



The Resurrection of Russian Armor: Surprises from Siberia

by Jim Warford

In September 1997, the Russians held the second annual VTTV Omsk '97 International Exhibition of Armaments, Military Equipment, and Conversion products. Delegations from 50 countries visited the show, and the products on display were supplied by more than 160 producers from within the former Soviet Union. While the list of the military vehicles and equipment on display was impressive and included the T-90S MBT, most of the hardware on show was well-known to those present. There were, as always, some exceptions. Of all the surprises, including the DROZD-equipped T-80U and the ARENA-equipped T-80UM-1 Snow Leopard MBTs, perhaps the most surprising were the new T-55-based BTR-T heavy APC and the Black Eagle MBT.

Information on the BTR-T heavy APC started to appear in the defense press in 1997. Based on a turretless, heavily

modified T-55 MBT hull, the BTR-T is an impressive vehicle. Like its very similar Israeli cousin, the Achzarit heavy assault carrier, the BTR-T was "born of battle." In the 1982 war in Lebanon, inadequately protected Israeli mechanized infantry suffered many combat casualties. The results of these losses were both dissatisfaction with the M113 APC and the development of a new requirement for a more heavily armored "assault carrier." The Israelis were looking for a vehicle that could successfully approach a defended objective, while providing a level of protection for its infantry as close as possible to that of an MBT. The Achzarit, also based on a heavily modified T-54 or T-55 hull, went into production in 1988 and as many as 300-400 are in Israeli service.¹ The Achzarit weighs 44 tons (compared to 36 tons for the standard T-55), is powered by either a 650 hp diesel engine (the Achzarit 1) or a 850 hp diesel engine (the Achzarit 2), and can carry

seven infantrymen plus the vehicle's three-man crew. Of all the vehicle's characteristics, the armor protection provided was the highest priority. Reportedly, 14 tons of the vehicle's total weight is devoted to armor protection. While the exact type and configuration of the armor carried by the Achzarit is still classified, published sources say that it is protected by advanced composite armor.

The Russian BTR-T was also the result of a significant need discovered in combat. On December 14, 1994 the Russians deployed in Chechnya a force that would quickly grow to 2,221 armored vehicles. Before that bitter action was over, the Russians would lose 225-250 armored vehicles, according to the former Russian Minister of Defense, General Grachev. The infantry carriers that were deployed by the Russians included the BMP-2, BMD-1, and BTR-70. Of these three vehicles, the BMP-2 is the most heavily



armored, although it still proved to be very vulnerable to Chechen antiarmor hunter-killer teams equipped with the RPG-7 or RPG-18. In fact, published vulnerability studies indicate that the BMP-2 was basically a rolling “killing zone.” With the exception of the BMP-2’s turret front and engine compartment, Chechen RPG gunners could aim and hit anywhere on the vehicle and were virtually assured a kill.²

The solution to this serious problem was unveiled to the public for the first time at the Omsk Exhibition. The BTR-T at the show was armed with the 2A42 30mm cannon in an elevated mounting above a very low-profile one-man turret.

Additionally, the Konkurs ATGM (NATO AT-5/AT-5B Spandrel) was pintle-mounted on the right side of the turret. This armament configuration, however, is just the beginning of the BTR-T’s firepower options. The Russians have designed the BTR-T to carry a wide variety of armament including both Russian and “NATO armament complexes.”

Russian weapons options include the 2A42 combined with the AGS-17 automatic grenade launcher, the 2A38 twin-barrel 30mm cannons, and the NSV 12.7mm machine gun combined with an elevated twin Konkurs ATGM launcher.³ The BTR-T weighs 38.5 tons and is capable of a maximum speed of 50 kph. The vehicle carries a total of five infan-

trymen plus the vehicle commander and driver. Perhaps the most significant drawback in the BTR-T’s design is the fact that the infantrymen can only exit the vehicle through hatches in the roof. The removal of the T-55’s original turret has allowed the crew and carried-infantry compartment to be positioned at the front of the hull, with the engine compartment at the rear.

The losses suffered by “mounted” Russian mechanized infantry units in Chechnya left a huge impression on the Russian military, and dictated the response that any new vehicle would have vastly improved armor protection as its design priority. For the Russians, that meant fitting their new heavy APC with the same Kontakt-5 explosive reactive armor (ERA) that protects their MBTs. Currently fitted to the T-72BM, T-80U, T-80UM, T-80UM Model 1993, T-80UM Model 1995, T-80UK, T-80UM-1 Snow Leopard, T-90S, Black Eagle, and the Ukrainian T-80UD and T-84 MBTs, Kontakt-5 has increased the protection provided to new levels.

