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From Low-Intensity Conflict To Hybrid Warfare: MANPADS At The Hands of PKK

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EXECUTIVE SUMMARY

– The downing of a Turkish attack helicopter on May 13th 2016 marks the first time that the Kurdistan Workers' Party (PKK) terrorist organization used an advanced, third-generation man-portable air defense system (MANPADS).

– The introduction of advanced MANPADS into the hands of terrorist organizations operating in Turkey presents considerable challenges to both military and commercial aviation.

– Threats that could be posed to Turkish civilian aviation have already been exemplified during mortar attacks that targeted the second largest airport in Istanbul on December 2015. As such, Turkish policymakers have to reconsider the security paradigm associated with the protection of Turkish civilian and military airfields.

– Turkey's counterterrorism operations, and success, heavily rely on the use of attack helicopters as close air-support platforms, as well as ensuring air-mobility of its elite commandos. Turkey's recent military procurement trends, display the interest of Ankara to enhance its rotary-wing inventory. Thus, the introduction of advanced MANPADS to the battleground may considerably challenge the existing and prospective conventional superiorities of the Turkish Armed Forces against PKK.

– The MANPADS proliferation threat emanates from three underlying factors: regime collapse, lack of control over stockpiles, and state-sponsorship. The Syrian civil war has paved the way for the influx of such systems into Turkey's doorstep.

– The threat landscape that Turkey faces, now at risk of MANPADS proliferation and trafficking, is metastasizing from low intensity conflicts into hybrid warfare, and necessitates an overhauled political-military response and adaptation.

INTRODUCTION

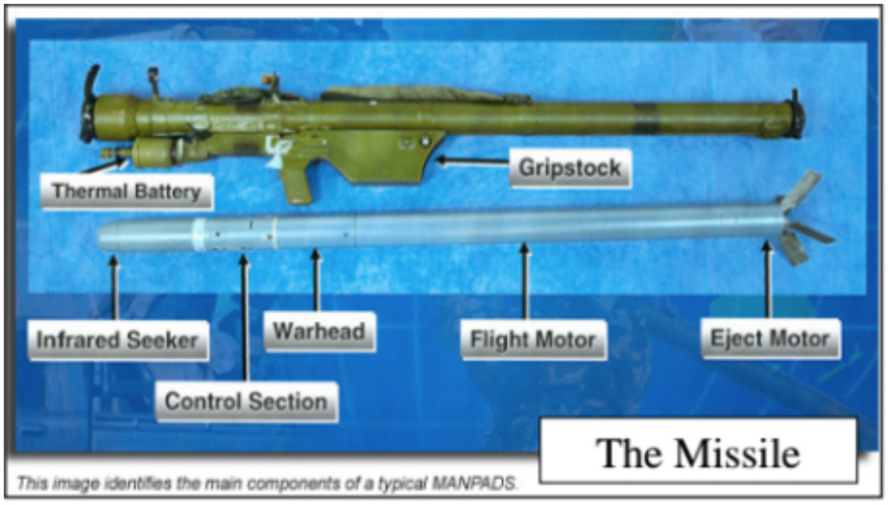
Turkey's escalating clashes with the Kurdistan Workers' Party (PKK) has crossed yet another threshold after the terrorist organization downed a Turkish AH-1W Super Cobra attack helicopter with an advanced SA-18 Russian/Soviet made man-portable air defense system (MANPADS) on May 13, 2016. The incident marked the first time that the PKK used a third-generation MANPADS, which pose significant threats to both military and commercial aviation. Having already had to deal with ISIS' rocket campaign, terror attacks of PKK offshoots in population centers, and an urban low-intensity conflict with the PKK in southeastern Turkey, Turkish security forces may now face a surging threat from the terrorist organization, which may be emboldened by its acquisition of advanced arms. The threat landscape that Turkey faces, now at risk of MANPADS proliferation and trafficking, is metastasizing from low intensity conflicts into hybrid warfare, and necessitates an overhauled political-military response and adaptation.

