

# PGMs: IRAN'S PRECISION-GUIDED MUNITIONS PROJECT IN THE SHADOW OF A NUCLEAR DEAL

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Negotiations in Vienna are proceeding in fits and starts to revive an even shorter and weaker version of the 2015 nuclear deal with the Islamic Republic of Iran, formally known as the Joint Comprehensive Plan of Action (JCPOA). The last deal raised significant alarm around the region, as a cash windfall of billions of dollars resulting from sanctions relief flowed downstream to Tehran's terrorist proxies, including the Lebanese Hezbollah. This new agreement is estimated to provide Iran with as much as \$275 billion in first year sanctions relief, and as much as \$1 trillion by the start of 2030,<sup>1</sup> just before most of the restrictions on Tehran's nuclear program expire.

Last time, the funding served to support Hezbollah's conventional military capabilities and buttressed its influence over the Lebanese state. This largesse from Tehran only strengthened the group's status as the most heavily armed non-state actor in the world.<sup>2</sup> With the expected windfall from the new deal, Hezbollah will be able to leverage Iranian assistance to expand its latest efforts to develop lethal precision-guided munitions (PGMs). The Israel Defense Forces (IDF) views these "game-changing weapons" as a top strategic threat, second only to that from Iran's nuclear weapons program.

Indeed, the expected 2022 nuclear deal will likely herald a new era of PGMs in the Middle East. These weapons are already circulating in the region. And now, with the UN missile embargo on Iran expiring in 2023, per the terms of the 2015 JCPOA, the Islamic Republic will be able to proliferate these PGMs with greater ease and legitimacy.

## HEZBOLLAH'S CURRENT CAPABILITIES

Hezbollah has an estimated ground force of 30,000 fighters, according to the IDF.<sup>3</sup> The group's fighters have gained valuable operational experience in recent years, fighting in the Syrian civil war on behalf of the embattled regime of strongman Bashar al-Assad and the Islamic Republic of Iran. Despite suffering huge losses (as many as 2,000 dead and 10,000 wounded), the group is now better prepared for multiple war scenarios.

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1. Saeed Ghasseminejad, "Tehran's \$1 Trillion Deal: An Updated Forecast of Iran's Financial Windfall From a New Nuclear Agreement," *Foundation for Defense of Democracies*, August 19, 2022. (<https://www.fdd.org/analysis/2022/08/19/tehrans-1-trillion-deal/>)  
2. Shaan Shaikh and Ian Williams, "Missiles and Rockets of Hezbollah," *Center for Strategic and International Studies*, June 26, 2018. (<https://missilethreat.csis.org/country/hezbollahs-rocket-arsenal/>)  
3. Israel Defense Forces, "Hezbollah: Get to Know Our Most Complicated Adversary," February 13, 2017. (<https://www.idf.il/en/minisites/hezbollah/hezbollah-get-to-know-our-most-complicated-adversary/>)

Hezbollah's arsenal includes an estimated 150,000 surface-to-surface rockets and missiles. Most are inaccurate short-range rockets, but some are more accurate and have ranges of up to several hundred kilometers.<sup>4</sup> During a potential conflict, the group is capable of challenging the IDF, destroying critical military and civilian infrastructure, disrupting Israel's economy,<sup>5</sup> and inflicting significant civilian casualties (including by potentially hitting chemical storages tanks and nuclear facilities).<sup>6</sup>

Hezbollah's primary weakness, however, is that its rockets have been inaccurate. Hamas, Palestinian Islamic Jihad, and other Iranian proxies have the same problem. This is why, over the last decade, Iran has launched a project to enable Hezbollah, and perhaps other groups, to hit targets in Israel more accurately. The ultimate goal is to strike military and civilian targets in Israel, a small country with little redundancy in terms of critical infrastructure.<sup>7</sup> The Islamic Republic undoubtedly also sees benefit in developing these weapons to target other adversaries around the Middle East.

## PGMS DEFINED

Precision-guided munitions are the weapon systems that can enable Hezbollah to achieve this objective. PGMs can correct their course during flight to hit the target in a precise fashion, thus maximizing lethality and efficiency.

