



U.S. ARMY TANK AUTOMOTIVE RESEARCH, DEVELOPMENT AND ENGINEERING CENTER

NATO Army Armaments Group (NAAG)
Land Capability Group Land – Engagement

2nd SUMMIT FOR NATO INFANTRY FIGHTING VEHICLE PROGRAM MANAGERS

“Threats to the Next generation Combat Vehicle”

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- Introduction
- Main Battle Tanks
- Infantry Fighting Vehicle and APCs
- Anti-Tank Guided Missiles
- Artillery and Rockets

Russian Ground Force Modernization to 2025



Introduction

- Worldwide trend to upgrade and improve capabilities
 - Better fire control and sensors
 - Increasing UAS/drone use
 - Advanced ATGM proliferation



Russian Ground Force Modernization to 2025



- Russian intent was 70% of all AFVs to be modernized and/or new production by 2020*. This goal can only be met by overhaul and modernization, not from new production.
- Emphasis was on upgrading MBTs first
 - T-90M
 - T-72B3
 - T-80BVM
- New fire control with Sosna-U stabilized gunner's sights and 2nd Gen FLIR
- 125mm 2A46M-5 gun allowing for use of Svinets APFSDS
- Relikt ERA (over Kontakt-5)
- More powerful V-92S2F diesel engine (T-72B3)
- All capable of firing gun-launched ATGM w/5k range



Planned IFV Upgrades

- State Armament Program for 2018-2025 order calls for 540 upgraded BMP-2 infantry fighting vehicles and BMD-2 airborne IFVs
 - New B05Ya01 Berezhok turret w/2A42 30mm cannon
 - 4 x Kornet ATGM launchers
 - New gunner's sight with independent line-of-sight stabilization, thermal imagers, laser rangefinder and missile guidance channel
 - Digital onboard computer coupled to a sensor suite
 - Automatic target tracking
 - Independent commander's panoramic sight with independent dual axis stabilization





IFV Improvements

- Increase in Lethality
 - Addition of KORNET ATGMs w/5500m range (EM 8000m)
 - Modernized fire control and enhanced sensors/thermal imagers increase engagement ranges
 - Potential anti-helicopter capability
 - 30mm lethality remains the same, but enhanced by FC improvements
 - AG-30 automatic grenade launcher
- No apparent improvements in survivability/protection
 - Frontal armor vulnerable to NATO medium cannon
 - Sides only protected to 7.62mm
 - SLAT armor available



2025 and Beyond



Kurganets-25 fielding of two variants w/3-man crew

- IFV w/30mm 2A42 cannon (6 dismounts)
 - APC w/12.7mm HMG (8 dismounts)
 - Both turrets unmanned
 - Significantly improved protection against a variety of threats
 - Hard-Kill Afganit APS on IFV and Soft-Kill APS on both
 - 360 degree cameras
- Lethality Improvements
 - Advanced Fire Control and Sensors
 - Four KORNET-EM w/8km range on IFV
 - Survivability significantly improved over BMP
 - Applique over base armor
 - 10 ton weight increase over BMP
 - Active Protection
 - Protected crew compartment





APC Improvements

8X8 Bumerang APC fielding in two variants

- Kurganets turret w/30mm 2A42 cannon and four KORNET-EM ATGMs
 - Kurganets RWS w/12.7mm HMG
 - Intended to replace BTR series
 - 3-man crew w/7 dismounts
- Lethality Improvements
 - Advanced Fire Control and Sensors
 - Four KORNET-EM w/8km range on IFV
 - Survivability better than BMP
 - Applique over base armor



2025 and Beyond



8X8 Bumerang APC fielding in two variants

Kurganets turret w/20mm 2A42 cannon and four KORNET-EM ATGMs



In case you missed it, possible fielding of a Bumerang with a 125mm gun.....