IMPORTANCE OF PKK'S SA-18 USE

Man-portable air defense systems, known as MANPADS, are lightweight air defense systems designed to protect troops from attacking aircrafts. These relatively low-cost weapons can be carried and deployed rapidly by ground elements (fully assembled 15 – 20kgs and less than 2m in length), and are proven effective especially against slow-flying platforms at low altitudes. Depending on type, MANPADS have an engagement envelope between 10-15,000 ft altitude and 3-7km range. MANPADS are sometimes confused with Rocket Propelled Grenades (RPG), as both are shoulder-launched.[1]

PKK has downed a couple of Turkish helicopters as a part of its terror campaign before.[2] Yet, from a military-tactical standpoint, the SA-18 incident marked a milestone with regards to Turkey's national security.

Above all, this is the first time that PKK used an advanced, third generation MANPADS to target Turkish rotary-wing aviation, as opposed to SA-7 and RPG-7 use in the two previous incidents in 1997 and 2008. First generation infrared (IR) guided MANPADS, such as the Soviet-made SA-7 or the Chinese HN-5, are 'tail chase' assets, which means they must approach the target from behind.First generation MANPADS pursue the hottest thermal signature in the air, thus, they are very susceptible to flares and other factors, even the sunlight.[3] Second generation IR-MANPADS, like SA-14 and SA-16, are more effective against classic flares, they have 'two-color targeting capabilities', and use IR and ultraviolet (UV) for target acquisition.[4] Third generation MANPADS (i.e. SA-18) are mostly flare-proof and "scan multiple color bands and produce a quasi-image of the target".[5]



Basic MANPADS components: **James, C. Whitmire, Shoulder Launched Missiles: The Omnious Threat to Commerical Aviation, Air University, Maxwell Air Force Base, Alabama, 2006**

1 For a comprehensive assessment on MANPADS and references, see: The Australian Government Department of Foreign Affairs and Trade, MANPADS: Countering the Terrorist Threat, 2008.

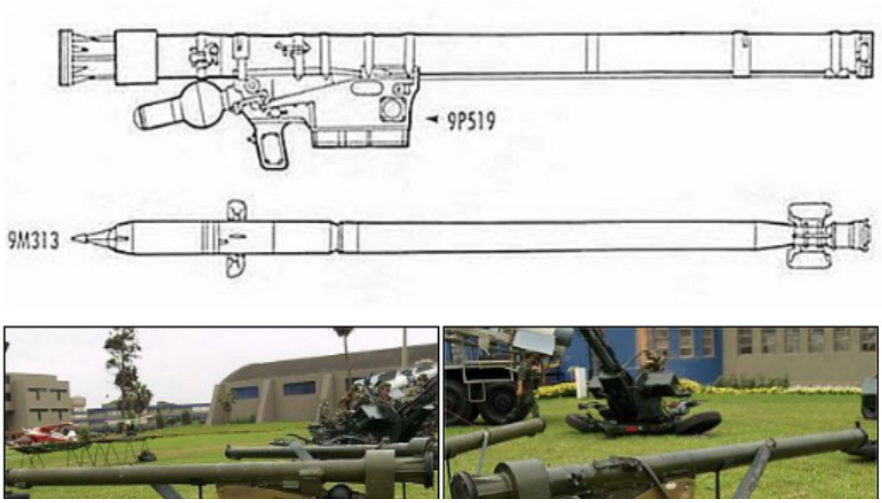
2 http://www.kokpit.aero/cobra-helikopter-kazalari, Accessed on: May 23, 2016.

3 James, C. Whitmire, Shoulder Launched Missiles: The Omnious Threat to Commerical Aviation, Air University, Maxwell Air Force Base, Alabama, 2006, pp. 13-14.