Assessing precision is based on the speed and payload of the munition. For example, a small-payload rocket (such as an anti-tank weapon) needs to score a direct hit within a few meters of the intended target. By contrast, missiles that fly hundreds of miles with a larger payload may be deemed accurate if they consistently hit within 10 to 20 meters of their intended target. Hezbollah's PGMs reportedly have an accuracy of 10 meters. (The group's inaccurate missiles yield a precision of about 1 percent of their distance — for example, a radius of 2 km for a missile from 200 km away.)<sup>8</sup>

Precision is achieved through systems (hardware and software) imbedded in the munition that allow it to correct its course, such as command and control algorithms, thrusters or gliders, and the ability to lock onto a specific target based on various guidance systems (GPS or inertial guidance, laser pointers, computerized vision based on pictures, radio, infra-red, or radar).

PGMs can be assembled in two ways. The first way is to build them deliberately from scratch. The other entails upgrading "dumb" rockets with limited targeting capabilities through the addition of certain components (again, hardware and software), such as navigation systems, command and guidance systems, and control systems.<sup>9</sup>

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4. "Nasrallah claims Hezbollah can turn rockets into precision weapons with Iran's help," *The Times of Israel* (Israel), February 16, 2022. (<https://www.timesofisrael.com/nasrallah-claims-hezbollah-can-turn-rockets-into-precision-weapons-with-irans-help/>)

5. Alma Israel, "Nasrallah interview 12.7.19," *YouTube*, August 1, 2019. (<https://www.youtube.com/watch?v=Przcf2SGwV0>)

6. "Hassan Nasrallah's "Ammonia Speech:" The Threat for Israel and Its Significance," *The Meir Amit Intelligence and Terrorism Information Center*, February 25, 2016. (<https://www.terrorism-info.org.il/en/20964/>)

7. Alma Israel, "Nasrallah interview 12.7.19," *YouTube*, August 1, 2019. (<https://www.youtube.com/watch?v=Przcf2SGwV0>)

8. Itay Blumenthal, "צה"ל חשף: חיובאללה הקים מפעל לייצור טילים מדויקים בלבנון," *Ynet* (Israel), September 3, 2019. (<https://www.ynet.co.il/articles/0,7340,L-5581046,00.html>)

9. "Hezbollah's Precision Missile Project," *Britain Israel Communications and Research Center*, February 2019, page 5. (<http://www.bicom.org.uk/wp-content/uploads/2019/02/Precision-Project-Paper.pdf>)

## PGMS IN HEZBOLLAH'S POSSESSION

Hezbollah's secretary-general, Hassan Nasrallah, has openly boasted of possessing PGMs. Specifics of this program are not readily available in the public domain, as the group protects this information for fear of preemptive Israeli strikes.

Still, open-source reports indicate that Hezbollah has an arsenal of the following PGM variants, many of them based on Iranian platforms, but some obtained from Russia and China:

**Surface-to-Surface Rockets and Missiles:** These include the Fateh-110/M-600<sup>10</sup> (200–300 km range) and the Zelzal-2 (210 km range). Hezbollah may also possess newer Iranian missiles, such as the Zulfiqar and the Quds-2 (which the Houthis in Yemen have used against the United Arab Emirates and Saudi Arabia).<sup>11</sup>

**Anti-ship Cruise Missiles:** These include the Russian-made Yakhont (300 km range) and the Iranian version of the Chinese C-802 missile (120 km).<sup>12</sup>

**Unmanned Aerial Vehicles (UAVs):** Hezbollah's arsenal of UAVs includes many of Iranian origin. They include the Ayub, which is the name Hezbollah gave to the Iranian Shahed-129. The Ayub has a range of 1,700 to 2,400 km and can carry up to eight Sadid precision-guided bombs). Hezbollah also possesses the Mirsad-1 and Mirsad-2 (based on the Iranian Mohajer-2 and Mohajer-4 UAVs). These have a range of 50 and 150 km, respectively. Their payloads include two or three cameras and up to 12 RPG rockets. Hezbollah also has in its arsenal at least one suicide UAV, the Ababil-2. It has a 150 km range and can carry a payload of up to 45 kg of explosives. Hezbollah is also believed to possess the Ma'arab suicide drone (based on the Iranian Yasser UAV, which has a range of 200 to 400 km and electronic warfare capabilities).<sup>13</sup>

