

Direct Ground Combat Weapon Systems

Understanding the War in Ukraine

Session #3

How Long is Basic Training?

US



10 weeks
Plus 4—50 weeks for
military occupational
specialty training

Russia



6 weeks
Plus 3—10 months for
military occupational
specialty training

Ukraine



17 days

Difference Between Tank & Infantry Fighting Vehicle



National Interest



Sgt. Eric Garland

Generations of Main Battle Tanks

Gen	Yr Prod	Description	Examples
1 st	1946— 1964	Post WWII	M47/48 (US) T-54/55 (USSR)
2 nd	1959-- 2016	Enhanced night-fighting In most cases, NBC protection Most Western tanks armed with 105mm Royal Ordnance L7 tank gun or derivations	M60 (US) Leopard 1 (GE) T-64 & T-72 (USSR)
3 rd	1976— 2019	Composite Armor Computer-stabilized fire control systems – allows firing on the move and high first hit probability on targets up to 2,000 meters (1.25 miles) away	T-80 & T-90 (USSR) Leopard 2 (GE) M1 (US) Challenger 1 (UK)
Moder nized	2011— 2023	3 rd Gen tanks modernized with 4 th Gen technology	M1A2 SEP v3 & v4 (US)
4 th	2012— 2035?	Still under development Latest technology	K2 Black Panther (S. Korea) T-14 (Russia) Challenger 3 (UK)

NATO Standardization Agreements (STANAGs)

Since 1951



Examples: all tank ammunition is 120mm and all artillery is 155mm

Identification Friend or Foe?



Ukraine uses a white cross
Soldiers wear tape

Russia adopted a "Z"

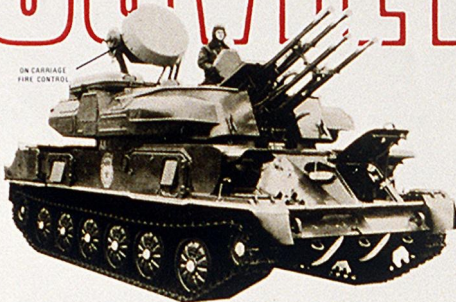


UNCLASSIFIED

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Headquarters, Department of the Army
DISTRIBUTION: US Army Training Aids Centers.

SOVIET BIG 7



ZSU-23/4

ARMORED ANTI-AIRCRAFT WEAPON

FOUR 23mm AA GUNS ON A COMMON MOUNTING.
FOUR GUNS FIRE TOGETHER FOR MAXIMUM VOLUME OF FIRE.
EMPLOYED AS LOW-LEVEL AA TROOP PROTECTION.



BMP AMPHIBIOUS ARMORED INFANTRY COMBAT VEHICLE

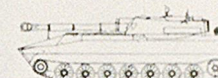
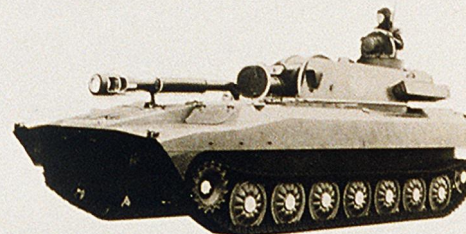
MOBILITY, FIREPOWER AND TROOP PROTECTION EXCELLENT BY U. S. STANDARDS.

ARMAMENT:
73mm SMOOTHBORE GUN AND AN ANTITANK MISSILE.
CARRIES CREW OF 3 AND 8 INFANTRYMEN.



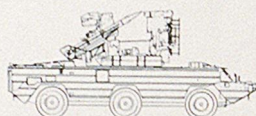
T-72 TANK

REPORTED TO BE THE SUCCESSOR TO THE T-62 TANK.
HIGHLY MOBILE WITH IMPROVED ARMOR PROTECTION.



122MM SP GUN
M-1974

REPORTED TO BE THE REPLACEMENT FOR
THE 122mm TOWED HOWITZER D-30.
HIGHLY MOBILE AND AMPHIBIOUS.

