seen from the above words of the A. Krivoruchko, Deputy Minister of Defense of the Russian Federation, the completion of the state tests of the ARMATA by the end of 2019 did not take place, and his statement on the completion of preliminary tests of the T-14 MBT and the T-15 IFV is very unclear.

It is not entirely clear with what result the preliminary tests were completed - how successful they were, whether inconsistencies with the requirements of the technical specification were identified and when the

shortcomings that inevitably appear in the process of creating a new sample can be eliminated.



It also seems that UVZ cannot provide even adjusted production schedule for 2019, and instead of 16 vehicles of the "experimental military batch", the deputy minister expects only the first batch of 5 vehicles in the "next month or two" (i.e. in 2020).

Probably, the problems with the ARMATA are to some extent a reflection of the general problems of UVZ. In March 2017, taking office, A. Potapov, the new general director of Uralvagonzavod, said: "We have created, figuratively speaking, the foundation on which we will build a new house. Preparations for this have been completed, which is what our entire cooperation is set up to do. Labor collectives are ready for the release of advanced future combat vehicles".

However, in November 2018, the management of Uraltransmash, part of the Uralvagonzavod Corporation, was accused of embezzling funds allocated for the technical re-equipment of the enterprise. The controlling authorities and law enforcement agencies believe that the general director of Uralvagonzavod A. Potapov did not ensure the building of new workshops and the creation of industrial capacities necessary for the production of the ARMATA. At the same time, budget funding in the tens of billions of rubles allocated for the implementation of the project was assimilated with gross violations of the law.

It is also a matter of concern that, according to information leaked in open sources, the military has questions about a number of future tank systems. Including, for example, the reliability of the crew's combat situation surveillance system (information about the environment comes to the crew, for better protection, placed in an armored capsule, through electro-optical systems, which, according to the military, "can fail in battle"), there is a question of completing the development and launching into production of a new range of ammunition for the 125-mm 2A82 tank gun, primarily sub-caliber armour-piercing fin-stabilized discarding round and guided (with detonation on the flight path) missile. And recently doubts have been expressed about the correct choice of the diesel engines.

Recall that a four-stroke, X-shaped, 12-cylinder diesel turbo-piston engine A-85-3A/12H360/2B-12-3A, with a power of 1500 hp, was adopted as a power plant on a unified interspecific heavy tracked platform ARMATA, designed by Chelyabinsk GSKB "Transdiesel".

The engine was developed over two decades and was originally designed as a completely new power plant for new MBTs, like the current ARMATA. In 2011, the

engine passed a full cycle of state tests and is mass-produced at the Chelyabinsk Tractor Plant (ChTZ). Nevertheless, during the Army-2019 International Military-Technical Forum, military experts noted that their analysis of the characteristics and design of ChTZ engines shows that 2V-12-3A is inferior to foreign counterparts in terms of fuel efficiency, resource, oil consumption, specific heat transfer and other important indicators”.

Therefore, for the development of the ARMATA platform, the RF Ministry of Defense wants to get an engine that provides better performance than the 2V-12-3A, and considers the 12TV373CH diesel engine (Chaika) as the base one. However, there are problems with it. Despite the fact that the development of 12TV373CH was supposed to be completed in the fourth quarter of 2017, this has not happened yet.

According to the optimistic opinion of some experts, if the State tests are successfully carried out, serial deliveries of vehicles on the ARMATA platform may start no earlier than 2023-2025.

