ARES

Raising Red Flags:
Annexe 1 & Annexe 2
2014

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SAFETY INFORMATION

Remember, all arms and munitions are dangerous. Treat all firearms as if they were loaded, and all munitions as if they were live, until you have personally confirmed otherwise.

If you do not have specialist knowledge, never assume that arms or munitions are safe to handle until they have been inspected by a subject matter specialist. You should not approach, handle, move, operate, or modify arms and munitions unless explicitly trained to do so.

If you encounter any unexploded ordnance (UXO) or explosive remnants of war (ERW), always remember the ‘ARMS’ acronym:

- **AVOID** the area
- **RECORD** all relevant information
- **MARK** the area to warn others
- **SEEK** assistance from the relevant authorities

DISCLAIMER

This report is presented for informational purposes only. It is not intended to provide instruction regarding the construction, handling, disposal, or modification of any weapons systems. Armament Research Services (ARES) strongly discourages non-qualified persons from handling arms and munitions. Arms or munitions of any variety should not be handled without the correct training, and then only in a manner consistent with such training. Subject matter experts, such as armourers, ATOs, and EOD specialists, should be consulted before interacting with arms and munitions. Make a full and informed appraisal of the local security situation before conducting any research related to arms or munitions.
AK VARIANTS DOCUMENTED IN THE UKRAINE CONFLICT

The AK (Avtomat Kalashnikova), sometimes incorrectly referred to as the ‘AK-47’, has served as the basic pattern for a wide variety of Soviet and Russian rifles and light machine guns which have been developed since its earliest version entered military service in 1947. These variations can often be subtle and are not easily distinguished to the unpractised observer. However, determining the particular version of the rifle in question can provide valuable information to help determine its origin.

All of the models discussed below were originally designed and produced in the USSR or Russia. The flags below each model description show which weapons are, or were, in Soviet, Russian, and Ukrainian service.

AKM

The earliest variant documented in this report, the AKM is the modernised version of the AK adopted by the USSR in 1959. It has a fixed wooden stock and foregrip, and is chambered for the 7.62 x 39mm cartridge. Its magazines have noticeably greater curvature than those of the later AK-74 rifles.

AKMS

Originally designed for vehicle crews, this rifle is identical to the AKM but features an under-folding metal stock instead of a fixed wooden stock.

AKM assault rifle.
Photo credit: zonawar.ru

AKMS assault rifle.
Photo credit: zonawar.ru
RPK
Adopted by the USSR in 1961, the RPK is essentially an AKM with a longer (20") and heavier barrel, and a bipod. It is designed for sustained fire in the light machine gun role, and distinguished by this long barrel and bipod, along with a modified wooden stock, wooden foregrip and distinctive highly-curved 7.62 x 39 mm magazines.

![RPK light machine gun.](Image)
Photo credit: zonawar.ru

AK-74
In 1974, the USSR formally adopted a new 5.45 x 39 mm cartridge, and an updated Kalashnikov type rifle to match. The AK-74 was initially produced with a wooden stock and handguards. To distinguish it from earlier guns, the stocks had a long groove milled in each side, and a raised rib was added to the sides of the handguards. In addition, its magazines are noticeably less curved than those of the earlier 7.62 x 39 mm weapons. In 1985, the wooden stocks and handguards began to be produced from a plum-coloured polyamide material.

![AK-74 assault rifle.](Image)
Photo credit: zonawar.ru

AK-74N
The standard AK-74 rifle did not feature a mount for optical sights, so the AK-74N was developed with an optic mounting rail on the left side of the receiver. As with the standard AK-74, this version will have either a wooden or a plum-coloured stock and foregrip.
Annexe 1: AK Variants documented in the Ukraine conflict

**AKS-74**
Concurrently with the adoption of the AK-74, the AKS-74 was introduced for troops who needed more compact weapons. It has a side-folding metal stock, which is triangular in shape and hollow in the centre.

**AKS-74N**
The AKS-74N is identical to the AKS-74, but with a rail mount on the left side of the receiver for mounting optical sights.