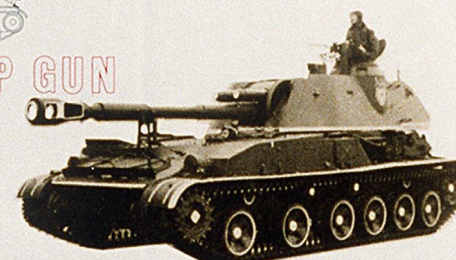


SA-8 GECKO
SURFACE-TO-AIR MISSILE

FOUR SA-8 MISSILES ARE CARRIED ON A THREE-AXLE
AMPHIBIOUS VEHICLE.
THE ENTIRE SYSTEM, FIRE CONTROL RADAR AND
MISSILE LAUNCHER, IS MOUNTED ON ONE VEHICLE.
THE SA-8 MISSILE'S RANGE IS 10-15 km.



152MM SP GUN
M-1973



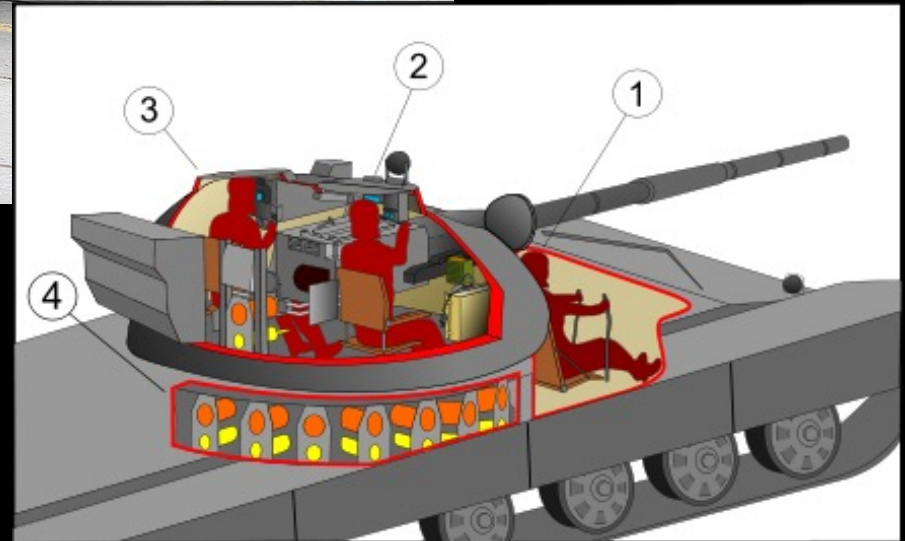
REPORTED TO BE THE REPLACEMENT FOR TOWED 152mm GUN HOWITZER.
HIGHLY MOBILE.

Russian T-72 Tank



- 1-driver
- 2-commander
- 3-gunner
- 4-auto-loading system

Weight: 41.5 to 44.5 tons
Main gun: 125mm smoothbore
Eff Rg: 1.85 miles
Engine: Diesel V-12, 290 mile range
Crew: 3



Russian T-80 Tank



Weight: 42.5 to 46 tons

Main gun: 125mm smoothbore

Eff Rg: 1.85 miles

Engine: gas turbine, 208 mile range

Crew: 3

Russian T-90 Tank



Weight: 46 tons
Main gun: 125mm smoothbore
Eff Rg: 1.85 miles
Engine: diesel, 208 mile range
Crew: 3

T-14 Armata Tank



Weight: 55 tons
Main gun: 125mm smoothbore
Eff Rg: 3.1 miles
Engine: diesel, 310 mile range
Crew: 3

T-54/55 tanks on train headed to Ukraine



22 March 2023: Russian military may have lost more than 1,800 tanks since the beginning of the invasion of Ukraine. Social media posts show outdated tanks headed to Ukraine.

