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#### **FORFWORD**

This study examines the lethal arsenal of the PKK and YPG terrorist network through open-source intelligence (OSINT) methods. The report consists of two main chapters.

In the first chapter, we present a thorough military-strategic and operational assessment of the arsenal, along with policy recommendations. The second part highlights the weapon systems in more detail.

The report covers the prominent weaponry of tactical and operational importance for the PKK & YPG and should not be read as a comprehensive listing. The PKK & YPG may have other arms that could not be detected through open-source evidence, or deliberately neglected due to their doubtful significance. Despite potential shortcomings, the mapping out of the PKK & YPG lethal arsenal will enable tangible policy recommendations for Turkey's counterterrorism strategy.

Our first policy recommendation focuses on countermeasures against specific weapon categories. For example, the necessary measures against the MANPADS threat are different in their scope and operational aspects, compared to strategies aimed at PKK's developing drone program. Precisely for this reason, in the following sections, we provide tailor-made political-military and counterterrorism intelligence recommendations.

Another complementary analytical framework not covered in this report, as it is beyond the scope of this particular study, remains the mapping of the origin and supply chains of these weapon systems. Overall, the PKK & YPG's arsenal is fed by three different supply channels. The first important route is assistance by state actors. The United States has supplied weapons to the YPG / SDF in its fight against the ISIS threat.¹Other countries such as Iran, Syria, and Russia have also provided weapons to the PKK. The second categorical source is international arms trafficking and the illegal sale of weapons. Thirdly, regional instability leads to new capabilities as nation-state inventories get out of control in times of political unrest. Developments in Iraq and Syria are textbook examples of this phenomenon, as multiple terrorist groups have captured and used conventional military arms throughout the conflict from the arms caches.

This report also sheds light on the potential Turkish foreign and defense policy initiatives. The foremost of these would revolve around bilateral and multilateral diplomacy efforts. Counterterrorism is already a key pillar in Ankara's foreign policy. However, Turkey can further enhance its consultations with its partners upon the concrete OSINT-based evidence. In addition, this EDAM report, based on transparent and referenced facts, may advance the debate by informing a broader strategic audience in certain countries that have been unresponsive to Turkey's demands in the fight against terrorism.

Turkey needs more proactive diplomacy efforts in its relations with the United States. Ankara must demand transparency regarding the anti-ISIS armament program, a promise Washington made several years ago. Additionally, there has to be an emphasis on implementing a comprehensive program to reclaim the weapons / weapon systems provided to the YPG. Washington's willingness to meet Turkey's demands will strongly be correlated with the stance of the Turkey-US relationship.



As part of its counterterrorism efforts, Turkey can benefit from NATO as a multilateral political platform. The Alliance defined terrorism in its Strategic Concept of 1999 as a threat that affects the Allies' collective security. Since then, NATO's framework has evolved with respect to both the doctrine and institutionalization of the fight against terrorism. The NATO 2030 Report ,² while providing recommendations on the future of NATO, emphasized that the fight against terrorism should have a bigger weight within the Alliance. Turkey reaffirms the fight against terrorism, as a mission with more political support. Therefore, NATO needs an in-house mechanism where Turkey can easily express its expectations from the Alliance. However, the sustainability of such an effort at the multilateral level depends on participatory intelligence sharing. We believe that this is where EDAM's OSINT report can play a foundational role. As the examples of Afghanistan, Iraq, and Syria showcased, vulnerabilities caused by civil wars and regional political instability lead to the emergence and spread of extremist networks. Therefore, such dynamics enable the flow of arms to violent groups that threatens NATO's collective security just like Turkey's national security at large. It is now possible to use this report and future complementary OSINT studies to better inform the international strategic community.

Sinan Ülgen Director // EDAM

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#### **EXECUTIVE SUMMARY**

- The PKK & YPG terrorist network is entering a new phase of "hybrid warfare" in terms of its armed capacity. This new trend poses a significant threat to Turkey's national security. The terrorist organization is likely to develop an asymmetric combat capability akin to the Lebanese Hezbollah or Hamas, except for these groups' tactical ballistic missiles and heavy rocket arsenals.
- In particular, the YPG & PKK's man-portable air-defense systems (MANPADS), anti-tank guided missiles (ATGM), and mini-unmanned aerial vehicles pose severe threats to conventional formations.
- A thorough monitoring of regional conflict and armament trends is critical to address the threat at its source. Turkey needs to prevent the PKK terrorist organization from acquiring further gamechanging weaponry such as the RPG-30 anti-tank rocket launchers or SA-25 Verba MANPADS.
- In the early 1990s, with the First Gulf War, Saddam Hussein's forces lost control over an important share of their arsenal which led to a drastic increase in the PKK's combat capacity. A similar situation emerged more recently during the Syrian Civil War. Besides the loss of control by the Syrian Arab Army, the Syrian Mukhabarat has systematically provided arms to the PKK for decades.
- Illegal arms flowing into Syria and the weapons transferred to groups that have organic ties to the PKK have further deteriorated the security situation. The weapons seized during Operation Claw-Lightning & Thunderbolt in Iraq provide significant evidence showcasing the trans-border characteristics of the PKK & YPG's arsenal.
- PKK's terrorist activity in the 1990s triggered a systemic transformation in Turkey's military capacity. The Turkish Armed Forces' doctrinal order of battle has transformed from the Cold Warera's bulky, division-based structure into a more flexible structure centered on brigades. At the time, Turkey also introduced air-mobile and mountain commando units, attack helicopters, formed and effectively used special forces, and carried out systematic cross-border operations, which, overall, led to military success in the 1990s. However, hybrid warfare and terrorism environment of the 21st century is significantly different from the low-intensity conflict battlegrounds of the 1990s.
- To tackle the emerging national security threat, Turkey must prioritize the following strategic frameworks:
- A) Adopting a specific strategy targeting the PKK terrorist network's critical capabilities and requirements.
  - B) Targeting the game-changer weapon systems and supply networks of the YPG & PKK plot,
  - C) Defeating the PKK's drone program.
- Thorough monitoring of regional conflicts will remain critical for coming decades. A smart analysis of the 2006 Lebanese Hezbollah-Israeli Defense Forces conflict would have, for instance, left little room for surprise in Syria for Turkish decision-makers. Turkey needs to develop a comprehensive strategic analysis & open-source intelligence capacity to address similar problems in the future.



