

Return of the bear: Russian Ground Forces modernisation

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Russia's military is once again a major source of concern to its neighbours, yet its army is regularly labelled a 'paper tiger' equipped with ancient equipment and overseen by dysfunctional command structures. Nick de Larrinaga reports on the true strength of the Russian Ground Forces.

The Russian Ground Forces (also known as the Russian army) remains, on paper, one of the largest and most powerful armies currently fielded by any country. Few states can boast a total armed force of around 850,000, let alone inventories of tanks and other heavy equipment numbering in the thousands.

Questions persist, however, over the capabilities of the Russian Ground Forces, with performance in recent campaigns generally regarded as mixed. Serious questions also surround the depth of personnel quality, training, and readiness within the army, which still relies on conscripts for much of its manpower. The bulk of the service's equipment is also of dubious quality by modern standards, being mainly of Soviet-era design and production.



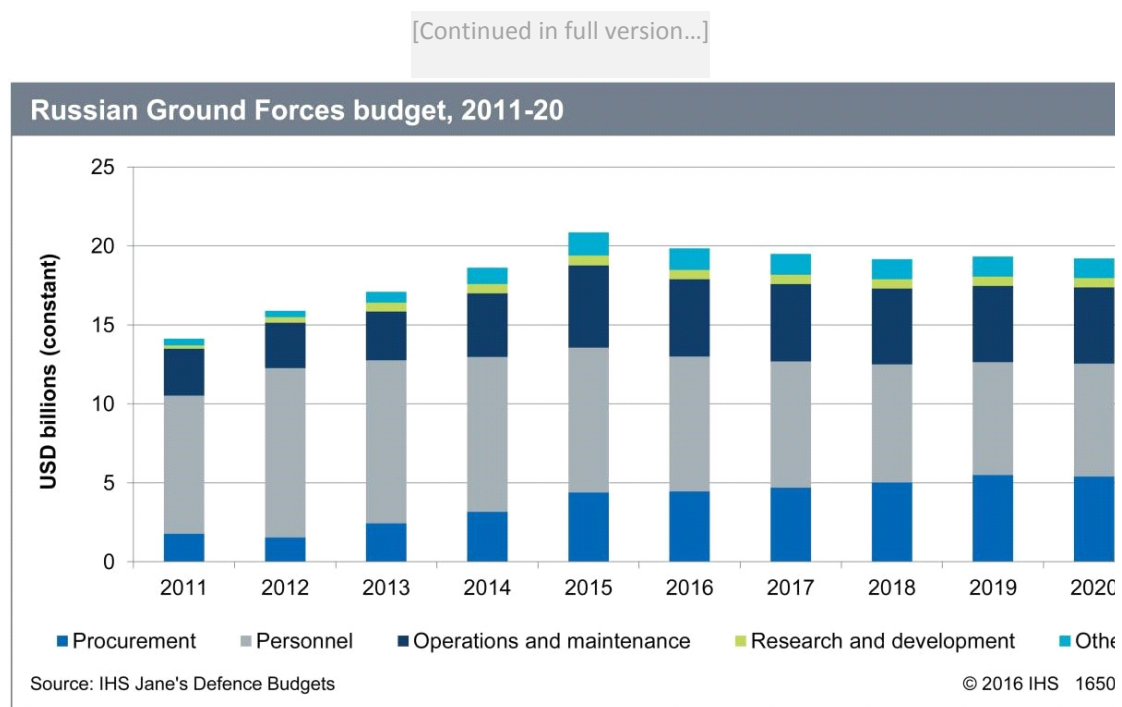
Russia convincingly won its short war in 2008 with Georgia, although the performance of the Russian Ground Forces has since been called into question.

Reforms put into place after the war however mean that the Russian army is a very different beast to the one that fought that war. (PA)

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The ground forces arguably suffered the worst of all the service branches from the post-Cold War slump in Russian defence spending. Procurement, modernisation work, and the development of new technologies for the army dried up almost entirely for over a decade. As a result, only a relatively thin veneer of the Russian Ground Forces' equipment today is less than 10 years old. The vast bulk of it is over 25 years old and built in the Soviet era, but even at the time of construction much of this equipment lagged behind Western equivalents.

Consequently, of all Russia's armed services (of which there are five), its ground forces are the least well equipped. By the Russian Ministry of Defence's (MoD's) own account only 35% of the army's equipment is currently considered 'modern' (compared to an average of 47%). However, what the MoD considers modern does not necessarily correlate to what is considered modern in the West and only further serves to highlight the paucity of the Russian Ground Forces' current fleet inventory.