Russian Armored Battle Tactics

combined arms — The synchronized and simultaneous application of arms to achieve an effect greater than if each element was used separately or sequentially. (US Army ADP 3-0)

combined arms team — The full integration and application of two or more arms or elements of one Military Service into an operation. (US Joint Chiefs of Staff JP 3-18)



Russian tanks aren't obsolete, they're being used wrong (Posted 7 Dec 2022)

1 Mar 2023, <https://www.youtube.com/watch?v=gb4L8ThDymQ>



Tank Transporters

Russian KamAz-65225 Tank Transporter



US Oshkosh M1070 Heavy Equipment Transporter (HET)



Ukrainian T-64 Tank



Damaged T-72 near Bakhmut

BREM-1
Armored Recovery Vehicle



Reuters



Military-Today.com

Ukrainian Initiative



Result? Diversity of inventory.

US Army 120mm Tank Ammunition



120 mm family of tactical tank ammunition consists of the five unique cartridges:

- The fifth generation Kinetic Energy (KE) cartridge
- Three High-Explosive (HE) cartridges
- Canister cartridge.

What are the Best Tanks Available to Ukraine?

The top ten tanks today:

1. German KF51 Panther – not yet in production
2. US M1A2 Abrams
3. Russian T-14 Armata – not yet in production
4. South Korean K2 Black Panther
5. Chinese T-99
6. German Leopard 2
7. French Leclerc XL
8. British Challenger 2
9. Israeli Merkava V
10. Japanese Type-90

<https://warriormaven.com/land/the-top-10-tanks-in-the-world#:~:text=The%20top%20ten%20tanks%20today,and%20the%20Japanese%20Type%2D90.>

M1A2 Abrams IUS)



Breaking Defense

Leopard 2 (2A7V) (Germany)



Politico



German Leopard 2 Tank





US M1 Abrams Tank



Comparison Predominant Tanks

	T-64	T-72	M1	Leopard 2
Origin	USSR	USSR	US	Germany
Production	1963	1968	1979	1979
Generation	2	2	3	3
Weight	38 tons	44.5 tons	66.8 tons	66.5 tons
Engine	5 cyl diesel 700 hp	V12 diesel 780 hp	multi-fuel turbine 1,500 hp	V12 turbo diesel 1,479 hp
Speed	28-37 mph	37-47 mph	42 mph	43 mph
Op Range	310 miles	290 miles	265 road, 93-124 x-ctry	210 road, 140 x- ctry
Size crew	3	3	4	4
Main gun	125mm smoothbore	125mm smoothbore	120mm smoothbore	120mm smoothbore
# rounds	28	39 22 (loader) + 17	42	42

US M1 vs Russian T-72



M1 Training at Grafenwohr, Germany



Phillip Walter Wellman/Stars and Stripes



Stars and Stripes, U.S. Army



Russian BMP-3



Weight: 19 tons

Engine: Diesel, 330 mile range

Crew: 3

Dismounts: infantry squad (7)

Russian BTR-80



Weight: 15 tons

Engine: Diesel, 370 mile range

Crew: 3

Dismounts: infantry squad (7)



US M113 Armored Personnel Carrier



US M2 Bradley Infantry Fighting Vehicles





US M1126 Stryker Infantry Carrier Vehicle



18 tons, 2-man crew + 9 infantrymen passengers



M1117 Guardian Armored Security Vehicle





Mine-Resistant Ambush Protected (MRAP)



Andrew c via Flickr



U.S. Military



High Mobility Multipurpose Wheeled Vehicle





M60 Armored Vehicle Launched Bridge



- Based on M60 tank (diesel)
- 60-foot “scissors-type” bridge
- 53 tons, 290 mile range (375 gallon fuel capacity)
- Replaced in the US Army by the M1-based M104 Wolverine

Improved Ribbon Bridge





German Armored Engineering Equipment



Pionierpanzer 2A1 Dachs

Von Luhai Wong

Wisent-1 Mine Clearing Tank





M58 Mine Clearing Line Charge (MICLIC)