# IN THE SHADOW OF GUNS

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# THE PROBLEM OF THE PKK ARMAMENT: GEOPOLITICAL AND MILITARY-STRATEGIC FRAMEWORK

By the end of the last century, the PKK terrorism gained more freedom of movement in Northern Iraq and as to its operational capacity on Turkish soil. These developments occurred due to three main factors: the Iran-Iraq war, the Anfal Campaign and the First Gulf War.

At the time, the PKK had gained strategic depth, found a safe-haven where it could take refuge when it suffered heavy losses. In the early 1990s, Ankara faced Iraq producing instability, and the PKK took this opportunity rooting itself deep in the mountainous northern frontier of the country.

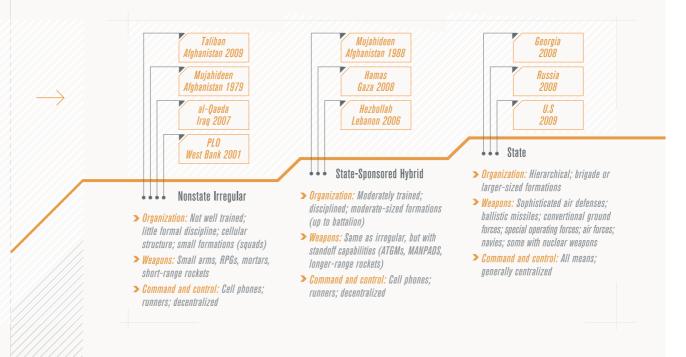
The operational capacity of the PKK increased as Soviet-era weapons spread to the black market, and the inventory of Saddam Hussein's forces in the aftermath of the Gulf War was left untraced. Senior Turkish commanders of the period stated that "the PKK has reached an abundance of weapons that it has never seen before".<sup>3</sup>

## PKK TERRORISM AND HYBRID WARFARE CAPACITY BUILDING EFFORTS



A 2010 RAND Corporation report examining the performance of the Israel Defense Forces in the Lebanese and Gaza theaters broke down the IDF's campaigns into operational design, actor types, and arsenal segments. The report reveals that asymmetrical groups conducting irregular warfare in low-intensity conflicts generally use short-range rockets, light weapons, early generation RPGs, and portable mortars. When the basic parameters of the armed conflict environment shift from low-intensity conflict to hybrid warfare, unconventional actors acquire game-changer capabilities. These include advanced rockets, anti-tank guided missiles (ATGM), and man-portable air defense systems (MANPADS).<sup>4</sup>





The PKK is still far from missile and heavy rocket capabilities comparable to those in the hands of Hamas or the Lebanese Hezbollah. However, the PKK's lethal arsenal has developed into a critical phase of hybrid warfare capabilities mainly in three segments - MANPADS, anti-tank weapons, and mini-unmanned aerial vehicles.

## MAN-PORTABLE AIR DEFENSE SYSTEMS (MANPADS)

MANPADS pose significant threats to aircraft below 10-15 thousand feet, especially against rotary-wing platforms and fixed-wing aircraft traveling at low speeds, as well as commercial aviation. The PKK used first-generation MANPADS (e.g., SA-7 Strela) in the 1990s and gained second and third-generation (e.g., SA-16 and SA-18) MANPADS capabilities throughout the Syrian Civil War. Second-generation MANPADS (i.e. the Chinese-made FN-6) include advanced features such as flare counter-measures and other filters, increasing the chances of hitting targeted aircraft. Third-generation MANPADS, such as the SA-18, search broad bands and work on the 'shape' of the target platform, along with advanced flare & decoy counter-measures.<sup>5</sup>



First-generation MANPADS guidance systems such as SA-7 have limited target acquisition capacities, as they can approach targets only through a certain angle. Unlike their first-generation predecessors, second-and third-generation MANPADS, such as the SA-16 and SA-18, benefit from more sophisticated guidance and target acquisition systems.



SA-7B MANPADS trigger mechanism seized from the PKK during the Operations Claw-Lightning and Thunderbolt <sup>6</sup>



SA-18 MANPADS seized from the PKK during 2018 Operation Olive Branch. A system of the same type was previously used in the downing of a Turkish attack helicopter.<sup>7</sup>

The fourth-generation MANPADS are much more advanced than their predecessors. The Russian-made Verba (SA-25) is highly effective against unmanned aerial vehicles with lower thermal traces, as well as deceptive countermeasures. Open-source reports suggest that Verba has also been integrated into air defense networks, enabling personnel to track beyond sight through information projected onto the operator's helmet.

) Ib

Republic of Turkey Ministry of National Defense, https://www.msb.gov.tr/SlaytHaber/1452021-60458, Retrieval Date: 6 June 2021.

Anadolu Ajansı, https://www.aa.com.tr/tr/gunun-basliklari/afrinde-hava-savunma-fuzesi-ele-gecirildi/1052257, Retrieval Date: 6 Haziran 2021.