## THE EVOLUTION OF THE PGM PROJECT

In a 2018 interview with Iran's *Tasnim News Agency*, the Islamic Revolutionary Guard Corps (IRGC) Aerospace Force commander, General Amir-Ali Hajizadeh, recounted how in 2009 he presented the Iranian leadership with a plan to modernize the country's missile program. Supreme Leader Ali Khamenei overruled his entire plan and ordered him to focus solely on the development of PGMs.<sup>14</sup>

10. Ibid. The M-600 is the Syrian-produced version of the Fateh-110B.

11. Fabian Hoffman and Timothy Wright, "The Houthis present high, low and slow challenges to the UAE's air defence," *The International Institute for Strategic Studies*, February 4, 2022. (<https://www.iiss.org/blogs/military-balance/2022/02/the-houthis-present-high-low-and-slow-challenges-to-the-uaes-air-defence>); Fabian Hinz, "Missile multinational: Iran's new approach to missile proliferation," *The International Institute for Strategic Studies*, April 26, 2021. (<https://www.iiss.org/blogs/research-paper/2021/04/iran-missile-proliferation-strategy>)

12. Shaan Shaikh and Ian Williams, "Missiles and Rockets of Hezbollah," *Center for Strategic and International Studies*, August 10, 2021. (<https://missilethreat.csis.org/country/hezbollahs-rocket-arsenal/#easy-footnote-bottom-44-4179>)

13. Tal Beeri, "Iran's 'UAV Army' – A Global Threat," *Alma Research and Education Center*, December 2021, pages 27–29. (<https://israel-alma.org/wp-content/uploads/2021/12/Irans-UAV-Army-%E2%80%93-A-Global-Threat.pdf>)

14. Mojtaba 68, "فرمانده هوا فضا سردار حاجی زاده دقت موشک ها" [Aerospace Force Chief Commander Hajizadeh on the Precision of Missiles], *YouTube*, September 27, 2018. (<https://www.youtube.com/watch?v=UHKIXuebMS8>)

Hezbollah's PGM program has since gone through several distinct phases.<sup>15</sup> The first involved Iranian smuggling of complete accurate rockets (such as the Fateh-110) via land, air, and sea routes to Syria and Lebanon.<sup>16</sup> The “fog of war” in Syria made these Iranian shipments somewhat more feasible despite consistent efforts by the Israeli Air Force to interdict them.

The second phase began when Hezbollah came to understand that the Israelis have near-total intelligence dominance in Syria, resulting in the frequent destruction of PGMs transiting the war-torn country.<sup>17</sup> Using Iranian technology and missile components, Hezbollah began producing PGMs in Syria, with the full knowledge of the Assad regime.<sup>18</sup> These PGMs were mostly M-600s, the Syrian version of the Fateh-100.<sup>19</sup> Once assembled, these weapon systems were later transferred to Hezbollah in Lebanon via land routes. Again, Israeli strikes prevented most of these transfers.

The Islamic Republic and Hezbollah thus adopted a third course of action: the production and upgrading of systems inside Lebanon. This process still incorporates materials (and now machinery) from Iran as well as guidance and training from Iranian engineers.<sup>20</sup> The Israelis have revealed the location of some missile production facilities, leading Hezbollah to dismantle them.<sup>21</sup> However, others still exist. Nasrallah explicitly said as much in a February 2022 speech.<sup>22</sup>

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15. Or Heller, “Images reveal results of Israeli strike on Syria’s Latakia,” *Israel Defense* (Israel), August 29, 2019. (<https://www.israeldefense.co.il/node/39973>)