4 Ibid.

5 Ibid.

Without a doubt, PKK's use of a third generation MANPADS is an important indicator that shows the terrorist organization's burgeoning offensive capabilities in the hybrid warfare context. SA-18 has a 4.5km range for approaching and 5.2km range for receding targets respectively. The weapon's maximum operational altitude is around 9-10 thousand feet for approaching helicopters, and around 11.5 thousand feet for receding rotary-wing targets. SA-18 can defeat sophisticated infrared decoys thanks to its dual-channel IR seeker and "advanced FM-tracking target discrimination selection unit".[6]



SA-18 design: *http://www.armyrecognition.com/russia_russian_army_light_heavy_weapons_uk/sa-18_grouse_9k38_igla_man-portable_missile_technical_data_sheet_specifications_description_pictures.html*, **Accessed on: May 23, 2016.**

6 IHS Jane's, Land Warfare Platforms: Artillery & Air Defence, Igla, March 2016.

UNDERSTANDING THE NEW THREAT: PKK'S ADVANCED MANPADS

Militarily, improvements in the Turkish Armed Forces' army aviation capabilities played an important role in Ankara's military success against PKK in the 1990s. At that time, Ankara initiated an important defense modernization program that equipped the Army with air assault and attack helicopter capabilities. By doing so, the Armed Forces has gained robust mobility, flexibility, and close air-support capacity in counter-terrorism operations. Ankara still pursues ambitious rotary-wing modernization & procurement programs. Turkey is procuring 11 CH-47F heavylift helicopters,[7] co-producing its own attack helicopter, T-129, with AgustaWestland,[8] and a multi-billion USD deal for over 100 Sikorsky Black Hawk utility helicopters is in process.[9] Attack helicopter and air-assault operations still play vital roles in Turkey's counterterrorism operations. Furthermore, due to the rising IED threat, air-mobility is gaining an additional value for the Turkish Armed Forces. Notably, since PKK has been shifting towards more urban warfare-driven terrorist tactics, techniques, and procedures (TTP), the MANPADS threat could even pose greater challenges due to easily-concealed fire positions, and the risk of collateral damage in pre-emptively hitting suspected and confirmed targets. Last but not least, presence of multiple MANPADS in high-risk zones of action would also significantly threaten Combat Search & Rescue operations, by putting extra pressure on follow-on rotary-wing platforms carrying special forces. MANPADS also skew the economics of offensive strategies due to the comparative unit cost gap between even advanced man-portable air defenses and modern attack and utility helicopters.

MANPADS also pose a grave danger to commercial aviation and airport security. As the US Department of State noted, between 1975 and 2011, "40 civilian aircraft have been hit by MANPADS, causing about 28 crashes and more than 800 deaths around the world".[10] Al Qaeda's MANPADS attack attempt on the Israeli Arika Airlines in Kenya in November 2002 was alarming, since the plot did not take place in a combat zone or high-risk area. At this point, for Turkish political-military decision-makers' considerations, it would be critically important to note that the rising MANPADS challenge is not a direct threat only for Turkish army aviation, but also for commercial air transportation as well.

First of all, airliners and airports are proven to be attractive targets for terrorists due to media attention, indirect psychological impacts, and follow-on economic devastation effects. And secondly, civilian aircrafts mostly lack countermeasures to counter MANPADS; besides, airline pilots generally lack training and experience against missiles.

Last but not least, illicit trafficking and terrorist use of MANPADS directly threatens VIP transportation security too. In 2006, a C-130 transport aircraft carrying a delegation from the US House Armed Services Committee –which included representatives Rob Simmons, Jeb Bradley, John Spratt, and Neil Abercrombie– was targeted by an SA-18 while flying from Baghdad to Kuwait.[11]

7 Undersecretariat for Defense Industries, http://www.ssm.gov.tr/anasayfa/projeler/Sayfalar/proje.aspx?projeID=99, Accessed on: May 23, 2016.

8 Undersecretariat for Defense Industries, http://www.ssm.gov.tr/anasayfa/projeler/Sayfalar/proje.aspx?projeID=87, Accessed on: May 23, 2016

9 http://www.hurriyet.com.tr/109-sikorsky-turkiyede-uretilecek-40085112, Accessed on: May 23, 2016.

10 US Department of State, http://www.state.gov/t/pm/rls/fs/169139.htm, Accessed on: May 22, 2016.

11 James, C. Whitmire, Shoulder Launched Missiles: The Omnious Threat to Commerical Aviation, Air University, Maxwell Air Force Base, Alabama, 2006, p.5.

