



Tanks on Parade

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¹ The Kremlin has spent the year since annexing Crimea and unleashing war in the Donbass region in a state of militaristic fervour. The agitation and propaganda media have banged on endlessly about the superiority of Russian arms over those of the West.

After Dmitry Kiselev, head of the Russia Today state information agency, helpfully opened everyone's eyes to the fact that Russia is the only country "capable of reducing the United States to radioactive ash," the country's media began earnestly discussing exactly how many Topol-M missiles would be needed to wipe out the United States, Britain, Germany, France and Spain, and how many hours it would take Russian tanks to reach Warsaw and Berlin.

It might have seemed they had gone about as far as they could go, but there was more to come, not only of hot air on the subject of Russian technological superiority but also of militaristic patriotism, as the Victory Day parade on 9 May 2015 and its associated PR campaign were to show.

The unprecedentedly grandiose parade and accompanying hyperbolic commentaries provide not only an excuse but also an opportunity to realistically assess how things stand with the super-modern munitions of Russia's army.

Aircraft: new old designs

The official Russian media were recently swept by a wave of optimism at Sergey Shoygu's decision to resume production of the Tu-160 bomber.

"Another reason for the NATO brass to sweat is an announcement by Russian Defense Minister Sergey Shoygu that production is to resume of the Tu-160 supersonic strategic bomber, capable of carrying nuclear weapons a distance of 14,000 kilometers without refueling and possessing a host of other useful features. The West sees this aircraft as something unique and without equal in the world."

The press uncritically reported Shoygu's claims that the White Swan/ Blackjack bomber is "a unique aircraft decades ahead of its time" and that "nobody has ever come up with a better supersonic aircraft."

Similar claims are made for another strategic bomber, the Tu-95. In reality, the Tu-160 is technically on the level of the late 1960s, which is when the design was developed, while the Tu-95 belongs even further back in the past, having made its maiden flight in 1952.

Not one aircraft in the air show above Red Square was developed in the post-Soviet period. The Su-24, presented as "the latest" front-line bomber, was first designed in 1965. The Russian air force's main fighter is currently the Su-27, first developed in 1969, while its main Russian "rival", the MiG-29, was developed in 1972. Both aircraft have since been modified several times, but the potential for upgrading is not limitless, and no matter how

¹This paper was written for the Russian Service of Radio Free Europe / Radio Liberty. It can be accessed at, Voronov, V. 'Tanki dlya Parada', svoboda.org, 28 June 2015, available at: <http://www.svoboda.org/content/article/27095289.html>

much you modify an old design, you will not produce anything radically new.

Back in 2009, the Russian Defense Ministry admitted that some 200 of its almost 300 MiG-29 fighters could not take to the air because of corrosion in the tailplane. A Russian air force commission subsequently established that such corrosion had affected no fewer than 80% of MiG-29s. Given that the stated service life of the airframe is approximately 20 years (2,500 flying hours), a large number, possibly a majority, of these fighters had been flying for over 25 years. The MiG-31 interceptor went into production in 1979, was discontinued in 1993 and, as reported at a hearing in the State Duma in April 2013, no more than 120 of them were still in service. The Russian air force commander, Viktor Bondarev, said the interceptor and its components were obsolete and in poor condition. The Su-30 heavy fighter, an updated version of the combat training Su-27, has been flying since 1989. There are very large numbers of them in India, where the Indians complain of poor quality. Six have crashed. The main complaint is unreliability of the engines, which makes it necessary to retire the Su-30 before the guaranteed service life has even expired. There are many grievances about its electronics, which malfunction frequently, and the ejection seat has a worrying tendency to trigger automatically during taxiing.

The flagship of the Russian air force is the Su-34 fighter-bomber, itself only a modification of the venerable old Su-27. Work on the design was begun in the early to mid-1980s. It is officially claimed to be in production and being delivered in quantity to the armed forces, but it would be premature to claim it is in full production. A few years ago a commission of the High Command of the Air Force sent a report to the minister of defense complaining that all the Su-34s delivered had substantial defects that would detract from fully effective operational use. Moreover, each aircraft was said to have particular problems of its own. The Su-34, the report went on, “is criticized by the aircrews, who are obliged to battle with defects on every flight.” Worst affected were the radar and sighting navigation systems.