16. Tamir Eshel, “Iran: We supplied ballistic guided rockets to Hezbollah,” *Defense Update*, November 14, 2014. ([https://defense-update.com/20141124\\_fatah110.html](https://defense-update.com/20141124_fatah110.html)); “Iranian Commander: Lebanese, Palestinian Resistance Groups Possess Fateh-Class Missiles,” *Fars News Agency* (Iran), November 12, 2014. (<https://www.farsnews.ir/en/news/13930821000321/Iranian-Cmmander-Lebanese-Palesinian-Resisance-Grps-Pssess-Faeh>); Nicholas Blanford, “Hezbollah claims ‘pinpoint’ Iranian missiles added to its arsenal,” *The Christian Science Monitor*, November 23, 2014. (<https://www.csmonitor.com/World/Middle-East/2014/1123/Hezbollah-claims-pinpoint-Iranian-missiles-added-to-its-arsenal>)

17. “Images reveal results of Israeli strike on Syria’s Latakia,” *i24News* (Israel), September 19, 2018. (<https://www.i24news.tv/en/news/middle-east/184487-180919-images-reveal-results-of-israeli-strike-on-syria-s-latakia>)

18. Anna Ahronheim, “New images show Iranian surface-to-surface missile facility in Syria,” *The Jerusalem Post* (Israel), September 2, 2018. (<https://www.jpost.com/middle-east/new-images-show-iranian-surface-to-surface-missile-facility-in-syria-566217>); “Suspected Iranian SSM Facility in Wadi Jahannam, Syria. Construction Monitoring Update March 2021,” *The Intel Lab*, March 13, 2021. (<https://www.intel-lab.net/post/suspected-iranian-ssm-facility-in-wadi-jahannam-syria-construction-monitoring-update-march-2021>); “Syrian Missile-Manufacturing Plants Built by Iran,” *Fars News Agency* (Iran), November 11, 2014. (<http://www.irdiplomacy.ir/en/news/1940716/syrian-missile-manufacturing-plants-built-by-iran>)

19. Shaan Shaikh and Ian Williams, “Missiles and Rockets of Hezbollah,” *Center for Strategic and International Studies*, June 26, 2018. (<https://missilethreat.csis.org/country/hezbollahs-rocket-arsenal/>)

20. Lucas Y. Tomlinson, “Iran sent Hezbollah advanced weapons to turn rockets into precision missiles, new flight data suggests,” *Fox News*, October 19, 2018. (<https://www.foxnews.com/world/iran-sent-hezbollah-advanced-weapons-to-turn-rockets-into-precision-missiles-new-flight-data-suggests>); Israel Defense Forces, “Hezbollah’s Precision Guided Missile Project,” September 19, 2019. (<https://www.idf.il/en/minisites/hezbollah/hezbollah-get-to-know-our-most-complicated-adversary/>)

21. “Clear and Precise Danger - Chapter 18,” *YouTube*, February 17, 2020. (<https://www.youtube.com/watch?v=OIPh6-F-UrE&t=2929s>)

22. “Hezbollah claims it’s making drones and missiles in Lebanon; chief offers export opportunity,” *Associated Press*, February 16, 2022. (<https://www.defensenews.com/global/mideast-africa/2022/02/16/hezbollah-claims-its-making-drones-and-missiles-in-lebanon-chief-offers-export-opportunity/>); Itay Blumenthal, “זה"ל חשף: חיזבאללה הקים מפעל לייצור טילים מדויקים בלבנון” [The IDF revealed: Hezbollah established a factory for producing precision missiles in Lebanon], *Ynet* (Israel), September 3, 2019. (<https://www.ynet.co.il/articles/0,7340,L-5581046,00.html>)

## QUANTITY OF HEZBOLLAH'S PGMs AND UAVs

Israeli exposure of the PGM production sites and air strikes on smuggling attempts in Syria have delayed the PGM program.<sup>23</sup> Still, Hezbollah and Iran have made progress. How much progress is debatable.

Hezbollah and IRGC commanders claim that Hezbollah had accurate missiles as early as 2014.<sup>24</sup> But estimates of Hezbollah's PGM arsenal began increasing only after the advent of the production facilities in Lebanon.