MANPADS AND AIRPORT SECURITY

Regarding the abovementioned challenge, a mortar attack, which targeted one of Turkey's major airports, must be a wake-up call. On December 23rd 2015, Sabiha Gokcen airport, Istanbul's second largest airport with an annual traffic of over 28 million passengers in 2015,[12] was rocked with explosions at 02.00 AM. The explosions that at the runway where several planes were parked, resulted in the death of one worker and injured another two, whilst minor damages were reported on 5 planes. Initial speculations of the origin of the explosions focused on 50mm or 60mm mortar attacks due to residue of shells in the area, and the fact that the three explosions occurred in three separate locations roughly 200 meters and 350 meters apart from one another.[13] These speculations were strengthened after the Turkish state news agency Anatolian Agency reported 15 days after the incident that a mortar mount was discovered in the woodlands approximately 2 kilometers away from the airport.[14] Furthermore, Kurdistan Freedom Hawks (TAK) terrorist network, an offshoot of the Kurdistan Workers' Party (PKK), had claimed the attack a few days after the attack and declared that it was the end to the period of inaction that they had begun in 2011.[15] The Attorney Generalship that is running the inquiry for the Sabiha Gokcen attacks has not verified that the explosions were not indeed a result of mortar attacks by TAK, and a parliamentary question in May 2016 regarding the incident was left unanswered citing a confidentiality verdict imposed by a court of peace.[16] Thus while the issue has not been fully disclosed to the public, various news reports, some of which were issued by the state-run Anatolian Agency, strengthen the mortar attack theory.

Luckily the damage has been minor compared to the potential lethality of such an attack had the mortar shells struck occupied planes during taxi – it has even been claimed that the attacks caused no disruption to the airport operations and traffic.[17] After the attack the Minister of Transport, Maritime Affairs and Communications at the time, Mr. Binali Yıldırım, claimed that there were no vulnerabilities with regards to the security of the airport.[18] Still, the ability of terrorists to sneak into two kilometer proximity of the second busiest airport in the country,[19] encounter no resistance, and exit the area undetected (for two weeks) after conducting the attacks suggests that the Turkish government and security agencies should reconsider their security paradigm with regards to civilian airline travel, especially considering the increasing multitude of terror attacks and capable terror groups targeting the country.

12 Sabiha Gokcen airport web page "Airport Traffic Report" accessed on 20 May 2016 at: http://www.sabihagokcen.aero/corporate-info/airport-traffic-report

13 Milliyet (2015, December 24) "Sabiha Gökçen'de korkutan patlama" (Frightening explosion at Sabiha Gokcen)

14 Hurriyet (2016, January 6) "AA: Sabiha Gökçen Havalimanı'ndaki patlamanın nedeni 'havan mermisi'" (Anatolian Agency: The cause for the Sabiha Gokcen Airport explosions: 'mortar shells')

15 Bianet (2016, May 2016) "Sabiha Gökçen Saldırısı Soruşturmasına Gizlilik Kararı Soru Önergesiyle Ortaya Çıktı" (The Secrecy Verdict on the Sabiha Gokcen Inquiry was Uncovered through the Parliamentary Question)

16 Ibid.

17 Hurriyet (2016, January 6) "AA: Sabiha Gökçen Havalimanı'ndaki patlamanın nedeni 'havan mermisi'" (Anatolian Agency: The cause for the Sabiha Gokcen Airport explosions: 'mortar shells')

18 Ibid.

19 Devlet Hava Meydanları İşletmesi Genel Müdürlüğü web page (Republic of Turkey General Directorate Of State Airports Authority) (2016, May) "2015 İstatistikler: Uçak, Yolcu, Yük Serisi Tahminleri: Aralık Sonu" (2015 Statistics: Planes, Passengers, Cargo Estimates: End of December)

The mortar fire-positions in the Sabiha Gokcen Airport Terrorist Attack: *http://www.hurriyet.com.tr/aa-sabiha- gokcen-havalimanindaki- patlamanin-nedeni- havan-mermisi- 40037256,* **Accessed on: May 23, 2016.**

Notably, had the terrorists infiltrated to the mortar fire-positions with a third-generation MANPADS instead, then results might have been catastrophic. The minimum engagement range for an SA-18 is 0.5km for approaching and 0.8km for receding targets respectively.[20] Aircrafts are most fragile during landing and take-off due to low altitude/speed, thereby, they constitute 'lucrative and sensational' targets for terrorist use of MANPADS.