For related MANPADS capabilities see İlgili MANPADS yetenekleri için bkz. KBM, https://www.kbm.ru/en/production/pzrk/803.html, Erişim Tarihi: 5 June 2021.



#### ANTI-TANK GUIDED MISSILES (ATGM) AND OTHER ANTI-TANK WEAPON SYSTEMS

As regards to modern hybrid warfare trends, advanced anti-armor and anti-tank systems pose significant challenges to conventional formations and can inflict high casualties.

The PKK & YPG terrorist network has benefited from the spread of the Syrian Arab Armed Forces arsenal, as well as the proliferation of Soviet-Russian anti-tank missiles and other anti-tank weapons. Furthermore, the YPG received some of Western anti-armor weaponry under anti-ISIS efforts. Some of these arms were directly transferred to the core-PKK ranks in northern Iraq, and even Turkey.

The threat of anti-tank guided missiles in the Syrian battle-space is higher than almost anywhere else in the world. Overall, these systems have an effective range of up to about five kilometers. They are survivable due to their small size and mobility. Militant groups use anti-tank systems to attack a wide range of targets, from armored vehicles to military bases or outposts. In addition, conflict data from Syria reveals that attacks with guided anti-tank missiles have been frequent in residential areas, deployed in high-ground relative to the target.

Open-source evidence indicates that the PKK & YPG arsenal includes a wide variety of weapon systems in kind. For example, the YPG received the US-made BGM-71 TOW ATGMs, and the PKK acquired and used the system. In addition, the terrorist network received or probably captured the Soviet-Russian-made 9M113 Konkurs (AT-5) ATGM from the Syrian Arab Armed Forces or other armed opposition groups.



The image shows some of the weapons seized from the PKK & YPG Terrorist Organization in Azez, Syria.

Among the seized weapons, two TOW ATGMs are of great importance. 10



Along with the Syrian Civil War, the PKK & YPG benefit from illegal arms trafficking as another major source for armament. The terrorist network acquired former Yugoslavian-made M79 OSA anti-tank weapons, most probably from black markets.

At the beginning of the Syrian Civil War, the M79 OSA 90mm anti-tank launchers were spotted in the hands of armed opposition groups. Open-source evidence suggests two potential supply routes for the transfer of the system to non-state groups. The first one is via Croatia, which was not yet a member of the E.U. at the beginning of the civil war and had the abovementioned weapons in its arsenal. The second potential source is Libya, as irregular groups captured the Libyan military's arms after the collapse of the Gaddafi regime. During the Syrian Civil War, the PKK & YPG probably seized some of these weapons.

PKK & YPG Militants Carrying Former Yugoslavian M79 90mm Anti-Tank Weapon. 12



Military Times, https://www.militarytimes.com/news/pentagon-congress/2017/05/10/us-weapons-will-soon-flow-to-kurds-as-they-isolate-isis-fighters-in-raqqa/, Retrieval Date: 6 June 2021.



One of the critical arms recently obtained by the PKK & YPG is the AT-4 anti-tank weapon. Although not in the same league with more advanced Russian and US-made guided anti-tank missiles (ATGM), the AT-4 can be very effective in the hands of an asymmetric actor. The U.S. assistance to the YPG prior to the Raqqa campaigns already included TOW ATGMs to counter VBIEDs and maneuver platforms used by ISIS.<sup>13</sup> The AT-4, thus offered a light and complementary capability in addition to heavier ATGMs.

The AT-4 family, with Swedish and U.S. variants, is an 84mm effective infantry-support weapon against standard armored platforms. Compared to guided anti-tank missiles, the unit cost is low, and the launchers can easily be carried and operated by the personnel. With the new variants (e.g., the US CS – confined space-variant), the probability of recoil and unintentional damage to the operator and friendly surroundings is considerably reduced. Thus, the AT-4 CS variant has become more suitable for use in residential areas, with its more advanced aiming systems.<sup>14</sup>





Turkish security forces seized the weapons in the visual from the PKK during the Operations Claw-Lightning & Thunderbolt. <sup>15</sup> Indicated by the Arrow Sign on the left is the AT-4 Anti-Tank Weapon.



AT-4 anti-tank weapons seized from the PKK Terrorist Organization in Hakkari rural during a counter-terror operation <sup>16</sup>

Military Times, https://www.militarytimes.com/news/pentagon-congress/2017/05/10/us-weapons-will-soon-flow-to-kurds-as-they-isolate-isis-fighters-in-raqqa/, Retrieval Date: 6 June 2021.

For a detailed assessment see Charlie Gao, "You're Toast: These Old Rocket Launchers Still Pack a Nasty Punch", The National Interest, Nisan 2021, https://nationalinterest.org/blog/reboot/youre-toast-these-old-rocket-launchers-still-pack-nasty-punch-181595, Retrieval Date: 6 June 2021.

Ministry of National Defense, https://www.msb.gov.tr/SlaytHaber/752021-58513, Date of Retrieval: 6 June 2021.

https://twitter.com/CalibreObscura/status/1265230805288263682/photo/1, Retrieval Date: 6 June 2021.