Several months before the Red Square parade, it was being said that the highlight of the flypast would be the “unrivalled” PAK FA T-50 fifth-generation fighter, an “advanced airborne frontline aviation system”. In the end, however, the T-50 was omitted from the flypast programme, which indicates that the military are doubtful about its reliability. All key information about the aircraft’s specification is classified. Air Force Commander Viktor Bondarenko predicted back in July 2012 that the air force would take delivery of the first 14 production models in 2013, and that large-scale scheduled deliveries would begin in 2015. The plane is, however, still in the test phase, 5 flying prototypes are in existence, and not one has yet been released for field trials. Ministry of Defense representatives have announced that only 12 T-50 fighters will now be manufactured instead of the planned 52. Experts believe that, apart from purely financial concerns, this is due to military dissatisfaction with the performance of the aircraft’s “interim” engines, so if the T-50 ever does enter service, it will be no earlier than 2020.

Do not believe, my friends, in caravans of rockets!

Now, what about intercontinental ballistic missiles? The Topol-M (“Poplar”), if we are to believe the propaganda on Russian television and the speeches of defense industry leaders and the Ministry of Defense, is an ultra-modern weapon. It is firmly established in the popular consciousness as a super-weapon, as witness the T-shirt inscriptions: “Sanctions?

Don't make our Topols laugh!"

This ICBM is, however, only a somewhat updated version of the Topol RS-12M, developed from 1977. The supposed invulnerability of the road-mobile Topol is also stale news, since nowadays its movements can be tracked by spy satellites.

Another ICBM familiar to every Russian, at least from hearsay, is the P-30 Bulava solid-fuel, sea-based ballistic missile for arming nuclear submarines of the Borei ("Boreas") 955 Project. No one has forgotten its test record: the Bulava would either not launch at all, or self-destruct, or veer off course, or various stages of the engine would fail; the warheads would either fail to separate or to reach their target. Despite all that, the weapon was declared combat-ready although, as Director of the Centre for National Security Colonel Anatoly Tsyganok noted in an interview, for it to be adopted a 95% launch success rate was required.

The planned standardization of the Bulava and Topol missiles did not work out: the submarine-based missile is broader than its ground-based counterpart, just over half its length, and more than 10 tons lighter. The Bulava carries a lighter payload than the Topol-M and has a range of 3,000 km less (when it does manage to fly). Russian designers have been trying in vain for over 50 years to design a reliable and efficient, sea-based, solid-fuel ballistic missile. To make matters worse, the extremely expensive Borei nuclear-powered submarine programme was specifically designed around the Bulava. The original plan was to have 8 Bulava-armed submarines in the water by 2020, but this has now been scaled back to 5. Currently 3 have been launched and put into service. Two more are being built and the Project 941 "Dmitry Donskoy" Akula class submarine has been adapted to take the Bulava, but a Centre for Analysis of Strategies and Technologies report notes that none of them are yet in a state of operational readiness.

Another much-hyped project is the Barguzin ballistic missile train. According to Sergey Shoygu's blog on the Vkontakte social network site, "The Barguzin rail missile system has a number of unique strengths. First, unsurpassed mobility: the missile train can travel up to 1,000 kilometers in a day. Second, stealth: it is difficult to calculate from a satellite how many trucks are concealed beneath a carriage, and easy to hide the train among the jumble of carriages at any major station. In addition, when not on military alert, the train can be concealed in tunnels in rock out of the reach not only of satellite surveillance but even of ballistic missiles."

The intention has been announced of deploying up to 5 missile regiments equipped with the Barguzin by 2020. Yury Solomonov, the designer-in-chief, speaking recently to school-leavers from several Moscow schools, warned however that "this system is currently under development, but will not be ready for a long time to come." He declined even to indicate when the Barguzin might be delivered to the strategic missile forces.