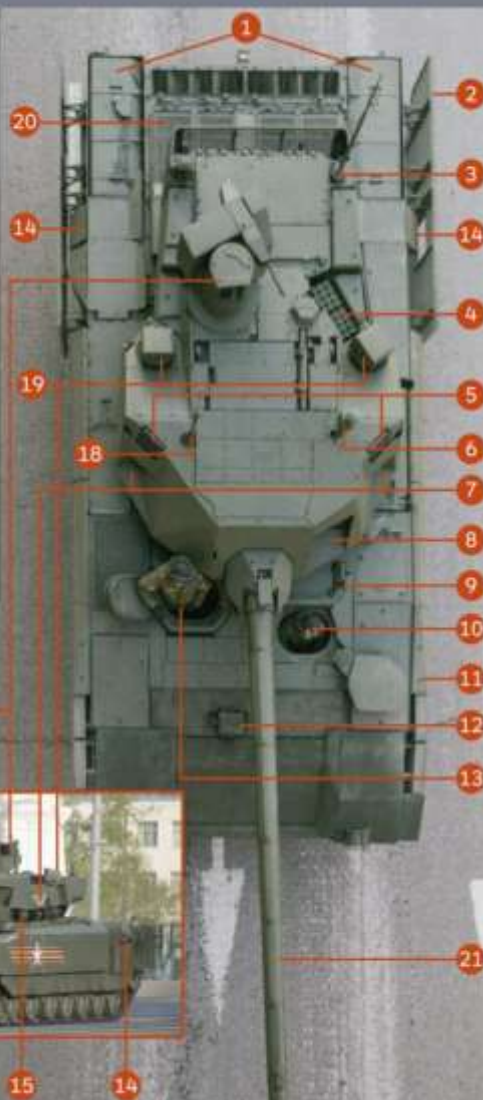


The Armata Chassis



T-14 Armata MBT

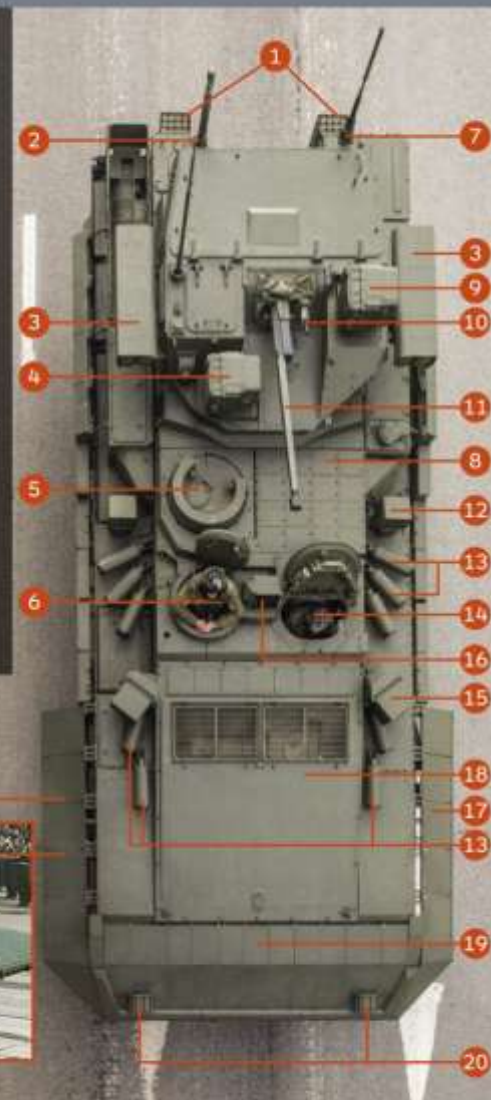
1. Fuel tanks
2. Bar armour
3. Radio antenna
4. Fixed APS launchers
5. APS radars
6. Met sensor
7. EO/IR APS receivers
8. Gunner's sight
9. Driver's periscopes
10. Driver
11. Applique armour
12. Driver's FLIR
13. Commander
14. Exhausts
15. Fixed large APS launchers
16. Entrenching tool
17. Remote weapon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



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T-15 Armata Heavy IFV

1. Fixed APS launchers
2. Met sensor
3. 2x Kornet ATGMs
4. Gunner's sight
5. Gunner
6. Commander
7. Datalink
8. ERA tiles
9. Commander's sight
10. 7.62 mm coaxial MG
11. 30 mm cannon
12. Trainable APS launcher
13. Fixed APS launchers
14. Driver
15. EO/IR APS receiver
16. APS radar
17. Overhanging angled armour
18. Powerpack
19. Arrowhead armour
20. Headlights
21. Drive wheel
22. Exhaust
23. Additional armour package to protect engine exhausts and relatively unarmoured sections of rear of T-14 hull



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ATGMs



Increasing capabilities

- New fielding almost all tandem
- Increased ranges – 25Km+ future
- Reduced SACLOS guidance, more LBR, LSAH

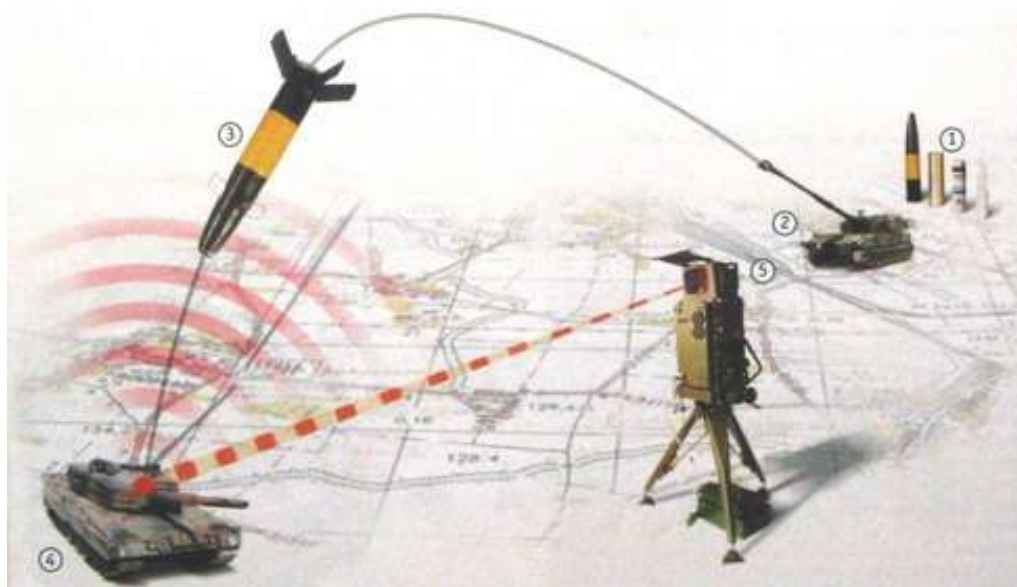


Artillery and Rockets



Increasing capabilities

- Increased rate of fire
- Increased ranges (100km+ MRL)
- Increased Accuracy
- Improved target acquisition/RSTA



Key Takeaways



- ATGM quantities, range, lethality will continue to improve
- All MBTs and IFVs will have highly capable ATGMs with significant range and modern sensors/fire control
- MBTs have increased survivability now/Next Generation IFVs future
- Artillery and rocket fire ranges, accuracy, and targeting sensors are all increasing
- Avoiding detection will be increasingly difficult. Improved sensors, drones/UAVs, eyeballs and encrypted communications, electronic emissions all work against it
- Newly upgraded MBTs and IFVs will remain in service for a long time



Questions?