Unlike earlier generations of ERA, Kontakt-5 offers effective protection against both chemical energy and kinetic energy weapons. “If fitted to a T-55 MBT (the basis of the BTR-T), it will increase the armor protection level against kinetic energy ammunition from the equivalent of 200mm RHA to the equivalent of 480mm of RHA.”⁴

According to *Jane’s International Defense Review* (7/1997), during live-fire testing in the U.S., Russian T-72s fitted with Kontakt-5 were “immune” to 120mm M829 APFSDS ammunition. Arguably the best protected APC in existence, the new BTR-T has sealed the fate of the BMP series where the protection of mounted infantry is a priority. When compared to the more complex BMP-3 IFV, the BTR-T not only represents a whole new level of survivability, but is also available for sale at a much lower cost. The burned and shattered hulks of BMPs, once characteristic of recent conflict, may be a thing of the past. The BTR-T is the Russian application of hard lessons learned in battle.

During the Cold War, very few Soviet threats received more attention and concern than the Future Soviet Tank or FST. The FST designation actually grew to include a variety of Soviet developments. FST-1, for example, was not a single tank, but actually represented a level of technology embodied by two Soviet tanks; the T-72B and T-80U. Both of these MBTs were put into production in 1985, and incorporated new levels of technology. The T-72B and T-80U, for example, were capable of firing the newly developed Svir (T-72B) and Refleks (T-80U) (NATO AT-11 Sniper) main-gun-launched ATGMs. The FST-2 designation referred to the next-generation Soviet tank that was thought to signal the return of innovation and

high-risk technology to Soviet tank design. Reportedly, the FST-2 was actually known as the "Object 477 Molot" (Hammer) and was under development at the Kharkov tank plant in Ukraine.⁵ The mystery surrounding this tank cleared for a short time in 1988 when the open press suddenly reported its existence to the public. Although originally misidentified as the FST-1, articles and drawings including those appearing in *Newsweek*, *Army Times*, and the *Daily Telegraph*, described a radically new tank with innovative characteristics:

- A low-profile unmanned turret
- 2- or 3-man crew, all located in the hull
- 135mm main gun firing at a muzzle velocity of over 1900 meters per second
- Sophisticated electronics, including a counter-optics device called LASAR, capable of blinding NATO's binoculars and optical systems
- Layered-ceramic composite armor capable of defeating NATO's best antitank weapons

The significance of the threat imposed by the FST-2 during that period of the Cold War cannot be overstated. According to retired General Donn A. Starry, "the Soviets have achieved a technical development at the tactical level of war which has strategic implications. We haven't seen anything like that in Europe since the advent of tactical nuclear weapons."⁶

The threat imposed by the FST-2 was certainly the primary consideration in the decision to spend a reported 1 billion dollars to develop and add depleted uranium armor to U.S. M1A1 MBTs. The FST-3 is even more mysterious than the FST-2, and very little about it has appeared in the press. One published report stated that the U.S. Army's once planned replacement for the M1, the "Block 3 Tank," was specifically intended to counter the advanced Soviet FST-3. Other sources have reported that the FST-3 design incorporated a revolutionary new electro-magnetic type armor, that could signal the end of conventional antitank weapons. The intent of electro-

magnetic armor is to destroy an attacking projectile with an extremely powerful electric charge. When the projectile hits the tank armor, it completes an electronic circuit and basically destroys itself.

According to *Soviet Military Power 1989*, Soviet tank technology was not only equivalent to that of the U.S. at the

ber, a "radically new MBT" was reportedly being worked on, with the first prototype due out as early as 1997.⁷ According to published reports, this new MBT is armed with a new 135mm-140mm main gun, incorporates greatly improved armor protection, and may be designated the T-95. Then, in September 1997, the Chiorni Oriol MBT (Black



time, the relative technology level was in fact changing significantly in favor of the Soviet Union. As suddenly as they appeared, the FST-2 and FST-3 both disappeared from public view. The mystery and secrecy surrounding these Soviet tank developments returned and covered them completely.

In 1995, word began to surface about a new Russian MBT. Information about this new tank began to appear on a fairly regular basis: a "revolutionary Russian MBT prototype" was announced in January; work on a "fundamentally new tank" was said to be under-way in September and scheduled to be completed within a couple of years; and in Novem-

The heavy BTR-T armored personnel carrier, reminiscent of the Israeli Achzarit, is a converted T-55 tank hull that offers much better protection than a BMP-class vehicle. It is armed with the 2A42 30mm cannon in an elevated mounting above a very low-profile one-man turret. Additionally, the Konkurs ATGM (NATO AT-5/AT-5B Spandrel) was pintle-mounted on the right side of the turret.

Eagle) appeared right on schedule. Its appearance at the OMSK exhibition, however, was fleeting. The tank was shown with its new, much larger turret completely covered by a large camouflage net, and was driven in front of spectators at a distance to prevent close examination. Both Russian sources and Western analysts have since reported that the Black Eagle tank at Omsk was, in fact, a test-bed or technology demonstrator of a 21st century Russian tank.