Russian Ground Forces budget 2011-2020. Russian defence procurement spending has tripled over the past five years, and further growth is needed for Russia to meet its ambitious modernisation goals. Financial pressures, however, mean that ground forces procurement growth is expected to slow significantly in the coming years. (IHS)

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Order of battle

Since the Soviet era the size of the Russian army has shrunk significantly. Currently, the Russian Ground Forces contains less than one tenth of the 3.4 million personnel

included in the Soviet Army in 1991.

As with the rest of the Russian armed forces, operational control of the ground forces is largely divided among Russia's four military districts (MDs), which serve as joint force commands, and the newly created Arctic Joint Strategic Command. Some army units do escape this structure, however, and are controlled directly from Moscow. This also applies to the Russian Airborne Troops (VDV), which is directly controlled by Moscow and considered a military service branch in its own right.

The principal operating units of the Russian Ground Forces are the motorised infantry brigades, each of which has a nominal strength of around 4,200 (or around half this for a tank or artillery brigade). This is a legacy of the reforms of previous Russian defence minister Anatoly Serdyukov, who abandoned Russia's divisional structure. In addition, wholesale reforms were initiated to change recruitment, mobilisation, logistics, and procurement within the army and across the rest of the armed forces.

The aim of Serdyukov's reforms was to optimise the Russian army to fight 'local wars' in the Russian periphery, rather than a massed confrontation with NATO in Europe, and in many ways the performance of the Russian military in both Ukraine and Syria is the direct result of his improvements. However, at the time they proved deeply unpopular with many in the military and eventually Serdyukov was ousted on corruption charges.

While Serdyukov's structure holds for the most part, Sergei Shoigu, his successor from 2012 onwards, has unpicked some of these reforms, notably with the reformation of two divisions: the 2nd Guards Motorised Division and the 4th Guards Tank Division. These are the only two divisions within the Russian Ground Forces and both now reside within the 1st Guards Tank Army that was reformed in January in the Western MD. Shoigu has also announced plans to create two new divisions: another in the Western MD and one in the Central MD. Meanwhile, being outside of the Russian Ground Forces, the VDV escaped Serdyukov's move to a brigade structure and still contains four divisions (the 7th, 76th, 98th, and 106th).

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- **Armour**

Unlike Western militaries, which have largely rebalanced themselves to wage counter-insurgency campaigns, the Russian army remains a high-intensity mechanised force at heart. Main battle tanks (MBTs) supported by massed artillery remain the core of the Russian Ground Forces' strength.

In total the army fields around 2,800 MBTs in its active inventory, plus many more in reserve. These are divided into three types: the T-90, T-80U, and the T-72. All three emphasise frontal protection, a low silhouette, and low weight in their designs, in keeping with Soviet armoured philosophy. They are also equipped with 125 mm main guns fed by autoloaders and accordingly only have three crewmen, compared to the standard four crewmen in the West.

The T-80U was the Soviet Army's most capable frontline tank, used by its elite armoured formations facing off against NATO in Europe at the end of the Cold War.

Today, around 550 remain in service. Although largely unchanged since the Cold War (only a handful of T-80Us received a minor tweaking to the T-80UM standard), it has yet to really be surpassed in the Russian tank fleet. The T-80U features Kontakt-5 explosive reactive armour (ERA), the 1A45 fire control system, 2E42 gun stabilisation system, 1V528 ballistic computer, and DVE-BS wind sensor.