SPC Brittney Bradley, 343rd Mobile Public Affairs Detachment (MPAD), U.S. Army



Spc Jonnie Riley via Army Technology.com



MAJ W. Chris Clyne, 115th Mobile Public Affairs Detachment (MPAD), U.S. Army



M978A2 HEMTT Fuel Tanker



- Heavy Expanded Mobility Tactical Truck (HEMTT) Fuel Servicing Truck
- 35' long, 10-ton truck, but could weigh as much as 75,500 lbs depending upon 'kit'
- Tanker holds 2,500 gallons of fuel capacity (8.75 ton)
- Manufactured by Oshkosh®



Mk 19 Grenade Launcher



40mm grenade (1.6" diameter, 2 lbs – same as M79 or M203 shoulder-fired weapons)
40-60 rounds per minute sustained, up to 390 rpm cyclic
Max range 2,400 yards, effective range 1,600 yards
Vehicle-mounted or tripod (weighs 80 lbs)
Manufactured since 1966 by Saco Defense
Wagner Group used around Bakhmut



Wagner Group



Top right: <https://www.csis.org/blogs/post-soviet-post/band-brothers-wagner-group-and-russian-state>
Bottom: <https://gatdaily.com/the-guns-and-gear-of-wagner-group/>

Back-up Slides

Equipment Described by Pavel Filatyev

UAZ light truck



Konflikty.pl

KAMAZ short-wheelbase for Airborne



© Vitaly V. Kuzmin

Vitaly V. Kuzmin

82mm Mortar



Kerim 44

BTR – Armored Reconnaissance Vehicle



Vitaly V. Kuzmin

More Equipment...