#### MINI UNMANNED AERIAL VEHICLES

We have assessed the PKK's drone program, along with its significance for the terrorist network, in our previous publications;

"While the PKK used rotary-wing (quadcopter/multi-copter) drones since 2016, the group has also attempted attacks with fixed-wing, glider-type hull platforms. In addition, the PKK tried GPS-based automated navigation for mini UAVs to avoid remote controllers and risk of defeat by jammers. Rotary-wing quadcopter/multi-copter platforms and fixed-wing, glider-type UAVs have different ammunition drop-off speeds/angles and cruise speeds. Therefore, new threat parameters are more dangerous, especially in the long run. The terrorist organization is likely to develop more coordinated operational concepts in the use of drones. The recent examples are the attacks in Şırnak during the November 10, Ataturk commemoration events, (at least 1 UAV), the 23rd Infantry Division Command (2 UAVs), Kayatepe Base Area (1 UAV was shot down before reaching the target), Aydoğdu Base Area (1 UAV), Hamittepe Base Area (1 UAV) and 3 UAVs in the countryside. The Turkish press states that the attacks under investigation took place between 09.05 and 09.15 in about 10 minutes. In addition, Turkish security forces averted three more drone attacks in Şırnak just before 2019 New Year's Eve. Finally the timing and the targeted locations reveal the strategic intentions of the PKK terrorist organization.<sup>17</sup>







Fixed-wing drone of the PKK terrorist organization, landed in Şırnak Governor's Office on November 10, 2018, Atatürk Commemoration Ceremonies <sup>19</sup>

<sup>18</sup> Ibid. p3.

<sup>19</sup> Ibid. p4.



# COUNTERMEASURES AND STRATEGY: POLITICAL-MILITARY FRAMEWORK AND POLICY RECOMMENDATIONS

Turkey should take comprehensive and multifaceted measures regarding the categories of weapons identified through OSINT data in this report. PKK's MANPADS require a special countermeasures roadmap, while the PKK's arsenal of drones require sophisticated containment steps. This section presents our recommendations to counter the PKK & YPG armament trends emphasized in this report.

Firstly, Turkey should demand more transparency from the U.S. concerning the anti-ISIS armament program, as Washington previously promised to provide. Ankara should seek more effective diplomatic steps towards implementing a concrete and comprehensive program to retrieve the weapon systems provided to PKK-affiliated groups. The future of the US-YPG relationship and the extent to which Washington will meet Ankara's demands are likely to be shaped by the Turkish-American ties.

#### COUNTERING PKK & YPG MANPADS CAPABILITY

• As to MANPADS capabilities, the most critical components include T.B. (thermal battery) for first-generation systems and BCU (battery coolant unit) for more advanced systems. These sub-systems are crucial for the operability of MANPADS. In addition, these sub-systems are the components that are most affected by environmental conditions.





SA-7A and T.B. system 20





SA-18 and BCU system <sup>21</sup>



- Although some terrorist organizations and irregular groups try to develop different solutions (car and motorcycle batteries, etc.), such efforts do not always work efficiently.
- MANPADS dynamics have a critical place in the arms market. The first obstacle to creating a comprehensive database is that countries like Iran and North Korea are not transparent in reporting their MANPADS transactions. Secondly, these countries do not always declare missiles and sub-systems as part of arms transfers. Third, information on Iranian systems manufactured under Chinese license remain blurry and insufficient. Lastly there is the lack of sufficient data provided by the former Eastern Bloc manufacturers (i.e., MANPADS spare parts transfer from Bulgaria to the Arab Republic of Egypt). The industrial potential of former Warsaw Pact members, which is assumed to be inactive, is also remarkable.
- Since Soviet-Russian weaponry forms the backbone of the Syrian Arab Army's MANPADS arsenal, monitoring the transactions between the Baath regime and the PKK remains critical for Turkey's national security. Armenia, another client of the Russian MANPADS and a country enjoying ties with the PKK, also looms large in this respect.
- Tracking worldwide MANPADS proliferation and transfers remain essential for the Turkish counter-terrorism strategy. Open-source reports indicate that there are 17,000 MANPADS in Syria and 9,000 MANPADS in Iraq.<sup>22</sup> The strategic surveillance should extend to third parties, such as North Korea, who sells arms to PKK-supporting states in the Middle East. OSINT evidence suggests that the Syrian Arab Armed Forces and the Armenian Armed Forces have procured 4th Generation Russian Verba MANPADS. In the case of Syria, deliberate transfer of such systems to the PKK terrorist organization or the prospects of Syrian military losing its grip on these game-changer weapons, will continue to be a potential threat.
- The most common type of MANPADS on the black market is the SA-7 and its variants. Non state entities have acquired and used advanced systems such as SA-18, SA-24 in various locations including Somalia, Libya and Afghanistan.<sup>23</sup> Therefore, counterterrorism intelligence needs constant updates and adaptation to the evolving threat environment.
- Turkish authorities should prioritize mapping the MANPADS supply chain of the PKK terrorist organization.



#### COUNTERING PKK DRONE PROGRAM

- PKK's drone program goes beyond the tactical 'use of drones', and the terrorist network constantly develops new concepts.
- On May 19, 2021, the PKK attempted to attack the 8th Main Jet Base Command in Diyarbakır, using commercial UAVs. On the same day, 23rd Infantry Division Command in Şırnak and the UAV Base Command in Batman have also been targeted by drones. The Ministry of National Defense declared no casualties at the bases, while the security forces have intensified their anti-drone measures.
- PKK's UAVs now enjoy multifrequency cards, probably used to avoid being intercepted by antidrone systems.<sup>24</sup> The level and use of the technical improvements indicate professional assistance to the terrorist organization in developing its drone program. In addition, the PKK has used the Mahmur Camp in northern Iraq to build its drone capacity in recent years.<sup>25</sup>
- To counter the PKK's drone program, Turkey should prioritize the following:
  - A) Mapping and destruction of system & sub-system supply lines,
- B) Identification of militants with critical knowledge and technical skills,
- C) Revealing and deterring foreign service assistance, if there is,
- D) Investing in anti-drone systems with hard-kill & soft-kill capacity, especially for troops, facilities, and elements operating across borders and located in critical areas.