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While available information concerning the Black Eagle is limited, most of it from press reports in *Itar-Tass*, *Tekhnika i Vooruzhenie*, and *Izvestiya*, some of the tank's impressive characteristics can be given a closer look. Like the BTR-T, the Black Eagle is the result of hard-lessons learned in battle. The Black Eagle shown at Omsk was armed with a very large main gun of unconfirmed size. Russian press reports have stated that the tank may be armed with a 152mm main gun, while other sources suggest the gun is actually somewhere between 135mm and 140mm. Like the turret, the Black Eagle's main gun was covered, but the -evacuator and extreme barrel length couldn't be completely hidden. The main gun also appears to be mounted higher in the turret, with the mounting itself protruding out of the turret frontal armor more than normal. The new turret is shaped much more like modern Western MBTs, and has a distinctly box-shaped bustle. According to the Russians, the turret is welded and will include a bustle-mounted autoloader. This represents a dramatic change in Russian tank design, and is probably a direct result of the call for improved and more survivable designs after the tank losses suffered in Chechnya. The main gun ammo, now stored in the turret rear, is separated from the tank's crew by an armored bulkhead. Russian reports state that this new ammo arrangement allows longer, more powerful APFSDS rounds to be used. Basically, nothing is known about the tank's fire control system, beyond the reports that it is equipped with an "on-board information system" capable of monitoring vehicle systems, and exchanging data with other tanks and its headquarters.

The Black Eagle is powered by a new 1500 hp gas-turbine engine and weighs somewhere around 50 tons. The hull shown at Omsk is based on that of the well-known T-80U, also produced at the Omsk Plant. Since the new turret was covered, very little is known about the tank's armor protection beyond the combined armor and Kontakt-5 protecting the hull. The turret front is apparently fitted with "active protection elements" or ERA and is more sloped than normal, reminiscent of the British Chieftain MBT. There also appears to be a significant gap between the hull and the lower turret-frontal arrays of ERA. Finally, the exact type and capabilities of the armor protecting the Black Eagle is obviously still a mystery. Based on what is known about So-

viet/Russian armor development, ranging from the early days of the T-64 MBT to the Russian version of Chobham armor protecting the T-90, and the multilayer applique armor added to the turret and glacis of the T-55AM2B, the Black Eagle could certainly be fitted with armor protection rivaling that of its more modern Western counterparts.

The intended role of the Black Eagle is still not completely clear. Some sources say that it is intended for the export market, leaving the Russian Army in the capable hands of the T-90 and T-80U variants like the T-80UM-1. While others state that its more likely that the T-80UM-1 will be promoted for export, leaving the Black Eagle to meet future Russian Army requirements. Russian sources say this new tank may be fielded as early as mid-1999, while others report that the first batch of 50 vehicles will be produced within the next two years. Whatever the case, the Black Eagle (or a new production MBT developed from it) will be deployed in the near future. While the relationship between the Black Eagle and the FST-2 and/or FST-3 also remains to be seen, one thing is certain; the Soviets/Russians have been working on an innovative new MBT since at least the mid-to-late 1980s. The new Russian tank, which may or may not be known as the T-95, will most likely be either the production model of the Black Eagle, or the present-day equivalent of the FST-2 and/or FST-3. Interestingly enough, according to *Armed Forces Journal International* (5/1998), the Russians have recently patented a form of electromagnetic armor, so a tank with the capabilities of the FST-2 and FST-3 may already be here.

Finally, all indications as of now support the conviction that the current state of affairs in Russia will continue to complicate and duplicate tank development and production. If it's to remain a viable contributor to the future of Russian armor, the other operating tank producer, the Uralvagon tank plant at Nizhni Tagil, will have to respond to Omsk's Black Eagle with their own new "post-Chechnya" tank design. Since Nizhni Tagil is the plant that produces the T-90 and T-90S, it's logical to expect a redesigned Black Eagle-like MBT based on the T-90 to appear in the near future. So, the most likely scenario is that not one, but two new Russian MBTs will soon materialize. The BTR-T and the Black Eagle are criti-

cal to the Russian military's efforts to regain its position as a leader in IFV and tank development and production. No longer able to ignore the catastrophic loss of so many of their armored vehicles in various conflicts around the world, the Russians have indeed shown that they have applied what they've learned. While the BTR-T confirms what the Russians are capable of doing in a very short period of time, the Black Eagle is a clear demonstration that the Russians are still capable of a few surprises.

Notes

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³ Ageyev, Dmitry, "The Tank Becomes an Armored Personnel Carrier: (BTR-T Heavy Armored Personnel Carrier)," *Military Parade*, January-February 1998.

⁴ Warford, James M., "The Russian T-90/T-90S Tank: An Old Dog with Some Dangerous New Tricks," *ARMOR*, March-April 1995.

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⁶ Mott, Gordon, and Barry, John, "A Tank in *Newsweek*, April 11, 1988.

⁷ Foss, Christopher F., "T-90 in production, new tank set for '97 debut," *Jane's Defence Weekly*, November 11, 1995.

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