**AKS-74U**
The AKS-74U is a short-barrelled variant of the 1974 pattern rifle, with the same folding stock as the AKS-74, but with an 8" barrel instead of the typical 16.3" barrel.
RPK-74
Similar to the earlier RPK in concept, the RPK-74 is an AK-74 rifle with a bipod and longer barrel to facilitate its use in the light machine gun role. Its stocks and handguards are either wooden or plum-coloured polyamide, as with the standard AK-74.

AK-74M
In 1991, the AK-74M (Modernizirovanny; modernised) was adopted. This was intended to replace both the AK-74 and AKS-74, and features a new black side-folding stock. This new stock is solid and made of polymer. The rifle also has a rail on the left side of the receiver for mounting optical sights, and the stock has a rectangular indentation (often visible in photos when other features are indistinct) to accommodate this rail.
Annexe 1: AK Variants documented in the Ukraine conflict

**RPK-74M**
Contemporary to the AK-74M, this is a light machine gun with a side-folding black polymer buttstock designed to replace the RPK-74.

RPK-74M light machine gun.
Photo credit: zonawar.ru
ANNEXE 2

ARMoured Fighting Vehicles in the Ukraine Conflict

A large range of armoured fighting vehicles has been seen within the Ukraine conflict. This annexe displays images of each of the vehicles documented within the report. Each type is only listed once; this annexe makes no attempt to discern the numbers of each type in current service with the combatant parties.

The flags above each image indicate which side or sides have been seen employing that vehicle in the conflict.

MAIN BATTLE TANKS

IS-3

A separatist reactivated IS-3 being transported after its seizure by Ukrainian government forces.
Photo credit: Valentyn Ogirenko / Reuters
T-34-85

A reactivated T-34-85, with improvised armour attached.
Photo credit: ‘Cossacks Rada’ / YouTube

T-64A

Pro-Russian separatists drive a T-64A near Makeyevka, eastern Ukraine, in August.
Photo credit: Sergei Grits / AP Photo
T-64B

Ukrainian security forces pass by a T-64B near Slovyansk.

Photo credit: Sergei Grits / AP Photo
Annexe 2: Armoured fighting vehicles in the Ukraine conflict

**T-64B1M**

A T-64B1M with Ukrainian flag in heavy fog, 7 November 2014.

Photo credit: Gazeta
Annexe 2: Armoured fighting vehicles in the Ukraine conflict

T-64BM

The remains of a destroyed Ukrainian T-64BM Bu-lat, near Lutugino, July 2014.
Photo credit: Lost Armour

T-64BV

A Ukrainian government T-64BV engages pro-Russian separatist fighters Slovyansk, 6 June 2014.
Photo credit: Efrem Lukatsky / AP Photo
Annexe 2: Armoured fighting vehicles in the Ukraine conflict

**T-72B**

A pro-Russian T-72B near the Donetsk airport, October 3, 2014.
Photo credit: Darko Vojinovic / AP Photo

**T-72B3**

A T-72B3 tank, which Ukrainian forces claim was destroyed near Ilovaik.
Photo credit: Телеканал 24
Annexe 2: Armoured fighting vehicles in the Ukraine conflict

T-72BA

A destroyed T-72BA near Starobesheve, eastern Ukraine.
Photo credit: Lost Armour

T-72B Mod. 1989

A destroyed T-72B Model 1989, near separatist controlled Starobesheve, eastern Ukraine, 2 October 2014.
Photo credit: Maria Tsvetkova / Reuters
INFANTRY FIGHTING VEHICLES

BMD-1

Ukrainian security forces with a BMD-1 at a checkpoint in Malinivka, eastern Ukraine. 24 April 2014.
Photo credit: Marko Djurica / Reuters

BMD-2

Ukrainian security forces and a BMD-2 guard a checkpoint outside the town of Slaviansk, 4 June 2014.
Photo credit: Gleb Garanich / Reuters
BMP-1

Ukrainian security force member preparing a BMP-1 in Avdiivka, November 2014.
Photo credit: 'Військове телебачення України'