#### COUNTERING ATGM AND OTHER ANTI-TANK CAPABILITIES

- The conflict patterns between the Israel Defense Forces and Lebanese Hezbollah in 2006 indicated the extent of the threat posed by anti-tank systems. Reports on the 2006 war reveal that 30 of Israel's 114 casualties were tank crews, at least 48 Israeli tanks and armored vehicles were hit, and 13 Merkava tanks were destroyed. <sup>26</sup>
- After the Israel-Hezbollah war in 2006, the future of tanks and armored vehicles in the 21st century battlefields has become a topical question among strategic community. Defense industries have developed active defense systems, modular design philosophies, and new sensor technologies to address the threat.<sup>27</sup>
- For Turkey, 2016 Operation Euphrates Shield, and its aftermath, demonstrated the challenges posed by the new security landscape. After the losses against terrorist organizations PKK & YPG

Defence IQ, https://www.defenceiq.com/armoured-vehicles/articles/how-is-armoured-vehicle-survivability-changing, Retrieval Date: 6 June 2021.

<sup>25</sup> Sabah, https://www.sabah.com.tr/gundem/2018/11/15/pkknin-drone-ussu-mahmurda, Retrieval Date: 7 June 2021.

Matt M. Matthews, We Were Caught Unprepared: The 2006 Hezbollah-Israeli War, U.S. Army, Combined Arms Center Combat Studies Institute Press Fort Leavenworth, 2008, p.64.



and ISIS, the Turkish defense sector, under the leadership of Aselsan, started an active protection system program in cooperation with Ukraine. These systems with hard-kill (physical destruction) and hard-kill & soft-kill (functional destruction) capabilities (Pulat, Akkor) will significantly benefit Turkish armored platforms. 28

 Nevertheless, lessons learned from recent conflicts show that active protection systems do not always provide a definitive solution. Offensive weapon systems with new designs aim to defeat tank and armored vehicle countermeasures. For example, the RPG-30, the latest of the Russian defense industry, fires a 42mm deceptive ammunition to deceive the active protection systems before firing the main ammunition with a tandem warhead.<sup>29</sup> The RPG-29, the predecessor of the RPG-30, was effective against some platforms of the Merkava family, Israel's main battle tank, in the 2<sup>nd</sup> Lebanese war.<sup>30</sup> Some reports suggest that the PKK terrorist organization already possesses the RPG-29, and some Israeli sources claimed that Lebanese Hezbollah acquired the RPG-30.31 The claim in question, which has not yet been verified with OSINT data, strengthens the possibility that the irregular groups in the Syrian battlefield may acquire the RPG-30s soon.



RPG-30 32

- Another way to defeat active protection systems is to 'saturate' the system with multiple threats to overwhelm its capacity.
- Given the abovementioned discussion, Turkey should pursue a pro-active military policy to disrupt the anti-armor capabilities of the PKK & YPG terrorist network. This military policy has to be augmented by a thorough diplomatic outreach to prevent further anti-tank weaponry transfers to the violent group.

Aselsan, https://www.aselsan.com.tr/456db1db-e35c-4c89-bc7e-e29e6db3e07a.pdf, Retrieval Date: 6 June 2021; Aselsan, https://www.aselsan.com.tr/8677a6cc-8163-4a7e-88c4-21b9a6fc0431.pdf, Retrieval Date: 6 June 2021

Business Insider, https://www.businessinsider.com/russia-rpg-threat-to-modern-nato-tanks-2017-6?r=US&IR=T, Retrieval Date: 6 June 2021.

Haaretz, https://www.haaretz.com/1.4860368, Retrieval Date: 6 June 2021.

Israel National News, https://www.israelnationalnews.com/News/News.aspx/153102#.T0icm\_WAna8, Retrieval Date: 6 June 2021.

<sup>31</sup> 32 WIRED, https://www.wired.com/2008/11/russia-unveils/, Erişim Tarihi: 6 Haziran 2021.



# ARMORED PLATFORMS AND LAND VEHICLES

VISUAL	TYPE	SOURCE
	HUMVEE (M1115)	https://www.dailymotion.com /video/x7ml8mp
estronice ABD no verdiu reinerina eractus train n		https://mobile.twitter.com/De fenseUnits/status/90894272 9849094144
	M1117 Guardian	https://www.defenseworld.net /news/18390/US_Supplies_M1 17_Guardian_Armored_Vehicl es_To_Anti_AssadAnti_ISIS _Militia#.YEnu65Mza3I
	IAG Guardian	https://medium.com/war-is- boring/us-beefs-up-military- supplies-to-syrian-militia- 8d75e58c4416
	BTR 60PB	https://twitter.com/oryxspioe nkop/status/7275740035823 90272
640404	BTR-80*  *Probably used by Russian Military Police, BTR-80 is seen in YPG inventory, also captured by the Free Syrian Army from PKK & YPG elements in Syria	https://twitter.com/oryxspioe nkop/status/97151782483236 0449
	Lenco Bearcat G2	https://twitter.com/CivilWarM ap/status/87999834478920 0896?s=20



	TYPE	SOURCE
	ZSU-23-2 (low-altitude air defense & high performance against land targets)	https://twitter.com/AntiAircra ftBro/status/11828796341925 15072?s=20
	BMP-1 Infantry Fighting Vehicle	https://twitter.com/oryxspioe nkop/status/9678597448232 26369
	MT-LB	https://tr.topwar.ru/96644- podelki-kurdskih-opolchencev- modernizaciya-bronetehniki-v- severnoy-sirii.html
	BRDM-2	https://tr.pinterest.com/pin/4 66474473880696993/
god	Fath Safir Jeep with 106mm GTT	https://twitter.com/metesoht aoglu/status/962384665079 353344/photo/1
	Infantry fighting vehicles modified/customized with 12.7mm W85 and 14-5mm KPV over T-55 tank frame	https://twitter.com/oryxspioe nkop/status/932990348808 327169