Any attack on commercial airliners would cause dangerous follow-on effects. Airport shut-downs could cost billions of dollars, while the sense of insecurity might cause some companies, or even states, to cancel flights until the security situation is stable. Besides, the Turkish administration has a strategic goal of making Istanbul an aviation hub, and this policy could be seriously affected by MANPADS threats to Turkish airports. Therefore, Ankara should reconsider airport security, and focus on exerting full control over the surrounding areas of Turkish airports. Besides, ground-based counter-MANPADS technologies are also developing. One clear recommendation is for the Turkish Undersecretariat for Defense Industry's prioritized agenda to incorporate a program of airport security systems against MANPADS.

20 IHS Jane's, Land Warfare Platforms: Artillery & Air Defence, Igla, March 2016.

MANPADS PROLIFERATION

The MANPADS proliferation threat emanates from three underlying factors: regime collapse, lack of control over stockpiles, and state-sponsorship.

With respect to regime collapse, Libya sets a notoriously good example. Open-source military reports suggest that Libya had imported around 20,000 MANPADS from the former Soviet Union, Bulgaria, former Yugoslavia, and other states since the 1970s.[21] Following the fall of the Gaddafi regime, thousands of these MANPADS, mostly first-generation Strela variants, were looted from Libyan arms caches. Today, there is tangible evidence to suggest that these weapons were smuggled into Syria, as well as into Egypt via the Sinai route.[22] Likewise, during the Saddam Hussein era, Iraq had procured thousands of SA-7, SA-14, and SA-16 MANPADS. Intelligence estimates suggest that some 4,000 them have remained at large[23] following regime collapse. Finally, following the Russian invasion in Crimea, many MANPADS have gone missing, and the exact types and numbers remain unconfirmed.[24] There is therefore a considerable amount of this material in the black arms markets providing an illicit channel of procurement for violent extremists. MANPADS are available cheaply on the black market. For instance, a first-generation SA-7 could be obtained at some 5,000 USD price, while more advanced MANPADS, such as SA-18, remains around 60,000-80,000 USD unit cost.

As noted, state sponsorship is another important source of MANPADS trafficking. For instance, as recently as 2013, Iran was accused of transferring Chinese MANPADS to the Houthis in Yemen.[25] For a long time, Turkey has faced a proxy war threat in which PKK was frequently used by several state sponsors including the Syrian regime. Open-source military surveys report a broad inventory of Strela and Igla variants MANPADS at the hands of Assad's forces, including SA-7, SA-14, SA-18, and SA-24.[26] Many of the regime's arms caches were overrun so far. Moreover, the Syrian civil war attracted many black arms 'entrepreneurs' for arms transfers into the country. Notably, the Small Arms Survey spotted at least three models of MANPADS in Syria that were not previously seen outside of government control in other countries, such as the Chinese FN-6 (see the image below).[27]

Retrieved from: *https://www.yahoo.com/news/russia-downplays-main-syria-opposition-group-leaving-talks-152951623.html,*
Accessed on: May 23, 2016.

21 For detailed data, see: Matt, Schroeder. The MANPADS Threat and International Efforts to Address It: Ten Years After Mombasa, FAS, 2013.

22 Jane's Defence Weekly, http://www.janes360.com/images/assets/413/39413/Grail.pdf, Accessed on: May 23, 2016.

23 Matt, Schroeder. The MANPADS Threat and International Efforts to Address It: Ten Years After Mombasa, FAS, 2013.

24 IHS Jane's, Land Warfare Platforms: Artillery & Air Defence, Igla, March 2016.

25 The New York Times, http://www.nytimes.com/2013/03/03/world/middleeast/seized-arms-off-yemen-raise-alarm-over-iran.html?_r=0, Accessed on: May 23, 2016.