Experts at the Centre for Analysis of Strategies and Technologies in Moscow consider that the strategic missile forces are being equipped with an unjustifiably large variety of missile complexes" (there are already 10 in service) and that "producing and deploying these missile systems will swallow up huge resources and further increase the diversity of arms

systems. Furthermore, the rationale behind spending so much money on the rail-borne Barguzin mobile missile system is highly questionable.”

Academician Alexey Arbatov believes the real reason for the almost hysterical nuclear rhetoric is anxiety on the part of the Russian leadership about NATO’s superiority in conventional forces, especially in terms of new strike and data management systems. He adduces the opinion of Colonel Mikhail Khodarenko, military expert and editor of the *Military-Industrial Courier*, who has modelled a hypothetical situation in which the Ukrainian army is bolstered with “volunteers and soldiers on furlough” from the United States and Europe, bringing with them their standard weapons and hardware. The colonel’s opinion is that those opposing such an army would hold out for only a few hours. In particular, Khodarenko writes:

“It is obvious who would win in an armed conflict using only conventional weapons. It would definitely be the West. Unfortunately, the state of the modern Russian army is qualitatively little different from that of its Soviet predecessor in 1991. It does not have much in terms of up-to-date arms that meet the high standards of the twenty-first century.”

From this he concludes, “Under no circumstances should the armed forces of the Russian Federation be drawn into the conflict in the Southeast. Our country, army and navy ... are not yet ready for a full-scale confrontation using only conventional weapons.”

So let us now turn to conventional weapons.

Real tanks are not afraid of mud

The PR campaign about the latest military hardware reached its apogee at the Victory Day parade on 9 May 2015. The hardware driven over Red Square that day was hailed as miracle munitions capable of turning the tide in any battle. The epithets predominating in the official commentary were “legendary”, “unique”, “latest”, “ultra-modern”, “unparalleled”, “unrivalled” and “world-beating”.

The highlight was the T-14 Armata tank, shown in public for the first time, and there was no stinting on praise for it. Deputy Prime Minister Dmitry Rogozin even declared that the West was 20 years behind Russia in tank design. The news agencies chorused ecstatically: “an almost invulnerable high-tech system” capable of “simultaneously tracking dozens of targets on the ground and in the air, equipped with a unique composite armor and electronic systems without parallel anywhere,” able to “identify and neutralize the lion’s share of threats,” and, needless to say, to “fire at a distance beyond the reach of the best NATO equipment.” Even the T-14’s main rival, the German Leopard 2 tank, “has no shells capable of piercing the Armata’s armor.” Moreover, “the Armata’s gun is more accurate than the L-55 120-mm gun on the updated Leopard-2A7” and “the durability of the Russian barrel is much superior to those of its rivals”.

“To say that the technical specifications of the new tank are unmatched,” the main government newspaper gushed, “is an understatement. It is superior to the main battle tanks of other countries.” Not only is its turret unmanned, “its control system is entirely digital” and the crew are housed in a special armored capsule, which is “a huge step forward for the Russian tank industry.” Moreover the gun on the American Abrams tank

“has had no significant upgrading for more than 25 years and is only a licensed copy of the German Rheinmetall Rh-120 gun, which has really quite a modest specification.”

These derogatory remarks are about a gun (also known as the L-55) which is almost universally recognized by military experts as today’s best tank armament. The Armata’s gun has been seen in action, if at all, only by a select group of individuals at secret sites. The government newspaper went on to compare the Armata with the T-50 fighter: “Quite apart from the tornado-like power of both, they will be equipped with unique radar that can simultaneously track up to 40 ground and 25 airborne targets as well as giving visual surveillance of territory within a radius of 100 kilometers.” Admittedly, for the Armata to do any such thing it would first have to take to the air, and even that would hardly help: the detection range of the onboard Arbalet (“Crossbow”) radar to be installed in Ka-52 and Mi-28 attack helicopters is only 30-57 kilometers, and it can track no more than 10 targets simultaneously.

During the rehearsals for the parade the miracle tank broke down no fewer than 3 times, once on Red Square during the final rehearsal. Even with specialist equipment, the star of the show could not be towed away until the rehearsal was over.