# TANKS

VISUAL	TYPE	SOURCE
	T-55	https://tr.topwar.ru/96644- podelki-kurdskih-opolchencev- modernizaciya-bronetehniki-v- severnoy-sirii.html
	T-72	https://www.ibtimes.co.uk/syr ia-kurdish-women-fighters- commandeer-tank-battle-over- menagh-air-base-1543352
	T-62	https://twitter.com/200_zoka /status/1348625994480025 605/photo/2

# OTHER LAND VEHICLES

VISUAL	TYPE	SOURCE
TOYOTA	Toyota Hilux	https://commons.wikimedia.or g/wiki/File:Kurdish_YPG_Fight ers_(11486086916).jpg
	Toyota Land Cruiser	https://ekurd.net/kurdish- forces-withdraw-serekaniye- 2019-10-20



# MORTARS

VISUAL	TYPE	SOURCE
	Mortar 60mm	https://www.msb.gov.tr/Slayt Haber/2472020-61385  https://www.aa.com.tr/tr/turk iye/pence-yildirim- operasyonunda-cok-sayida- silah-muhimmat-ve-orgutsel- dokuman-ele-gecirildi/2235611
	Mortar 120mm	https://www.aa.com.tr/en/am ericas/us-mortars-found-in- terrorist-ypg-pkk-arsenal-in- syria/1635220#
	Mortar 82mm	https://twitter.com/teroretavi zyok_/status/870989346257 743872
	Mortar 81mm	https://twitter.com/teroretavi zyok_/status/1007899310942 507008 https://www.aa.com.tr/tr/turk iye/pence-yildirim- operasyonunda-cok-sayida- silah-muhimmat-ve-orgutsel- dokuman-ele-gecirildi/2235611



# ANTI-TANK WEAPONS AND FIRE-SUPPORT WEAPONRY

VISUAL	ТҮРЕ	SOURCE
	RPG-7 Variants and Iran-made ammunition	https://armamentresearch.co m/kurdish-ypg-forces-with- iranian-tandem-heat-rpg-7- projectile/ https://twitter.com/CalibreOb scura/status/1378327875527
	RPG-7V	528452?s=20 https://silahreport.com/2020
	(reported to be Bulgaria-made)	/08/27/northern-iraq-pkk- weapon-caches-of-operation- claw-tiger-miles-check-this/
	Type 69 RPG (Soviet RPG-7 China variant)	https://www.flickr.com/photo s/kurdishstruggle/154736847 31/
		https://www.pinterest.fr/pin/ 295126581813171506/sent/?in vite_code=2e3de8000b5f4c3 791129a6a802a1d1f&sender=6 53866577057572491&sfo=1
	9M111 Fagot Soviet-Russian made ATGM	https://twitter.com/CalibreOb scura/status/1337321605706 473472



VISUAL	TYPE	SOURCE
	AGS-17 Grenade Launcher	https://twitter.com/CalibreOb scura/status/1184747935898 263552/photo/2
	9M113 Konkurs ATGM	https://www.aa.com.tr/tr/turk iye/pyd-pkk-kirikhana-rus- antitank-fuzesiyle-saldirmis- /1050802  https://twitter.com/CalibreOb scura/status/1371585650483 429380?s=20
	BGM-71 TOW ATGM	https://www.dailysabah.com/ politics/war-on-terror/turkish- stf-units-seize-ypgpkk- terrorists-explosives-in-syria  https://twitter.com/CalibreOb scura/status/1375812508343 226368/photo/2  https://www.aa.com.tr/tr/dun ya/teror-orgutu-ypg-pkk-abd- yapimi-anti-tank-fuzesiyle-oso- ya-saldirdi/1360912
	M136 AT4 84mm	https://twitter.com/CalibreOb scura/status/1265230805288 263682/photo/1



VISUAL	TYPE	SOURCE
	BM-21 Grad Rockets	https://twitter.com/SonKaleT urkiye2/status/97708127909 8294274
AAA	Mk 19 Grenade Launcher	https://www.haberler.com/gu venlik-uzmani-agar-ypg- armasina-degil-silaha-8475678- haberi/
	RBG-6 Grenade Launcher	https://twitter.com/CalibreOb scura/status/1294607963194 351616?s=20
	MILAN ATGM	https://www.youtube.com/wa tch?v=H5yEAljxBdU#t=130



VISUAL	TYPE	SOURCE
	PG-7T 40mm ammunition for RPG-7 variants	https://www.conflictarm.com/downloadfile/?report_id=256 8&file_id=2574
	9M28F 122mm Grad MLRS	https://twitter.com/CalibreOb scura/status/1184769786032 611328?s=20
	Soviet-Russian 23mm Anti-Aircraft Gun variants / 23 x 152mm 2A7/2A7M	https://silahreport.com/2020 /08/27/northern-iraq-pkk- weapon-caches-of-operation- claw-tiger-miles-check-this/
	9K111 Fagot Soviet-Russian ATGMi* *PKK & YPG terror propaganda Video	https://twitter.com/CalibreOb scura/status/1278698962053 214208?s=20
	Bulgaria-made PG-7VL and PG-7VT ammunition for RPG-7 variants	https://twitter.com/CalibreOb scura/status/1190334961599 037440/



