

## Summary:

Having analyzed the availability of the Challenger, Leopard, Abrams and T-72 tanks in different countries, it was found out that:

- Challenger 1 (Jordan, 400);
- Challenger 2 (Britain – 227);
- Leopard 1 (Germany – 2.4k, Italy – 920, Türkiye – 397);
- Leopard 2 (Switzerland – 380, Spain – 108, Türkiye – 354, Germany and the Netherlands – 350 each, Poland and Sweden – 240 each);
- Abrams (US – 8.8k, Egypt – 1.3k, Saudi Arabia – 450);
- T-72 (India – 2.4k, Kazakhstan – 980, excluding Russia, Belarus, Syria).

## Known decommissioned tanks in the countries:

- Challenger 1 – in Jordan (400);
- Leopard 1 – in the Netherlands (468), Denmark (230), Belgium (167);
- M1 Abrams – in the USA (2300 M1A2);
- T-72 – in Bulgaria (250), in Hungary (130). It is known that Poland, the Czech Republic, Macedonia, and Morocco have transferred T-72 tanks and modifications to Ukraine, with one of the Czech Republic's batches financed by the United States and the Netherlands.

## Estimated average cost of tanks:

Challenger 1 – **\$0.5-2.2m**; Challenger 2 – **\$6.5m**; Leopard 1 – **\$1-2m**; Leopard 2 – **\$1.3-15m**; Abrams M1 – **\$3-8m**; T-72 – **\$0.5-2m**. The price depends on the modification, year of manufacture, and exploitation – decommissioned tanks should be cheaper (new Leopard 2A6 and Leopard 2A7+ cost **\$6.8m** and **\$11m** approximately). In 2014, Finland paid **\$2.66m** for used Leopard 2A6s, although in 2007 Chile purchased 128 Leopard 2A4 for **less than €1 million a piece (<\$1.37m as of 2007)**, the media explained this by political ties and immediately signed contracts for repairs).

## Characteristics:

The T-72 and Leopard 1 have the weakest engines (~800 hp) compared to the others (1200-1500 hp), but because of this, their weight is 10-20 tons less, and Challenger tanks are slower than Leopard and Abrams, but the difference is not significant in other parameters.

According to Defence.ua, due to the newer upgrade packages, Abrams tanks are [considered](#) better than Leopard tanks, but only if the Ukrainian Armed Forces receive the latest versions of the M1A1:

- **armor**: Abrams is considered to be better than Leopard 2A4, but in theory it can be offset by installing protection elements from Leopard 2A5;
- **fuel consumption**: Leopard 2 consumes 3.4 l/km on road and 5.3 l/km off-road, Abrams 4.3 l/km on road and 8 l/km off-road. The former commander of the US Army in Europe, Lieutenant General Ben Hodges, [stated](#) that the M-1 Abrams division consumes up to 2.2 million liters of fuel per day;
- **service**: there is only one Abrams operator in Europe, if we don't count the US Army itself – Poland.

**Comparison of Challenger 1 and Challenger 2**: it is [noted](#) that in practice, Challenger 2 has an effective range of 4000, which is 1.6 times longer than Challenger 1. Also, according to Stern's [article](#), there are only 3% of identical spare parts between Challenger 1 and Challenger 2, the main difference in design is that the thermal imaging system in Challenger 2 is located above the barrel of the weapon, while in Challenger 1 it is located on the right side of the turret. The [article](#) by armyrecognition.com stated that the Challenger 2 is protected by second-generation Chobham armor, which provides increased resistance to penetration by anti-tank weapons, both kinetic effect (KE) and cumulative effect (CE). In addition, the Challenger 2 [has](#) additional armor modules that increase the tank's combat weight compared to the Challenger 1. Since the Challenger 2 is [equipped](#) with its own high-explosive fragmentation rounds, it can destroy enemy fortifications or lightly armored vehicles at a distance of up to 8 km. All Challenger 1s [can be modified](#) to the Challenger 2.