26 IISS, Military Balance 2016.

27 Small Arms Survey, Fire and Forget: The Proliferation of Man-Portable Air Defence Systems in Syria, August 2014.

Apart from state-sponsorship of terrorist organizations, even interstate procurement deals are not transparent with regards to MANPADS. The UN Register of Conventional Weapons system has serious shortcomings. Besides, apart from original producers, many countries are actual and potential re-exporters of these weapons. Last but not least, non-reporting countries, such as Iran and North Korea, bring about additional transparency problems in global MANPADS circulation.[28]

Tracking down MANPADS in conflict zones is not easy, especially when their markings are intentionally concealed. In the recent PKK SA-18 case, there is no visible markings available for open-source intelligence assessment, which makes it harder to identify the source-country. In many conflicts, non-state armed groups prefer to conceal markings of these weapons (see the image below):

© C.J. Chivers/The New York Times

FN-6 tube with concealed markings.

28 Matt, Schroeder. The MANPADS Threat and International Efforts to Address It: Ten Years After Mombasa, FAS, 2013. p.58.

INTERNATIONAL REGULATORY REGIMES TO COUNTER MANPADS PROLIFERATION

The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies that was established in July 1996, forms the basis of multilateral controls on MANPADS. The 41-member arrangement[29] compels member states to impose national export controls on listed items, including MANPADS (which was adopted in 2003 and amended in 2007), report transfers and denials of transfers of such controlled items to countries that are not among the signatories of the Arrangement, and exchange information on sensitive dual-use goods and technologies.[30] The scope of the agreement includes transfers and retransfers of both the systems themselves, their parts and spare parts and development and engineering data, and asserts that transfers shall only be made to other governments. Furthermore, decisions to authorize MANPADS exports are based on the "potential for diversion or misuse in the recipient country; the recipient government's ability and willingness to protect against unauthorized re-transfers, loss, theft and diversion; and the adequacy and effectiveness of the physical security arrangements of the recipient government for the protection of military property, facilities, holdings and inventories".[31] Furthermore, before authorizing MANPADS exports, member states should have assurances from the recipient government that the MANPADS will not be re-exported without their consent, the transfer of MANPADS or their components to any third country should not violate the principles of the Arrangement, the end-use of MANPADS and their components fall in line with the original arrangement, and that the systems, its components and the respective data shall be protected against misuse, theft or compromise.[32]

While the Arrangement envisions considerable limitations to MANPADS transfers and even has detailed clauses on the responsibility of the exporting state to ensure how the recipient state stores, handles, secures and uses the systems, their components and the respective technology, it does not have an independent verification or enforcement mechanism[33] and rests on the signatories themselves to 'satisfy' that the aforementioned conditions are met. "As the exchange of positions between Russia and the United States about Venezuelan MANPADS imports shows, 'satisfy' can be read in many different ways, and does not require actual eyeball inspection".[34] As such, the Arrangement is susceptible to the political views and interests of its members, rather than having its independent regulatory capabilities, such as the International Atomic Energy Agency. Even with its current limitations, the Wassenaar Arrangement emerges as the main export control regime with regards to MANPADS, and sets standards that even non-member states claim to align themselves with.

29 Current members are: Argentina, Australia, Austria, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom and United States.

30 The Wassenaar Arrangement web page "About Us" Accessed on 20 May 2016 at: http://www.wassenaar.org/about-us/

31 Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies Basic Documents (2016, January)

32 Ibid.

33 Gillespie, A. (2001) "A History of the Laws of War: Volume 3: The Customs and Laws of War with Regards to Arms Controls"

34 Ashkenazi, M. "Regulating MANPADS" in "MANPADS: A Terrorist Threat to Civilian Aviation?" (2013) Ashkenazi et al. Bonn International Center for Conversation Brief 47