VISUAL	TYPE	SOURCE
	SPG-9 73mm recoilless gun and OG9V ammunition	https://www.hurriyet.com.tr/g undem/hakkaride-pkkya-agir- darbe-agir-muhimmat-ele- gecirildi-41702569 https://twitter.com/CalibreOb scura/status/11837315893579 53024/
A A	M79 Osa	https://twitter.com/EliotHiggi ns/status/5161741364363550 72
FEM	METIS M-1 (AT-13) Russian-made ATGM	https://www.aa.com.tr/tr/turk iye/mardinde-metis-m1-fuze- atesleyicisi-ele-gecirildi/744029
	RPG-7 variants AT-5 (9M113 Konkurs) Soviet-Russian ATGM	https://www.msb.gov.tr/Slayt Haber/11122020-11445



VISUAL	TYPE	SOURCE
TE. VAN VALLIGI LA LANDARNA KONUTANLISI	Type-69 China-made RPG (DZGI-40)	https://twitter.com/war_noir/ status/13276954096204062 72?s=20
	PG-7-AT Iran-made RPG ammunition	https://twitter.com/AnalystMi ck/status/127938116519185612 8?s=20
T.C. VAN VALLIĞI  L JANCARKA KOMUTANLIĞI	PG-7V and PG-7VM warheads for RPG-7	https://twitter.com/war_noir/ status/13276954096204062 72?s=20
	Type-63 107mm MLRS	https://twitter.com/CalibreOb scura/status/11837315893579 53024
	RPG-27 Tandem HEAT	https://twitter.com/CalibreOb scura/status/1190334961599 037440



# MANPADS

VISUAL	TYPE	SOURCE
	SA-7 and Strela series MANPADS variants	https://www.indyturk.com/no de/354476/haber/akar%C4 %B1n-dost-bildi%C4%9Fimiz- baz%C4%B1-%C3%BCIkeler- pkkya-f%C3%BCzeler-verdi- s%C3%B6z%C3%BCn%C3% BCn-arkas%C4%B1ndaki-mesaj
	9K38 Igla (SA-18)	https://www.washingtonpost. com/news/worldviews/wp/20 16/05/14/kurdish-militants-just- challenged-turkish-air-power- in-a-major-way/
	SA-16 Igla	https://www.aa.com.tr/tr/turk iye/pence-yildirim- operasyonunda-cok-sayida- silah-muhimmat-ve-orgutsel- dokuman-ele-gecirildi/2235611  https://twitter.com/ozkok_a/s tatus/862342016390356992

# OTHER

VISUAL	TYPE	SOURCE
	VS-50 anti-personnel land mine	https://twitter.com/CalibreOb scura/status/1372298766523 437063



VISUAL	ТҮРЕ	SOURCE
	ACOG 4x32 Rifle Scope	https://twitter.com/CalibreOb scura/status/1360889048106 217473?s=20
	Pulsar Digisight N550/760 Thermal & Night Vision Optics	https://twitter.com/CalibreOb scura/status/1360889048106 217473?s=20
	Dedal-T4.642 Thermal Optic	https://twitter.com/CalibreOb scura/status/1287478501063 483392/photo/3
	AKS-74U Meprolight M21 optic	https://twitter.com/CalibreOb scura/status/1363936804794 204160



VISUAL	TYPE	SOURCE
	AN/PAS-13 Thermal Weapon Sight	https://twitter.com/towersigh t/status/8259783548137922 56
	AN/PVS-7	https://twitter.com/calibreobs cura/status/11990082903420 84608
	EOTech Hologram	https://twitter.com/CalibreOb scura/status/118307111686627 3281?s=20
	AN/PEQ-2	https://mobile.twitter.com/cal ibreobscura/status/11990083 31169447936?lang=ar-x-fm



VISUAL	TYPE	SOURCE
	Pulsar Apex XD75 Thermal Weapon Scope	https://twitter.com/CalibreOb scura/status/1204018687444 951041
	GP-30 Grenade Launcher *	https://twitter.com/CalibreOb scura/status/1199009230218 510342/photo/3
	*(Probably from the Russian Federation or Syrian Arab Armed Forces inventories)	
Control Control	SilencerCo Omega 300	https://twitter.com/CalibreOb scura/status/11990167237578 30151
A PART &	AN/PEQ-15 Tactical Target Pointer Device	https://twitter.com/CalibreOb scura/status/11990167237578 30151



	VISUAL	TYPE	SOURCE
		SKA556	https://twitter.com/CalibreOb scura/status/1199009276343 308289/photo/2
3		Dedal-T4.642 Hunter thermal scope	https://twitter.com/war_noir/ status/138698493423821209 7?s=20

# DRONES

VISUAL	TYPE	SOURCE
	RQ-20 Puma	https://www.youtube.com/wa tch?v=CAB8kU6s4g4
	DJI Phantom	https://twitter.com/Acemal71/ status/934849154169352192
	DJI Mavic	https://dronedj.com/2017/11/1 3/dji-mavic-pro-rigged-with- bomb-seized-in-turkey/



	VISUAL	TYPE	SOURCE
-	V.	DJI Matrice 600	https://twitter.com/TarMilus/ status/138817897241708953 8/photo/1
		X-UAV TALON	https://twitter.com/war_noir/ status/133955139305360998 6/photo/1

# OTHER WEAPONS

	TYPE	SOURCE
	7.62/39mm AK-based, a modified rifle with an extended barrel and rifle scope	https://www.youtube.com/wa tch?v=7eZ4MwgViQI https://twitter.com/Southwoo d_/status/915558404499709 952
411	FN FAL	https://www.flickr.com/photo s/kurdishstruggle/255512054 03/