### Tank stocks in countries:

Name	Produced	Stocks						Description
<a href="#">Challenger 1</a>	<a href="#">420</a>	JO - <a href="#">392-400</a> <sup>1</sup>	-	-	-	-	-	It was in service with the UK from 1983 to 2000, with the last batch produced in 1989.
<a href="#">Challenger 2</a>	<a href="#">399</a>	UK - <a href="#">227</a>	OM - <a href="#">38</a>	-	-	-	-	Modification Challenger 1 has been in production since 1993.
<a href="#">Leopard 1</a>	DE - <a href="#">4744</a> IT - <a href="#">720</a>	DE - <a href="#">2437</a>	TR - <a href="#">397</a>	GR <a href="#">&gt;351</a>	IT - <a href="#">920</a>	BR - <a href="#">378</a>	CL - <a href="#">270</a>	It was produced from 1961 to 1984. Some NL tanks have been sold, while some AU tanks are in museums.
		Decommissioned						
<a href="#">Leopard 2</a>	2155 (1993) 3600 ( <a href="#">2013</a> )	NL - <a href="#">468</a>	BE <a href="#">&lt;167</a>	NO - <a href="#">78</a>	DK - <a href="#">230</a>	AU - <a href="#">90</a>	CA - <a href="#">66</a>	The 3rd generation battle tank, <a href="#">used</a> since 1979 by 16 countries. It is the main tank of Germany, and the Leopard 3 is currently under development. Leopard 2 will be in service until 2030. Some SK tanks are in museums.
		CH <a href="#">~380</a>	CL - <a href="#">172</a>	QA - <a href="#">62</a>	TR - <a href="#">354</a>	SG <a href="#">&gt;170</a>	HU - <a href="#">56</a>	
		DE <a href="#">~350</a> / <a href="#">312</a>	GR <a href="#">~170</a>	DK - <a href="#">51</a>	NL <a href="#">~350</a>	AT <a href="#">~114</a>	PT - <a href="#">37</a>	
		PL - <a href="#">240</a>	ES <a href="#">~108</a>	NO - <a href="#">36</a>	SE <a href="#">~240</a>	CA - <a href="#">104</a>	CZ - <a href="#">15</a>	
		FI <a href="#">~200</a>	ID - <a href="#">103</a>	SK - 15				
<a href="#">M1 Abrams</a>	<a href="#">10 721</a>	US <a href="#">&gt;8800</a>	IQ - 321 ( <a href="#">1</a> , <a href="#">2</a> )				KW - <a href="#">218</a>	American battle tank, used since 1980. The M1A1 modification was <a href="#">released</a> in 1985 and the M1A2 in 1986. The main battle tank M1 Abrams is no longer in service with the US-military, and some M1s have been <a href="#">modified</a> into M1A2s. The US Army has more than 2,300 of these tanks in reserve. The original M1 was never exported.
		EG - <a href="#">~1200</a> - <a href="#">1360</a>	MA - <a href="#">384</a>				AU - <a href="#">59</a>	
		SA <a href="#">~450</a>	-				-	
		Decommissioned						
<a href="#">T-72</a>	~25-30k	US - <a href="#">2300</a>	-				-	Soviet battle tank, an <a href="#">improved</a> version of the T-64. The USSR produced 18,000 tanks by 1990. Another 10k were manufactured under license in Czechoslovakia, India, Romania, Yugoslavia, and <a href="#">Poland</a> – the tank was exported to 30 countries. Modified T-72s are in service mostly in the countries of the former Warsaw Pact.
		ru <a href="#">~9000</a>	DZ - <a href="#">500</a>	HU - <a href="#">164</a>	IN - <a href="#">2418</a>	IR - <a href="#">480</a>	AM - <a href="#">150</a>	
		SY <a href="#">~1600</a>	VN - <a href="#">480</a>	MM - <a href="#">139</a>	BY <a href="#">~1465</a>	BG <a href="#">~90</a> - <a href="#">180</a>	PL <a href="#">~329</a>	
		KZ <a href="#">~980</a>	KG <a href="#">~215</a>	MA <a href="#">~148</a>	AZ <a href="#">~636</a>	GE <a href="#">~180</a>	CZ <a href="#">~123</a> - <a href="#">179</a>	
		Decommissioned						
		BG - <a href="#">~250</a>	HU - <a href="#">130</a>				-	