According to the military, there had been problems during rehearsals at the Alabino training ground in Moscow Province with the controls of the transmission units. Representatives of the Uralvagonzavod factory tried to lay the blame on the military, claiming that “the crews there were completely untrained” and a bunch of conscripts simply bungled the steering. In response, a Defense Ministry spokesman called the allegations about using untrained conscripts “just plain silly”. During the actual parade, the T-14 was sometimes noticeably jerky when turning, while less cutting-edge tanks, including even the genuinely legendary T-34, moved and turned smoothly. The military are clearly right, and the developers have provided a product with an unsatisfactory chassis which will yet need lengthy improvement. Even if the army drivers were partly at fault, it is still the developers who have the explaining to do. The tank is clearly temperamental, difficult to control, and overly dependent on the skill of the operators.

Actually, though, none of this matters in the slightest. “If war comes tomorrow, And we head for the front ...” it will not be the Armata anyone is driving but tanks of an earlier generation: there is not a single Armata in service; it has not yet been commissioned. Indeed, this was not a production or even a pre-production model. There are only a few examples of an experimental prototype, made, it would seem, especially for the parade. It makes no sense to talk even hypothetically about the amazing qualities of the new tank, whose tactical and technical parameters are known only to a very exclusive circle of specialists, and even then only on paper. There has been preliminary factory testing, but no testing as yet on firing ranges, by troops, or by the government’s inspectors. Only after all that has been gone through will the State Commission be able to take a decision. The tank will need to be delivered to troops for trial operations under highly varied conditions of terrain and climate. The upshot is that, right now, there is no T-14 Armata tank, either in law or physically. What was paraded was an experimental prototype of a possible future platform.

What can be said about the other highlights of the parade? An infantry fighting vehicle based on the Armata T-15 platform is just the T-14 tank with a different turret module. Again, only a few examples exist of an experimental prototype that has yet to be tested, yet to be approved by the relevant commission, and that is neither in production nor in service. The advanced Kurganets-25 tracked platform was developed in the late 1990s - early 2000s but has still not been commissioned for service or put into production. The Boomerang wheeled armored personnel carrier, first displayed in 2013, is also a project in development, neither in production nor in service.

But if there is no “breakthrough” tank capable of taking out all the West’s armor, we have to ask why it was suddenly decided to advertise so publicly what is effectively the prototype of a tank that does not yet exist. It seems only yesterday that the leaders of the Russian defense industry were assuring us that the T-90 was the best, most modern tank in the world, and that the T-72, upgraded to the same level, would be just as good.

The war with Ukraine showed these declarations up for what they were worth. As the Centre for Analysis of Strategies and Technologies points out, during the fighting in southeast Ukraine “the core Soviet tanks of the T-64/ T-72/ T-80 generation were utterly discredited by their poor survivability and consequently high losses of tank crews. [...] We have no hesitation in stating that there is an urgent necessity to replace all T-72 and T-80 tanks in the Russian armed forces. [...] The army is equipped with obsolete tanks which put their crews’ lives at risk.” The Ukrainian conflict “made it clear that the BMP-1/ BMP-2 infantry fighting vehicles are next to useless in combat and suffer heavy losses.”

Replacing obsolete armor has been shown in the steppes of Donetsk to be a burning issue in more senses than one. Moreover, the anti-tank weapons that set them ablaze were in many cases not even latest generation. If Russian armor finds itself in the sights of Western third-generation, high-precision anti-tank guided missiles like the American ATRA FGM-148 Javelin, it will stand no chance whatsoever.

Guns travel into battle rear end first

The artillery was extolled more moderately than the armor, the laurels here being awarded mainly to the Koalitsiya-SV (“Coalition”) self-propelled howitzer. Before the parade it was announced that this would have a turret with two 152-mm howitzers on an Armata chassis and be completely unrivalled. Something clearly went wrong, however, because the “new” Koalitsiya-SV on show in the parade was mounted on an old-style 6-axle chassis similar to that used for T-72 / T-90 series armor, and it had a single, solitary gun barrel.