BMP-1KSh

Abandoned Ukrainian security force BMP-1KSh near the village of Elenovka.
Photo credit: Lost Armour
Annexe 2: Armoured fighting vehicles in the Ukraine conflict

**BMP-2**

Ukrainian government forces atop a BMP-2 near the village of Smeloe. 23 October 2014.
Photo credit: Українське інформаційне фотоагентство (LUFA)

**BMP-2K**

The remains of a destroyed BMP-2K near Luhansk Airport, 19 October 2014.
Photo credit: Lost Armour
Annexe 2: Armoured fighting vehicles in the Ukraine conflict

BRDM-2

A burnt out separatist BRDM-2 in Lysychansk, late July.
Photo credit: Lost Armour

BRM-1K

Separatists pose in front of a captured BRM-1K, October 2014.
Photo credit: Lost Armour
Annexe 2: Armoured fighting vehicles in the Ukraine conflict

**BTR-3E1**

BTR-3E1 [front] in a Ukrainian military convoy outside Mariupol, 27 August 2014.
Photo credit: Sergei Grits / AP Photo

**BTR-3K**

Burnt remains of a Ukrainian National Guard BTR-3K.
Photo credit: ‘bmpd’ / Livejournal
Annexe 2: Armoured fighting vehicles in the Ukraine conflict

BTR-4E

A damaged Ukrainian BTR-4E that saw heavy fighting before being captured by separatist fighters, October 2014.
Photo credit: Inforesist

BTR-4K

Ukrainian BTR-4K captured and re-employed by the ‘Vostok Battalion’.
Photo credit: ВОЙНА ОКОНЧЕНА
A BTR-82AM, caught in the background of a video uploaded to YouTube by separatist forces.

Photo credit: 'bmpd' / Livejournal
ARMoured Personnel Carriers

BTR-60PB

The burnt remains of a destroyed Ukrainian BTR-60PB, near Uspenka.
Photo credit: Lost Armour

BTR-70

A separatist-captured BTR-70, after fighting with Ukrainian security forces in Luhansk.
Photo credit: Yevgeny Biyatov / RIA Novosti
**Annexe 2: Armoured fighting vehicles in the Ukraine conflict**

**BTR-80**

Ukrainian security forces operating a BTR-80 APC with sandbags acting as improvised armour.

Photo credit: Efrem Lukatsky / AP Photo

**BTR-D**

A group of separatists ride atop a BTR-D as part of a convoy of vehicles leaving Kramatorsk, 16 April 2014.

Photo credit: сайт города Краматорска
GT-MU

Separatists with a captured GT-MU left by Ukrainian security forces following fighting in Lysychansk.
Photo credit: YouTube user ‘NEWS | UKRAINE RUSSIA TODAY’

MT-LB

A Ukrainian government MT-LB captured by pro-Russian separatists.
Photo credit: Lost Armour
MT-LB 6MA

A destroyed MT-LB 6MA after an attack from Ukrainian artillery near Ilovaisk, 26 June 2014.
Photo credit: Дорожный контроль

MT-LBVM

Another MT-LB variant, the MT-LBVM, destroyed by the same artillery attack, 26 June 2014.
Photo credit: Дорожный контроль
MT-LBVMK

Remains of a MT-LBVMK destroyed in September.
Photo credit: ‘Pavel Andronov’ / VK

PTS-2

A PTS-2 captured by separatist forces in Lysychansk.
Photo credit: ‘Espero.TV’ / YouTube
SELF-PROPELLED ARTILLERY

9K51 Grad

A 9K51 MLRS captured by pro-Russian separatist forces in eastern Ukraine.
Photo credit: 'ЮГО-ВОСТОК! ЕНОТЫ!'