### Tanks transferred to Ukraine:

Country	Tank	Number	Date
United Kingdom	Challenger 2	<a href="#">14</a>	01'2023
Poland	Leopard 2A4	<a href="#">14</a>	01'2023
Poland	PT-91	<a href="#">30</a>	01'2023
Poland	T-72	<a href="#">30</a>	01'2023
Poland	T-72	<a href="#">260</a>	2022
USA	M1 Abrams	<a href="#">31</a>	01'2023

Spain	Leopard 2A4	<a href="#">53</a> <sup>1</sup>	02'2023
Norway	Leopard 2A4NO	<a href="#">8</a>	01'2023
Netherlands	Leopard 2	<a href="#">18</a> <sup>2</sup>	01'2023
Finland	Leopard 2	<a href="#">n/a</a> <sup>3</sup>	01'2023
Denmark	Leopard 1A5	<a href="#">20</a> <sup>4</sup>	02'2023
Canada	Leopard 2	<a href="#">4</a>	01'2023
Morocco	T-72B	<a href="#">20</a> <sup>5</sup>	02'2023
Sweden	Stridsvagn 122	- <sup>6</sup>	01'2023
Germany	Leopard 2A6	<a href="#">14</a>	01'2023
Germany	Leopard 1	<a href="#">178</a> <sup>7</sup>	02'2023
Czech Republic	T-72M	<a href="#">~100</a> <sup>8</sup>	01'2023
Czech Republic	T-72M	<a href="#">72</a>	8'2022
Macedonia	T-72A	<a href="#">&gt;8</a> <sup>9</sup>	8'2022

<sup>1</sup>- Number depending on combat capability.

<sup>2</sup>- Rents from Germany and can buy for the Armed Forces of Ukraine.

<sup>3</sup>- Announced plans to transfer Leopard 2 tanks to the Ukrainian Armed Forces, but the exact number has not been announced.

<sup>4</sup>- Denmark may repair and transfer 20 Leopard 1A5-DK tanks to Ukraine within the next 3 months and another 40 within the next 6 months.

<sup>5</sup>- Morocco has [provided](#) Ukraine with 20 T-72 tanks, which were modernized in the Czech Republic. It is known that Morocco [has](#) at least 60 T-72 tanks in storage.

<sup>6</sup>- As of January 2023, the country [was not preparing](#) to supply tanks to Ukraine. The government has not ruled out the possibility of deliveries after Germany's positive decision.

<sup>7</sup>- In January 2022, Germany [approved](#) the supply of more than 80 Leopard tanks to Ukraine, including its own supplies. Other countries or private companies that wanted to send them to Ukraine needed permission from the German government, as the tanks were manufactured in Germany. In February 2022, the German government [approved](#) the export of 178 Leopard 1 tanks to Ukraine, most of which will be delivered in 2024.

<sup>8</sup>- A total of 120 modernized tanks are planned to be delivered under the contract, of which 20 were modernized for Morocco to supply to Ukraine. Deliveries will continue through 2023.

<sup>9</sup>- Owns approximately 30 T-72A tanks, of which at least 8 have been transported to Ukraine.