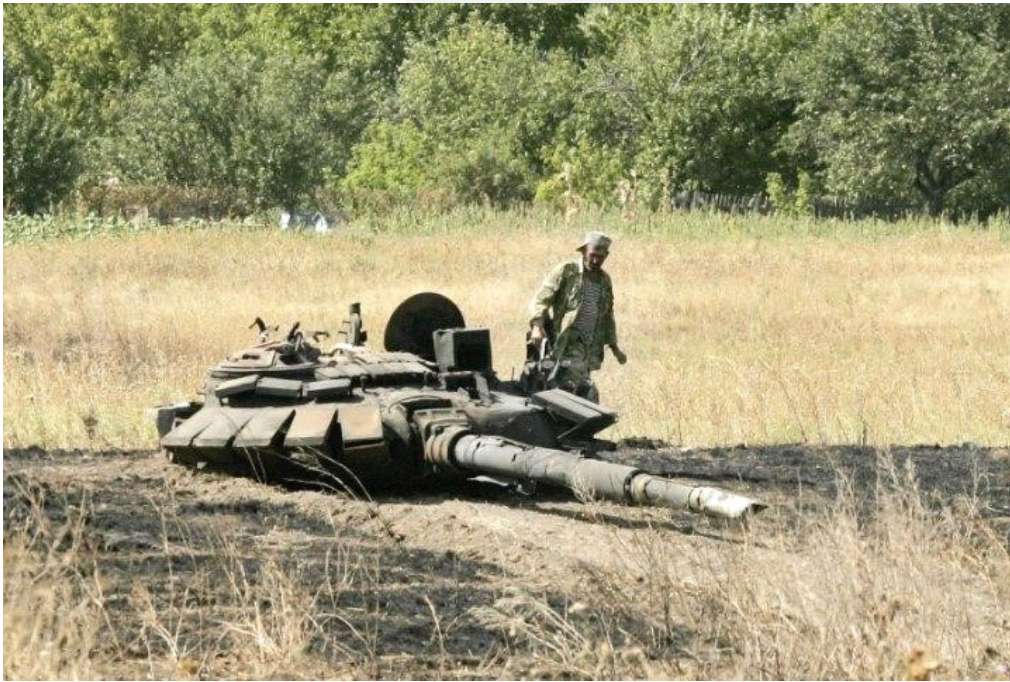


Despite being over 30 years old the T-80U main battle tank remains at the forefront of the Russian Ground Forces fighting strength (PA)

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However, with a thirsty gas-turbine engine and the concentration of Russian tank production in Nizhny Tagil (the T-80U was built in Omsk), the end is approaching for the T-80U, with an end-of-service date set for 2020. In the meantime its continuing importance was highlighted by the announcement in February that the newly reformed 1st Guards Tank Army (a high-status unit of great symbolism) would mainly be armed with the T-80U.

Oldest among Russia's MBTs is the T-72, the design of which goes back to the late 1960s. The T72 accounts for the bulk of the Russian tank fleet, with around 1,700 in service in a number of substantially different variants. These include, in age order: the T-72B1, T-72B obr.1989, T-72BA, and T-72B3. It is common for the MoD and others to refer to all variants from the T-72B obr.1989 onwards by the catch-all name T-72BM, although this is somewhat confusing as these variants do differ. What these variants feature in common is the Kontak-5 ERA and the roll-out of the electronic components of the T-80U (the extent of which differs by T-72 variant) into the T-72 chassis, which is cheaper to build and operate. Later variants also include enhancements to the vehicle's drive systems, including new/uprated powerpacks and a new parallel-hinged track system.



The turret of a destroyed Russian Ground Forces T-72B3 MBT lies in eastern Ukraine. This still comes from footage filmed by Russian state media channel RT Ruptly in eastern Ukraine in late August 2014 near Donetsk. The turret can clearly be identified as being from a T-72B3 due to the presence of the Sosna-U sight. Only the Russian Ground Forces operates this post-Soviet variant of the T-72. (RT Ruptly)

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650383 **Armata**

In May 2015 at the Victory Day Parade in Moscow an entirely new series of armoured vehicles was unveiled. The star of the show, the T-14 Armata, was designed to correct many of the old Russian tanks' flaws while also allowing for the integration of new technologies and ideas not possible within the size and weight limitations of the old designs.

T-14 Armata MBT

1. Fuel tanks
2. Bar armour
3. Radio antenna
4. Fixed APS launchers
5. APS radars
6. Met sensor
7. EO/IR APS receivers
8. Gunner's sight
9. Driver's periscopes
10. Driver
11. Applique armour
12. Driver's FLIR
13. Commander
14. Exhausts
15. Fixed large APS launchers
16. Entrenching tool
17. Remote weapon station and integrated commander's sight
18. Datalink
19. Trainable APS launchers
20. Powerpack
21. 125mm cannon



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Russia's T-14 Armata MBT, unveiled in May 2015, includes many innovations over old designs, including new active protection systems and an unmanned turret.

The headline-grabbing feature of the T-14 is its unmanned turret, with all three crew members being placed in an armoured 'citadel' at the front of the tank. This does not at all solve the fundamental issue of the tank being prone to blowing up if its armour is penetrated. However, by separating the crew from the ammunition it should significantly improve the chances of the crew surviving if a catastrophic ammunition explosion occurs. In theory, removing the crew from the turret allows for the volume to be decreased, thus requiring less armour (and so weight) for the same overall protection level. The turret itself is armed with a 125 mm 2A82 main gun and lacks any coaxial armament (despite earlier reports).