Tigr Infantry Mobility Vehicle



BMD-2



AK-74M



RPG-7

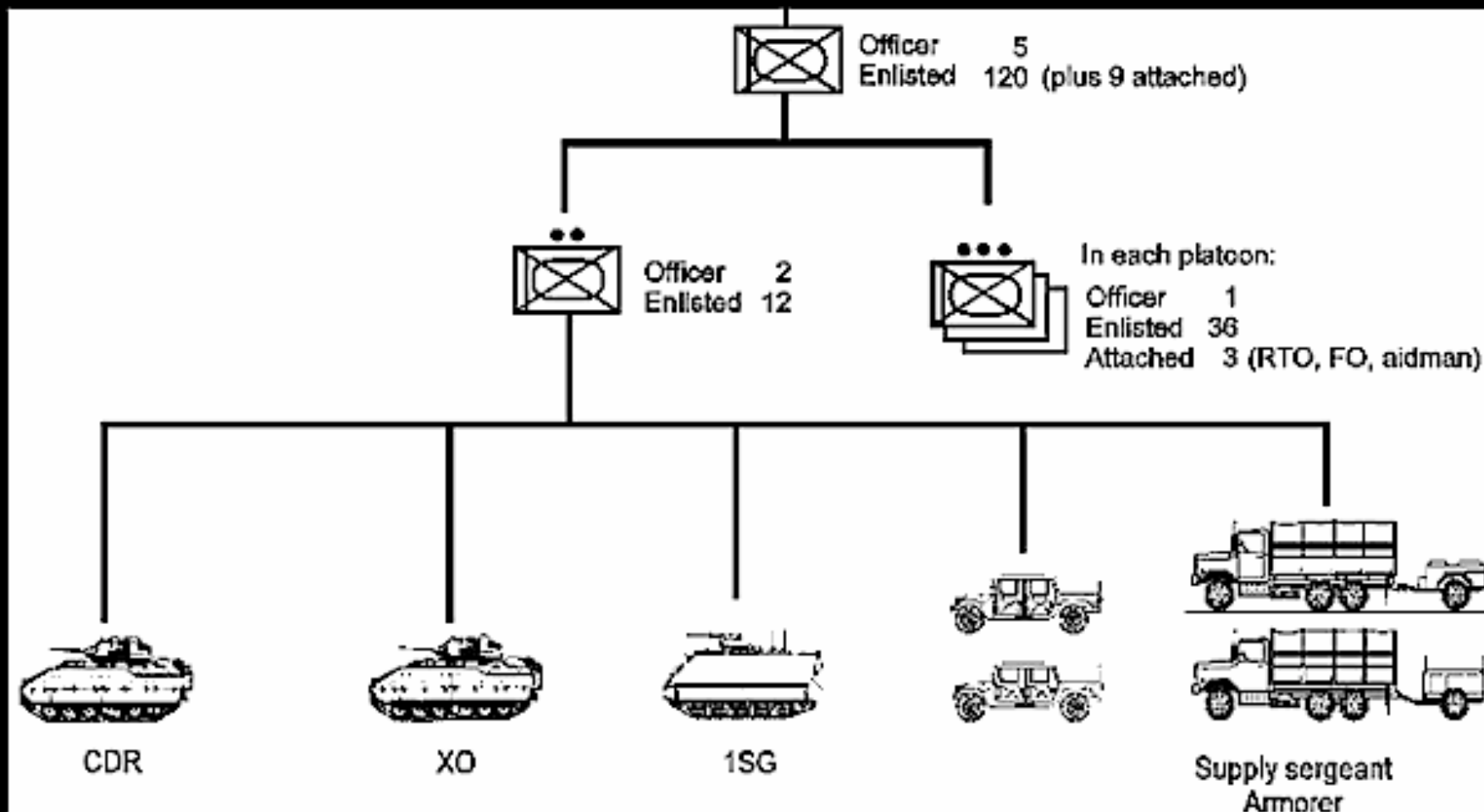


Utyos heavy machinegun





US Mechanized Infantry Company

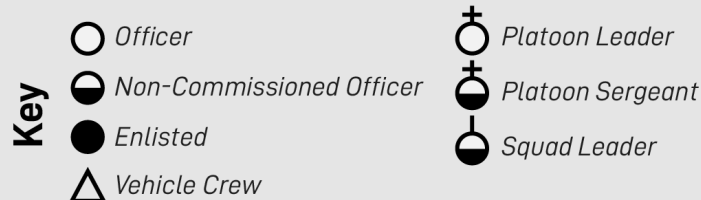




US Army Bradley Infantry Platoon

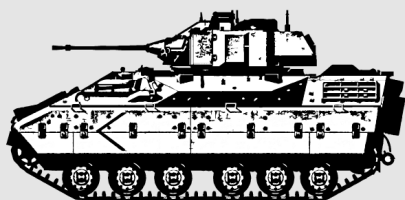
Army Mechanized Infantry Platoon

 United States of America
21st Century (2002 to Present)



Alpha Section

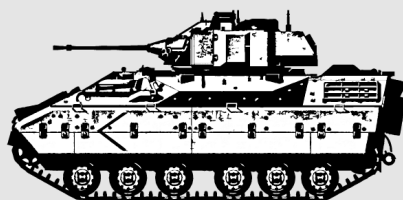
M2A3 Bradley (BFV-2)



Vehicle Crew:



M2A3 Bradley (BFV-1)

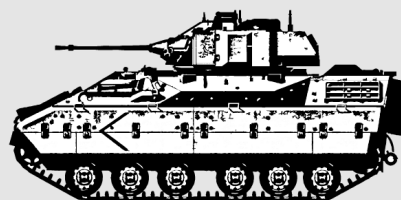


Vehicle Crew:



Bravo Section

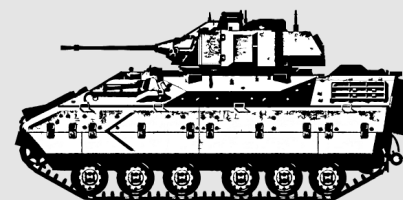
M2A3 Bradley (BFV-4)



Vehicle Crew:



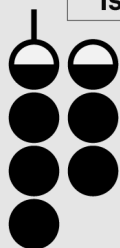
M2A3 Bradley (BFV-3)



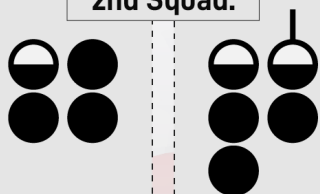
Vehicle Crew:



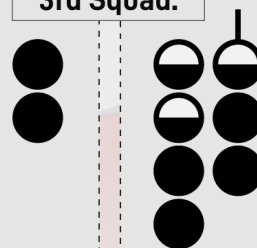
1st Squad:



2nd Squad:



3rd Squad:



* Platoon Leader dismounts and is replaced by the Gunner. The Gunner is replaced by the Alternate Gunner

** Platoon Master Gunner takes command of Alpha Section with Platoon Leader dismounts



ARMOR COMPANY (ABRAMS)

U.S. Army Combined Arms Battalion, Armored BCT



Company Headquarters (2 OF, 12 OR, 1 Attached)



M1A2 Tank



M1A2 Tank



M113A3 APC



*Attached
Medic



M1078 LMTV



HMMVW



HMMVW



1st Tank Platoon (1 OF, 15 OR)



M1A2 Tank



A Section



M1A2 Tank



M1A2 Tank



B Section



M1A2 Tank



2nd Tank Platoon (1 OF, 15 OR)



M1A2 Tank



A Section



M1A2 Tank



M1A2 Tank



B Section



M1A2 Tank



3rd Tank Platoon (1 OF, 15 OR)



M1A2 Tank



A Section



M1A2 Tank



M1A2 Tank



B Section



M1A2 Tank

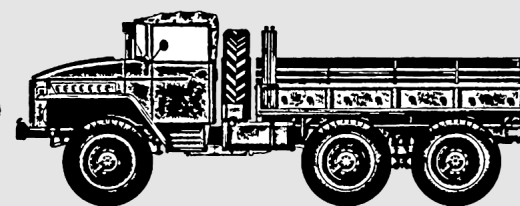
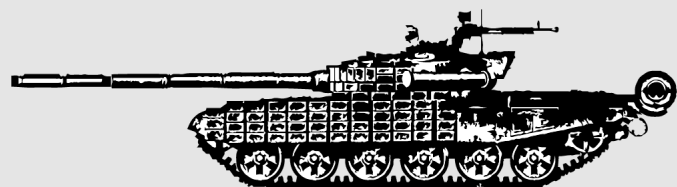


1× Company HQ

(3 OFF, 1 WO, 2 ENL)

1× Main Battle Tank*

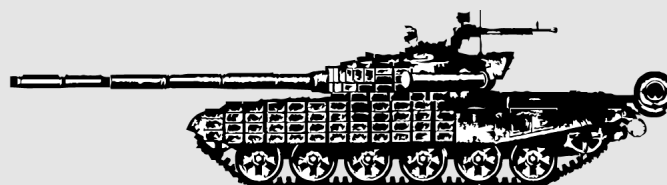
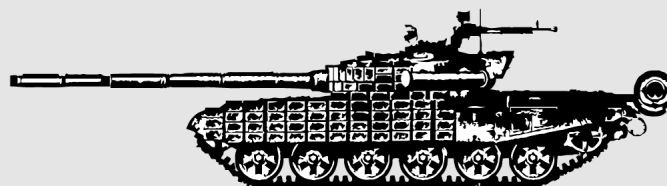
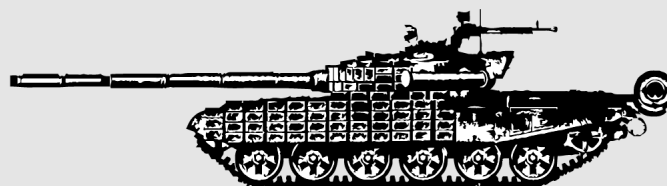
1× Ural-375/ZIL-157 Truck



3× Tank Platoons

(1 OFF, 2 NCO, 6 ENL each)

3× Main Battle Tanks*



Key

Officer/Warrant Officer ○

Non-Commissioned Officer ●

Enlisted ●

Vehicle Crew △

Company Commander ○

Platoon Commander ○

Deputy Platoon Commander ○

Tank Commander ○

Tank Company (Tank Regiment)