#### Comparison of tank characteristics:

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Tank name	Production	Armament			Mobility				Dimensions		
		Weapons	Machine guns	Range of fire	Power reserve	Speed		Engine power	Weight	Size	
						Max	Rough terrain.			Muzzle	Body
Challenger 1 (FV4030/4)	1983-1989	- rifled muzzle-loader L11A5 - 120 mm caliber - projectiles – 64	2x7,62 mm ammunition – 4000	2500 m	500 km	56 km/hour	-	1200 hp	62 tones	11,55 m	8,33x3,5x2,5 m
Challenger 2 (FV4034)	1994-2009	- rifled muzzle-loader L30E4 - 120 mm caliber rifled - projectiles – 50	2x7,62 mm ammunition – 4000	3000 m	500 km	59 km/hour	40 km/hour	1200 hp	62,5 tones	11,55 m	8,33x3,52x2,49 m
Leopard 1	1961-1984	- rifled muzzle-loader L7A3 105 - 105 mm caliber	2x7,62 mm ammunition – 5200	2000 m	500 km	65 km/hour	40 km/hour	830 hp	42,4 tones	9,54 m	7,09x3,41x2,76 m

<b>Leopard 2</b>	1979-2022*	- projectiles – 60 - smoothbore gun RH-M-120 - 120 mm caliber - projectiles – 42	2x7,62 mm ammunition – 4740	3500 m from the ground, 2500 m – along the way	550 km	72 km/hour, 31 km/hour reverse stroke	40 km/hour	1500 hp	55,1 tones	9,67 m	7,72x3,7x2,48 m
<b>M1 Abrams</b>	1980-1992	- rifled muzzle-loader M68A1 - 105 mm caliber - projectiles – 55	2x7,62 mm, 1x12,7mm ammunition: - 7,62 mm – 11,400; - 12,7 mm – 1000	3000 m	465 km	72 km/hour	48 km/hour	1500 hp	54,5 tones	9,77 m	7,92x3,65x2,38 m
<b>T-72</b>	1973-1990	- smoothbore gun 2A46 - 125 mm caliber - projectiles – 39**	1x12,7 mm, 1x7,62 mm ammunition: - 12,7 mm – 300; - 7,62 mm – 2000	up to 4000 m	500 km	60 km/hour	35 km/hour	780 hp***	41,5 – 44,5 tones	9,53 m	6,84x3,46x2,19 m

\* until 2022, the Leopard 2 body was manufactured in Greece;

\*\* in some modifications – 45;

\*\*\* in the newer 840-1200 hp.

#### Cost of tanks:

Tank name	Country	Year	Price	Known quantity	Additionally
<a href="#">Challenger 1</a>	UK	1987	~\$2.27m	-	-
		2000	~\$583k	400	
<a href="#">Challenger 2</a>	UK	1991		<a href="#">140</a>	-
	UK	1994-2002*	~\$6.8m	<a href="#">386</a>	In 2002, they received the entire batch of 386 Challengers 2 under a contract with the UK Ministry of Defense.
	UK	1999	\$6.5m	-	In May 2021, the modernization of 148 Challenger 2 tanks by Rheinmetall BAE Systems Land <a href="#">cost</a> the UK ~\$1.1b, and the modernized tanks were called Challenger 3. That is, ~\$7.44m was used to modernize one tank.
Leopard 1	-	1963	\$250k	-	-
	DK	1997	~\$2.18m (used)	-	-
	LB	2008	<\$0.12m	-	-
	ID	2011	\$2.8m	-	-
Leopard 2	CL	2007	<\$1.37m	-	-
Leopard 2A6	FI	2014	\$2.66m	-	-
	DE	1'2023	\$6.8m	-	-
Leopard 2A7+	Global	2017-2022	\$10-15 m	-	-
Leopard 2A7+	DE	2020	\$12-18 m	-	-
Leopard 2s	DE	1'2023	\$11m	-	-
Abrams M1	US	1980	\$3m	10721	-
Abrams M1A1	US	1985	\$8m	5838	-
Abrams M1A2	US	1998	\$4m	863	-

T-72

ru	2003	<a href="#">\$1m</a>	60	-
ru	2006	~ <a href="#">\$900K</a>	1000	-
ru	2009	<a href="#">\$1-1.2 m</a>	<a href="#">92</a>	-
UA	2011	~ <a href="#">\$500k</a>	200	-
ru	2012	<a href="#">\$1-2 m</a>	100	-
ru	2016	~ <a href="#">\$1.6 m</a>	50	-