While the unmanned turret may be a welcome development from a crew survivability point of view, beyond that its battlefield utility is limited. For anyone potentially on the receiving end of the T-14, perhaps the most significant development is its extensive array of different APSs that go far beyond anything seen fielded by Russia before. This is recognition of the increasing inability of even the heaviest armour to defeat large-calibre tandem shaped-charge warheads.

The APS on the T-14 is markedly different to the soft-kill Shtora of the T-90 or the hard-kill Arena and Arena-E APS that Russia had most recently been working on. The T-14's APS seems to comprise two different systems: a hard- and soft-kill APS, each of which has its own separate sensors and effectors. Accordingly, it is unclear if the 'Afghanit' name Russian media refers to in relation to the T-14's APS represents one or both of these systems.

The hard-kill version consists of two large sensors on either side of the front of the turret, offering a 180° arc of coverage, and 10 large launch tubes arrayed along the underside of the turret, offering 120° coverage. The launch tube configuration appears identical to that seen on an earlier T-95 (Object 195) MBT concept prototype. It is similar in size to the 107 mm versions of the Russian Drozd hard-kill APS that entered service on a limited number of T-55AM MBTs in the 1980s or the later Drozd-2, which is not believed to have entered service but is still marketed by the KBP Instrument Design Bureau.

One of the limitations of this system is that it can only protect against threats that are lateral to the turret. This means it will provide no protection against guided munitions that are air launched or have a top-attack mode. One explanation for this would be that it is optimised to defeat armourpiercing fin-stabilized discarding-sabot (APFSDS) rounds. The MBT may instead rely on the softkill system and its armour package to defeat guided munitions. Another possibility is that these systems were simply for show on the prototypes.

The soft-kill system is based around four sensors mounted around the turret to provide 360° coverage and two trainable launchers on either side of the rear of the turret armed with 12 launch tubes for 360° coverage. There are also two additional sets of 12 launch tubes recessed into the roof of the T-14 turret, either for vertical coverage or as ready resupply for the trainable launchers. These appear to be smaller than the 81 mm smoke grenade launchers typically fitted to Russian armoured vehicles. A soft-kill role seems the most plausible for the launchers,

although it is possible that they could also offer a hard kill or anti-personnel capability.

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The 2S35 Koalitsiya-SV self-propelled gun (foreground) and the T-15 Armata heavy IFV are both set to enter service with the Russian Ground Forces. Funding issues may mean neither enters service in great numbers in the coming years, however. (RAE2015)

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Change is not only afoot in Russia's heaviest equipment parks; it has also unveiled new IFVs and armoured personnel carriers (APC) for its mechanised brigades. Currently, these are equipped with various generations of the tracked BMP family (BMP meaning IFV in Russian) and the wheeled BTR family (BTR meaning armoured transport/APC).

The ground forces' most modern tracked IFV in service is the BMP-3. This is heavily armed for an IFV, with its turret alone being equipped with a 100 mm low-recoil gun, a 30 mm cannon, and a 7.62 machine gun. It also has two bow machine guns on either side of the front of the vehicle. The BMP-3 really is the peak of the Soviet interpretation of the IFV, with its mounted infantry fighting from within the vehicle, rather than dismounting to fight. Indeed, with its rear-mounted engine, it is difficult for infantry to dismount. At 16.5 tonnes the BMP-3 is light compared with Western IFV designs that more commonly weigh between 20 and 30 tonnes. Nevertheless, it is still significantly heavier than the 1960s-era 13-tonne BMP-1 or the 14-tonne BMP-2 of the 1980s, both of which remain in service with the Russian army in large

numbers. In total, the army fields around 700 BMP-3s, 1,800 BMP-2s, and 500 BMP-1s in active service, plus large stockpiles of vehicles in reserve.



The BMP-3 is the most modern version of the BMP family currently in service with the Russian Ground Forces. With three machine guns, a 100 mm cannon and a 30 mm cannon, it is the most heavily armed IFV in the world. It will eventually be replaced/augmented with the much larger and probably better protected Kurganets-25 IFV. (Christopher F Foss)

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Matching armoured vehicle developments in the West and the growth in MBT weight seen in the Armata, Russia's new IFV - the Kurganets-25 - weighs in at a much beefier 25 tonnes than its BMP predecessors. The Kurganets is built by Kurganmashzavod (the maker of the ubiquitous BMP series) and is armed with the same unmanned turret and armament as the T-15. This is a change from previous Russian BMPs, perhaps indicating that the 100 mm low-recoil gun of the BMP-3 has become as much of a technological dead end for piercing modern armour as the 70 mm low-recoil gun of the BMP-1 did before it.