VISUAL	TYPE	SOURCE
A A A A A A	Glock	https://www.hurriyetdailynew s.com/glock-pistols-found-in- pkk-raid-in-southeast-100837
	M15	https://www.sabah.com.tr/du nya/2021/05/15/abdden-garip- m-16-savunmasi
	M16A1 (Colt 603)	https://twitter.com/CalibreOb scura/status/1332634152089 358336/photo/1
	M16 Variants	https://www.sabah.com.tr/gu ndem/2018/03/07/fotokapan- ile-goruntulenen-pkkli-terorist- olduruldu https://www.hurriyet.com.tr/g undem/msb-irak-kuzeyinde- pkkya-ait-silah-ve-muhimmat- ele-gecirildi-41779262



VISUAL	TYPE	SOURCE
	PKS Machine Gun	https://www.aksam.com.tr/fot o-galeri/dunya/abdnin-teror- orgutu-pkkya-verdigi-silahlarin- turkiyeye-karsi- kullanilmasindan-endise- ediliyor/45183/14  https://www.google.nl/amp/s/ www.dailysabah.com/politics/ war-on-terror/turkish-stf-units- seize-ypgpkk-terrorists- explosives-in-syria/amp
	Colt M4 Infantry Rifle	https://www.dailysabah.com/ war-on-terror/2017/06/29/us- sends-120-trucks-of-weaponry- to-pkks-syrian-offshoot-pyd-in- a-week
ن تفتدم على مدور مدينة في المراج	AGS-17 Grenade Launcher W85 Machine Gun	https://twitter.com/CalibreOb scura/status/1184747935898 263552/
	Zijiang M99 Anti-Material Sniper Rifle	https://twitter.com/Delilsoule man/status/87824160667518 1568
	MG3	https://twitter.com/SerioSito/ status/571788520240619521 ?s=20



VISUAL	TYPE	SOURCE
	FN MAG	https://magazine.ufmalmo.se/ 2017/05/1709/
	DShK and DShK Remote-Control Mechanism	https://www.oryxspioenkop.c om/2021/05/facing-storm- pkks-diy-aa-guns.html
	KPV 14.5mm	https://www.oryxspioenkop.c om/2021/05/facing-storm- pkks-diy-aa-guns.html
	NEA PDW-CCS 7.5 Canadian Infantry Rifle	https://twitter.com/CalibreOb scura/status/11885203791633 16225
	AK-47, AKM, AK-74 Rifle Variants	https://twitter.com/war_noir/status/133643733495966515 2/photo/2 https://twitter.com/RojavaNetwork/status/11308535385636 29057
		https://twitter.com/CalibreOb scura/status/13732117687099 06434/photo/3



VISUAL	TYPE	SOURCE
	NSG-1 / CS-LR4 China-made Sniper Rifle	https://twitter.com/CalibreOb scura/status/1294607963194 351616
	AK-104	https://twitter.com/CalibreOb scura/status/1074673015932 231680/photo/1 https://twitter.com/CalibreOb scura/status/1199009276343 308289?s=20
	AK-74M	https://twitter.com/CalibreOb scura/status/1344616248227 864580?s=20
	Type-56	https://twitter.com/AnalystMick/status/1215258274486018048?s=20
	PM md. 63	https://twitter.com/war_noir/ status/137585980045881344 7?s=20
	AMD-63	https://twitter.com/MinsterTX /status/87570060748256461 O/photo/1



VISUAL	ТҮРЕ	SOURCE
	PSL-54C	https://twitter.com/CalibreOb scura/status/1184747935898 263552?s=20
	Golan S-01 (Syria-made, Austria-made Steyr HS-50 clone, anti-material sniper rifle)	https://twitter.com/CalibreOb scura/status/13214791696252 35456?s=20
	Colt Carbine and M4 infantry rifles, Pulsar thermal optic, ACOG rifle scope	https://twitter.com/CalibreOb scura/status/13157184696656 48641?s=20
	GP-30 UGL (grenade launcher), with AK-74 infantry rifle	https://twitter.com/CalibreOb scura/status/1082037396303 155200?s=20



VISUAL	TYPE	SOURCE
	Zagros	https://www.militarytimes.com/ flashpoints/2017/08/17/us- backed-kurdish-fighters-follow-in- footsteps-of-wwii-marine-raiders- with-homemade-sniper-rifle/
	Sako TRG-22	https://twitter.com/analystmi ck/status/12177147337652756 51?lang=en
	SVD Dragunov (KNS)	https://twitter.com/analystmi ck/status/1280904409313132 544
	AN/PAS 13 Thermal Weapon Sight (on SVD Sniper Rifle)	https://twitter.com/towersigh t/status/8259783548137922 56?s=20
	Blaser R93	https://steemit.com/en-us/@yasinakdere/operationolivebranch-operationolivenzweig-german-sniper-rifles-are-in-the-hands-of-pkk-terrorists-what-a-mess-the-west-has-in-4e44821b686a
	Zastava M93	https://www.thefirearmblog.c om/blog/2017/04/21/sdf- forces-modified-zastava-m93/



/news/region/move-against-kurd-rebels-turkey-iran-agenda%E2%80%94-erdogar  CQ 5.56 mm https://www.conflictarm.com/downloadfile/?report_id=256 8&file_id=2574  MK 17 https://twitter.com/CalibreObsscura/status/11990097415923 09761  M249 https://twitter.com/calibreobs
/news/region/move-against-kurd-rebels-turkey-iran-agenda%E2%80%94-erdogar  CQ 5.56 mm https://www.conflictarm.com/downloadfile/?report_id=256 8&file_id=2574  MK 17 https://twitter.com/CalibreObscura/status/11990097415923 09761  M249 https://twitter.com/calibreobscura/status/12102367009344
downloadfile/?report_id=256 8&file_id=2574  MK 17 https://twitter.com/CalibreObscura/status/11990097415923 09761  M249 https://twitter.com/calibreobscura/status/12102367009344
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