You would be hard put to see this SPH as a complete innovation. It was developed in 2002-2006 but has yet to be commissioned for service. It uses the chassis of the Msta-S 2S19 SPH, developed in 1976 but which entered service only in 1989. At present, the new SPH differs little from its predecessor, despite the radically different construction of the turret. It has been claimed that the new howitzer has twice the range of the Msta-S and even of NATO SPHs. The main shortcoming of Russian cannon artillery in general, though, is its lack of “fire and forget” guided projectiles. Such Russian shells as Krasnopol, Kitolov, Santimetr (“Centimeter”), etc., home in on a laser-designated target, placing lives at risk: in modern warfare a targeting observer can be swiftly located. Even the most advanced

Russian systems require at least a brief illumination of the target. Moreover, the very possibility of that is highly dependent on weather conditions: Russian guided shells are unusable if there is low cloud, fog or rain. Their range is also not particularly great. “Our partners”, as Vladimir Putin likes to call the West, are in a much better situation. The American ‘smart’ rocket-assisted Excalibur shell (tested in combat in Iraq) does not require such targeting, using instead GPS guidance, and has a range of up to 57 kilometers. In terms of accuracy, explosive power, and range it really is unrivalled. Its only competitors are the German SMArt 155, another “fire and forget” projectile, the French 155-mm ADC shell with autonomous radar homing, and the analogous Swedish 155-mm BOSS. These projectiles are very expensive, but they are all-weather, do not require an operator to risk his life when targeting, and resolve problems on the battlefield with a few rounds. The results of Russia’s delay in developing this type of munition is obvious, and a consequence of the catastrophic backwardness of Russian electronics compared with those of the West.

Eighteen months ago, an article about the decline of Russian artillery capabilities appeared in the *Military-Industrial Courier*. Its hard-hitting title was “Are we behind by 10 years or forever?” The authors note a catastrophic lagging behind of Russian projects in intelligence-based artillery support and automated artillery guidance systems. They conclude uncompromisingly that the state of Russian artillery “does not meet the requirements of modern warfare.” The time taken to establish firing coordinates remains at First World War level, and systems of communication and data transfer from command and observation posts to firing positions have not improved since the Second World War. This is hardly surprising, when the basic navigation tool of the Russian armed forces is a topographic surveying vehicle designed back in the 1940s. This is an essential component of all the main integrated missile and artillery and surface to air missile systems, the Smerch (“Whirlwind”) multiple rocket launcher, and the various versions of the S-300 SAM. The standard equipment of the surveying vehicle includes a course recorder, a kind of odograph familiar to the ancient Greeks and Romans.

After the ball

Of course, there was nothing particularly original about the 2015 Victory Day parade. It is a long-established Soviet tradition to throw dust in prying eyes by parading sham hardware, mock-ups, or at best “custom-made” demonstrators. Perhaps we should recall that the idea of such massive parades to demonstrate technological excellence originated with Hitler. Parades on every conceivable occasion excited the Germans and aroused a spirit of militarism and pride in the rebirth of their army. At the same time, it was a personal apotheosis for the Führer and graphic demonstration of the achievements of the Third Reich’s arms industry. Stalin took up the idea, because he too needed to proclaim the success of industrialization and triumphantly display the consolidation of his personal power. One of the most spectacular Red Square parades ever was held on 9 February 1934 in honor of the Communist Party’s “Congress of Victors”, celebrating the glorious culmination of the First Five-Year Plan. The unprecedented abundance of armor was stunning and the event was described as “a parade of steel and machinery”. The highlight of the parades in the 1930s was the monster, five-turreted T-35 tank jokingly referred to as the “five-headed dragon”. The dragon lumbered purposefully over cobbles but got bogged down if it encountered a puddle.

TANKS ON PARADE

Under Khrushchev and Brezhnev, mock-ups of non-existent missiles were paraded to fool the Americans into thinking the USSR could turn them out like sausages. Planes flying past above Red Square had yet to go into production, and bombers flew round in circles to convince everyone the Soviet Union had tens or hundreds more of them than in fact it did.



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