9K57

A Ukrainian government 9K57 MLRS, destroyed by pro-Russian separatist forces in eastern Ukraine.
Photo credit: Lost Armour
SELF-PROPELLED ARTILLERY

2S1

Separatists pose with a captured Ukrainian 2S1.
Photo credit: Lost Armour

2S3

A Ukrainian 2S3 captured by separatists, in a video uploaded 9 August 2014.
Photo credit: ПРЕСС-ЦЕНТР / YouTube
2S5

Ukrainian army 2S5 captured by separatists near Amvrosievka.
Photo credit: YDPR Ministry of Defence

2S9

Separatists ride a 2S9 in a convoy of vehicles leaving Kramatorsk, 16 April 2014.
Photo credit: сайт города Краматорска
A 2S19 Msta-S, captured by separatist forces near Starobeshevo.

Photo credit: Lost Armour
SELF-PROPELLED ANTI-AIRCRAFT SYSTEMS

2S6

A 2S6 Tunguska in a Ukrainian military base in Perevalnoye, in the Crimean peninsula.

Photo credit: Tyler Hicks / The New York Times
9K33

Pro-Russian separatist fighters sit atop a captured Ukrainian 9K33 Osa air defence artillery vehicle.

Photo credit: Nations Presse
Pro-Russian separatists gesture from inside a captured 9K35 ‘Strela-2’ at a checkpoint on the outskirts of Donetsk city, 10 July, 2014.

Photo credit: Maxim Zmeyev / Reuters
OTHER ARMoured VEHICLES

1V14

A Ukrainian 1V14, captured by separatist forces.
Photo credit: Lost Armour

1V18

A Ukrainian 1V18 captured by separatists in August.
Photo credit: 'Colonelcassad' / Livejournal
Annexe 2: Armoured fighting vehicles in the Ukraine conflict

1V119

A destroyed Ukrainian 1V119 after fighting in Shakhtyorsk, 6 August 2014.
Photo credit: сайт города Краматорска

BRDM-2RKhB

A separatist BRDM-2RKhB, repurposed and fitted with a 12.7 mm NSV heavy machine gun.
Photo credit: Korrespondent.net
Annexe 2: Armoured fighting vehicles in the Ukraine conflict

BREM-1

A damaged BREM-1 captured by separatists near Luhansk Airport.
Photo credit: Lost Armour

BREM-2

The remains of a destroyed Ukrainian army BREM-2.
Photo credit: ‘signifer_xiii’ / Livejournal
Annexe 2: Armoured fighting vehicles in the Ukraine conflict

**BTR-60PU**

A destroyed Ukrainian forces BTR-60PU in Uspenka.
Photo credit: ‘Дмитрий Бояркин’ / YouTube

**BTS-4**

A damaged BTS-4, captured by separatists in Stepanivka, Donetsk Oblast.
Photo credit: Lost Armour
GMZ-3

Pro-Russians ride atop a GMZ-3, after fighting in Ilovaisk.
Photo credit: Mauricio Lima / The New York Times

HMMWV

A picture of a Ukrainian army HMMWV, 30 May 2014.
Photo credit: Вернись живым
Annexe 2: Armoured fighting vehicles in the Ukraine conflict

**IMR-2**

An IMR-2 combat engineering vehicle, captured by separatists.
Photo credit: ‘Комсомольская Правда’ / YouTube

**K1Sh1**

Abandoned Ukrainian army K1Sh1 after battles in Novokaterinovka.
Photo credit: ‘RuptlyTV’ / YouTube
MDK-3

An abandoned Ukrainian army MDK-3, captured by separatist forces, in Novoazovsk.
Photo credit: CNN

MTU-55

A destroyed Ukrainian MTU-55 armoured vehicle-launched bridge.
Photo credit: Lost Armour
Annexe 2: Armoured fighting vehicles in the Ukraine conflict

PRP-3

A separatist video documenting the insides of a captured PRP-3.
Photo credit: 'Инфо корпус' / YouTube

R-145BM

A family poses for photos in front of a destroyed Ukrainian R-145BM after fighting in Luhansk.
Photo credit: Spencer Platt / Getty Images
The burnt remains of a destroyed ZS-88, with loudspeaker affixed to the roof.

Photo credit: Lost Armour