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Robots

## Nerekhta multifunctional UGV on the State tests

The Ministry of Defense of Russia has published video of testing the latest Russian Nerekhta Combat Unmanned Ground Vehicle (CUGV) which interacts with the fighters of motorized rifle units.

"We were put in tough temporary conditions for the timely release of Nerekhta to the State tests as part of the Kungas complex," - says Dmitry Alberovich Fufaev, Deputy Chief Designer of Degtyarev Plant. "In an expeditious manner, it was necessary to refine the sample to the requirements of the complex in terms of communications and control systems. In the shortest possible time, the Degtyarev Plant managed to do this."

"3 months after the final approval of the technical specifications in February 2018, we entered preliminary tests with three prototypes. In addition to the robot itself, the Degtyarev Plant was presented with a shooting and grenade launcher weapon station for an average APC-based robot for the Airborne Forces and a KamAZ‑4350 vehicle chassis and transportation system. According to the results of tests conducted by the State Commission, an act will be drawn up with a recommendation to adopt the complex."

Defence Industry

## Counterfeit aero engines threaten international aviation security

The Yak-130 combat training aircraft was designed by Yakovlev Design Bureau along with Italy's Aermacchi, and production was launched in 2009 by the Irkut Corporation in Russia.

One of the strengths of the plane was a Ukrainian designed AI-222-25 engine created by Ivchenko-Progress SOE. The engine was subsequently produced by Russia's Salyut Scientific-Production Centre for Gas Turbine Construction, in accordance with a license agreement between the Ukrainian and Russian enterprises.

In 2015, when the license agreement expired, Irkut Corporation, the manufacturer of the Yak-130 should have changed the aircraft's main propulsion system, but instead the company simply breached the copyright of the Ukrainian design for the engine, and started its own production of spare parts to replace the original Ukrainian components.

At the same time, Russian media also began to spin reports claiming the successful and full replacement of Ukrainian components for the Yak-130 engines by the Moscow-based Salyut factory.

But there were operational problems with regard to the reliability of the newly copied engines. On September 16, 2017, a Yak-130 crashed near the airfield in Borisoglebsk (Voronezh Region) during a training flight. The crew ejected. Media reports suggested that a possible cause of the crash was an abrupt failure of the engine systems.

On April 12, 2018, also in Borisoglebsk, a second Yak-130 crashed. During a scheduled training flight, the plane experienced a technical malfunction of one of the units. Both pilots ejected.

Not only is the Russian manufacturer in violation of the license agreement for the use of Ukrainian engines, they are also producing Yak-130s with engines that have not been upgraded and which lack the necessary quality of technical maintenance up to the standards required by the original design bureau. This poses a potential safety threat not only to Russia's own air force, but also to aviation security worldwide.

Notwithstanding the reported incidents and question marks over the reliability of the copied engines, Russia has been promoting the Yak-130 aircraft to foreign markets. In 2018 alone, the aircraft was showcased for example at Indo Defense 2018 (Indonesia), FIDAE 2018 (Chile), and EDEX-2018 (Egypt), amongst other international arms exhibitions.

However, top officials in Russia, including former Deputy Prime Minister Dmitry Rogozin, have expressed dissatisfaction with the Russian aircraft engine producers, saying that they lag behind their competitors.

Competitor models to the Yak-130 include the Chinese manufactured Honhdu L-15 and the Italian Aermacchi M346. According to aviation experts the latter surpasses the Yak-130 in terms of its lightness and aerodynamic profile. The U.S. Air Force is reported to be now reviewing the possibility of purchasing the Aermacchi M346.

Exhibitions

## BAE Systems awarded Armored Multi-Purpose Vehicle contract modifications by U.S. Army for Low-Rate Initial Production

The U.S. Army has awarded BAE Systems two contract modifications worth up to $575 million for the low-rate initial production of the Armored Multi-Purpose Vehicle (AMPV).