As with the T-15 the Kurganets turret is armed with the 152 mm calibre 9M133 Kornet missile, which packs a significant anti-armour punch. Prior to the 5 May 2015 parade there were suggestions that Russia would field the Kurganets-25 IFV with a new turret called the AU-220M armed with a 57 mm cannon and this may happen at a later date for some variants.

Russia has also shown off an APC version of the Kurganets armed with a 12.5 mm machine gun. This is something of a departure for the Russian army, which has never operated dedicated APC variants of the BMP-1, BMP-2, or BMP-3.

Much like the Armata vehicles, both the Kurganets are equipped with APS. The system on the IFV is more comprehensive and includes the same sensors as the hard-kill system on the Armata paired with a set of launch tubes, although the Kurganets IFV system differs slightly in offering 360° coverage and possessing launch tubes of a smaller calibre.

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- **Artillery**

The potency of Russian artillery has recently been demonstrated in both Ukraine and Syria. While Russian armoured brigades have their own organic artillery battalions, the army also operates entire artillery brigades within its orbit. Russian artillery in service includes self-propelled howitzers (SPHs), towed howitzers, multiple rocket launchers (MRLs), and tactical ballistic missiles (TBMs)/land-attack cruise missiles.

The incoming 2S35 Koalitsiya-SV may be the eventual future of Russia's SPH units, but for the time being, and indeed the immediate future, the 2S19 Msta-S from Uraltransmash remains their mainstay. In total the Russian army operates around 550 Msta-S systems, some of which have been modernised to the new 2S19M2 standard that includes a new fire-control system. Russia also operates around 450 examples of the towed version of the same 152 mm artillery piece: the 2A65 Msta-B.

This pattern of using the same artillery piece in both self-propelled and towed versions is a common one for Russia. Besides the Msta-S/B, the army continues to operate around 250 examples of the previous-generation 2S5 Giatsint-S 152 mm SPH and 200 examples of its towed 2A36 Giatsint-B version. Similarly, Russia operates around 650 examples of the 122 mm 2S1 Gvozdika SPH and 550 of its towed D-30 version. Alongside these, Moscow continues to operate around 950 2S3 Akatsiya 152 mm SPHs and around 100 mm T-12 (2A19) anti-tank guns. Frontline professional units tend to use the Msta-series artillery pieces, with older systems largely serving in second-string conscript units.

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- **Air defence**

The lowest tier of air defence in the Russian army is provided by manportable air defence systems (MANPADS), the latest being the 9K333 Verba. This is only just entering service in significant numbers, with the bulk of the army's MANPADS inventory being composed of the earlier 9K36 Strela-3 (SA-14 'Gremlin'); 9K310 Igla-1 (SA-16 'Gimlet'); 9K38 Igla (SA-18 'Grouse') and 9K338 Igla-S (SA-24 'Grinch') systems. While some of these types are ageing, recent combat performance in Ukraine and Syria has demonstrated their continued utility.

The rest of the Russian Ground Forces' air defence capability is specifically designed to be mobile in order to support offensive Russian armour. The army still operates a number of ZSU-23-4 Shilka self-propelled anti-aircraft guns, although these have largely been phased out in favour of the 2K22 / 9M311 Tunguska (SA-19 'Grison') self-propelled anti-aircraft gun and missile (SPAAGM) system, of which around 200 are in service. However, Russia's newest SPAAGM, the PantsyrS1/2 (SA-22

'Greyhound'), is operated by the Russian Aerospace Defence Forces rather than the army.

Short-range self-propelled surface-to-air missile (SAM) systems within the army orbat include around 350 9K35 Strela-10M/9K35M3-K Kolchan (SA-13 'Gopher') and 300 9K33 Osa (SA-8 'Gecko') systems. The latter was meant to be replaced by the 9K331 Tor (SA-15 'Gauntlet'), of which Russia has around 160, although this has not happened entirely. Russia has, however, been rolling out upgrades to the Tor SAMs in its inventory, with the latest versions being the TorM1-2U and Tor-M2.

Page



The Russian Ground Forces operates a powerful air defence capability in its own right. Here, Russian President Vladimir Putin is pictured in front of a 9K37 Buk SAM (SA-11 'Gadfly') armed with 9M38 or 9M38M1 missiles, based at Russia's base in Armenia in December 2013. Seven months later a Russian Ground Forces Buk SAM exactly like this one was responsible for shooting down MH17 over Ukraine in July 2014. (PA Photos)

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