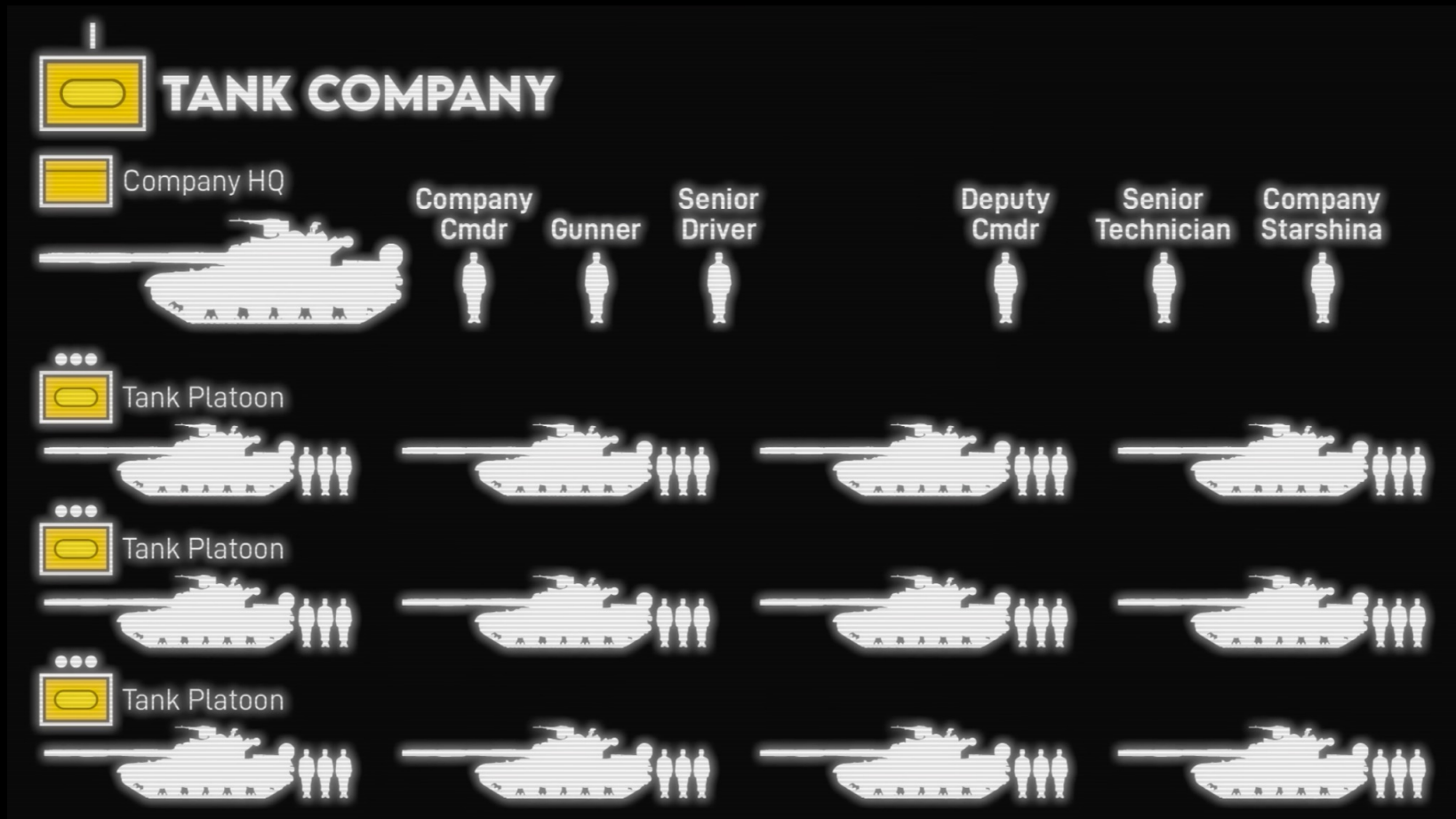
Union of Soviet Socialist Republics

Cold War (1980s)

*T-80/T-72/T-64/T-62/T-55/T-54

battleorder.org

Ukrainian Tank Company Organization



Ukrainian Tank Battalion Organization