Still, the Wassenaar Arrangement is not the sole international regulation on MANPADS. Due to the threat that terrorist organizations equipped with MANPADS may pose, especially to civilian airlines, many international organizations including the United Nations General Assembly, Asia-Pacific Economic Forum and the Organization for Security Cooperation in Europe (OSCE), have issued resolutions, action plans or decisions on the issue. Whilst many of these draw from the Wassenaar Arrangement, the OSCE documents go into further detail, such as "specifying that missiles and gripstocks/firing mechanisms be stored 'far enough so that penetration at one site will not place the second at risk'; continuous 24-hour surveillance; access only by two authorized persons"[35] and introduce the principle of physical examination of compliance. Meanwhile, the Commonwealth of Independent States (CIS) which consist of the primary producers and exporters of the Igla system used to shoot down the Turkish attack helicopter, has agreed to implement its own measures to control exports of "Igla" and "Strela" variants of MANPADS in 2003. One of Russia's motivations for leading the initiative has been the use of MANPADS systems in conflicts throughout the CIS, including in Chechnya, in the 1990s.[36] Yet the measures have reportedly not gone beyond those envisioned by the Wassenaar Arrangement and have failed to encompass all of the CIS members. Furthermore, the ability of the states in the CIS region to implement the respective measures and legislation remain dubious.[37] The political nature of arms transfers, prevalent corruption and limited capabilities of the states in question are among other complicating factors. Still, against all these issues, the initiative has formed the basis of some export control arrangement with regards to MANPADS which previously was non-existent at the CIS region, and has given birth to other bilateral arrangements, such as the one between Ukraine and Russia to exchange information on the imports and exports of SA-7 and SA-18 MANPADS within the framework of countering terrorism.[38]

35 Ibid. P.96

36 Presentation by Peyotr Lita Vrin at the Organization for American States Headquarters (2007, March 8) "THE RUSSIAN EFFORTS TO MITIGATE THE THREAT POSED BY THE USE OF MANPADS IN THE COMMONWEALTH OF INDEPENDENT STATES (CIS)"

37 Ashkenazi, M. "Regulating MANPADS" in "MANPADS: A Terrorist Threat to Civilian Aviation?" (2013) Ashkenazi et al. Bonn International Center for Conversation Brief 47

38 Ibid.

POLICY RECOMMENDATIONS

– Turkish decision-makers should develop robust awareness, vigilance, and knowledge about the MANPADS threat. Inter-agency cooperation and drawing the attention of Turkey's top leadership remain vital at this point. Thus, this report recommends that the issue should be incorporated into the next Turkish National Security Council agenda.

– Intelligence and inter-service intelligence sharing with Turkey's partners and allies is the first layer of defense against the MANPADS threat. Once these capable weapons are fielded, no countermeasure could provide perfect protection. Therefore, Turkish intelligence community should focus on enhancing critical information about the illicit transfer and use of MANPADS at Turkey's doorstep. Global trends and stockpile security should also be monitored, as MANPADS can be easily transferred through black arms market. NATO and the Alliance's partnership platforms that enables broad intelligence sharing, such as the Mediterranean Dialogue and the Istanbul Cooperation Initiative, should be approached with a specific agenda on countering the MANPADS threat.

– Ankara should also step up its diplomatic and political pressure to augment the UN Register system and more transparency in the transfer of man-portable air defense systems.

– Army aviation is a vital aspect of Turkey's counterterrorism operations due to air-assault and close air-support roles. As the threat landscape is shifting towards more advanced, third and fourth generation MANPADS, which are mostly immune to traditional countermeasures, Turkish defense modernization should focus on advanced active and passive countermeasures, and missile warning systems for its air platforms. Advanced directional infrared countermeasures, guidance-jammers, and high-energy lasers come into the picture as key assets. Such modernization should also be considered for VIP transportation platforms for the Turkish leadership. At this point, the key way forward is to support multi-lateral consultations between political-military decision-makers, defense industry, intelligence community, and think-tanks & academic research institutions.

– MANPADS use against commercial airliners and airports could cause a catastrophic damage in terms of casualties, economic and psychological effects, and national capacity. Thus, new protocols for airport security is immediately needed. The mortar attack against the Sabiha Gokcen Airport showed vulnerabilities in this field.

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