These awards mark the beginning of low-rate production for the highly mobile, survivable, multipurpose vehicle designed to meet the mission of the U.S. Army's Armored Brigade Combat Teams (ABCT).

"Moving into this phase of the AMPV program is exciting because it brings soldiers one step closer to deploying this critical capability for completing their missions and coming home safely," said Bill Sheehy, AMPV program director for BAE Systems' combat vehicles business. "We have been preparing for this moment and are ready to take this program to the next stage."

Previously awarded funding to support production planning, combined with the $128 million January award allowed BAE Systems to start production. A second award in February for $447 million brings the total LRIP funding so far to $873 million.

The AMPV program provides the Army with a more survivable and mobile fleet of vehicles that addresses a critical need to replace the Vietnam War-era M113s. Production will include five variants of the AMPV: command and control, general purpose, medical evacuation, medical treatment, and mortar carrier.

The AMPV is a mature, cost-effective solution that leverages the most modern and proven combat vehicle designs. It meets the Army's force protection and all-terrain mobility requirements, enabling the AMPV to maneuver with the rest of the ABCT. Commonality within the ABCT also reduces developmental risk and streamlines maintenance, providing significant cost savings to the Army.

These contracts come following the Engineering, Manufacturing and Development phase and a Milestone C decision. Under the earlier EMD award, the company produced and delivered prototype vehicles to the Army for test and evaluation purposes. The initial award in 2014 also provided options to begin the LRIP phase prior to the completion of the EMD phase, at which time the company would produce up to approximately 460 additional vehicles for a cumulative contract value of up to $1.2 billion.

BAE Systems is a premier supplier of combat vehicles to the U.S. military and allied nations. We have an extensive manufacturing network across the United States and continue to invest in it. Work on the program will take place at BAE Systems' facilities in Aiken, South Carolina; Minneapolis, Minnesota; San Jose, California; Sterling Heights, Michigan; and York, Pennsylvania.

Exhibitions

## Oshkosh Defense Exhibits JLTV Firepower at IDEX 2019

Oshkosh Defense, LLC, an Oshkosh Corporation (NYSE: OSK) company, will showcase the Joint Light Tactical Vehicle's (JLTV) combat effectiveness against battlefield threats at IDEX 2019 in Abu Dhabi from February 17-21, 2019. Designed using lessons learned from the Mine-Resistant Ambush Protected (MRAP) All-Terrain Vehicle (M-ATV), the JLTV platform provides MRAP-level protection to mitigate the most prevalent threats while delivering best-in-class off-road mobility in a highly transportable package.

"Achieving a tactical advantage on the modern battlefield requires speed and agility to get to the fight quickly, to outmaneuver threats and to strike fast and hard," said Mike Ivy, Senior Vice President, International Programs and Global Product Support. "With its payload capacity and system integration-minded design, the JLTV is built to accept a multitude of remotely-operated weapon configurations including cannons, missiles, and advanced non-kinetic weapon systems for use against both land and air threats."

The JLTV can be configured with many weapons systems, depending on the mission or threat environment. An optional turret supports standard weapons mounts for 7.62mm manned or remotely-operated machine guns or for a variety of cannon and tube-launched missile systems. Side- or rear-mounted weapons from a wide variety of manufacturers are also seamlessly supported.

The JLTV General Purpose configuration on display is equipped with an EOS R-400S-MK2 Dual remote weapon station (RWS) integrated with Northrop Grumman's M230LF 30mm lightweight chain gun to demonstrate the vehicle's ability to support increased lethality including a medium caliber weapon system.

“The JLTV is a premier weapons platform,” Ivy said. “We at Oshkosh can configure the JLTV in almost any way required for combat operations.”

The JLTV is available in 2-door and 4-door variants in the following configurations:

- JLTV Utility
- JLTV General Purpose
- JLTV Close Combat Weapons Carrier
- JLTV Heavy Guns Carrier