In early 2019, Israeli officials put the number of Hezbollah PGMs at about 20<sup>25</sup> or a "small handful."<sup>26</sup> Other experts assessed that Hezbollah had already amassed about 200 accurate missiles.<sup>27</sup>

By the end of 2020, Nasrallah asserted that his group possessed twice as many PGMs as it had in 2019, saying Israel's efforts to prevent their transfer had failed.<sup>28</sup> Some estimates put the number of PGMs in late 2020 at "dozens,"<sup>29</sup> while others assessed that Hezbollah has "hundreds" of accurate Fateh-110 missiles.<sup>30</sup>

An assessment published in February 2022 puts Hezbollah's total number of accurate weapons at "several hundred."<sup>31</sup> This is consistent with off-the-record statements made by IDF officers.

In addition, Hezbollah possesses up to a dozen Yakhont anti-ship missiles and an unknown number of Chinese-made C-802s. The latter have been delivered from Iran and are possibly operated by Iranians in Lebanon.<sup>32</sup>

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23. Bret Stephens, "The Man Who Humbled Qassim Suleimani," *The New York Times*, January 11, 2019. (<https://www.nytimes.com/2019/01/11/opinion/gadi-eisenkot-israel-iran-syria.html>); Neri Zilber, "To Target Israel, Iran's 'Suitcase' GPS Kits Turn Hezbollah Rockets Into Guided Missiles," *The Daily Beast*, February 21, 2019. (<https://www.thedailybeast.com/to-target-israel-irans-suitcase-gps-kits-turn-hezbollah-rockets-into-guided-missiles>); "Hezbollah's Precision Missile Project," *Britain Israel Communications and Research Center*, February 2019, page 6. (<http://www.bicom.org.uk/wp-content/uploads/2019/02/Precision-Project-Paper.pdf>)

24. Nicholas Blanford, "Hezbollah claims 'pinpoint' Iranian missiles added to its arsenal," *The Christian Science Monitor*, November 23, 2014. (<https://www.csmonitor.com/World/Middle-East/2014/1123/Hezbollah-claims-pinpoint-Iranian-missiles-added-to-its-arsenal>); "Iranian Commander: Lebanese, Palestinian Resistance Groups Possess Fateh-Class Missiles," *Fars News Agency* (Iran), November 12, 2014. (<https://www.farsnews.ir/en/news/13930821000321/Iranian-Cmmander-Lebanese-Palesinian-Resisance-Grps-Pssess-Faeh>)

25. "Hezbollah's Precision Missile Project," *Britain Israel Communications and Research Center*, February 2019. (<http://www.bicom.org.uk/wp-content/uploads/2019/02/Precision-Project-Paper.pdf>)

26. Neri Zilber, "To Target Israel, Iran's 'Suitcase' GPS Kits Turn Hezbollah Rockets Into Guided Missiles," *The Daily Beast*, February 21, 2019. (<https://www.thedailybeast.com/to-target-israel-irans-suitcase-gps-kits-turn-hezbollah-rockets-into-guided-missiles>)

27. "Hezbollah's Precision Missile Project," *Britain Israel Communications and Research Center*, February 2019. (<http://www.bicom.org.uk/wp-content/uploads/2019/02/Precision-Project-Paper.pdf>)

28. "Hezbollah says it has doubled its arsenal of guided missiles," *Associated Press*, December 28, 2020. (<https://apnews.com/article/israel-middle-east-lebanon-production-facilities-hassan-nasrallah-39b29aa0d44acc6ac6592e58ea2463d5>)

29. @HaidarAkarar, *Twitter*, December 15, 2020. (<https://twitter.com/HaidarAkarar/status/1338844331801780231>)

30. Shaan Shaikh and Ian Williams, "Missiles and Rockets of Hezbollah," *Center for Strategic and International Studies*, June 26, 2018. (<https://missilethreat.csis.org/country/hezbollahs-rocket-arsenal/>)

31. Tal Beerli, "Does Hezbollah Really have 150,000 Missiles and Rockets?" *Alma Research and Education Center*, February 21, 2022. (<https://israel-alma.org/2022/02/21/does-hezbollah-really-have-150000-missiles-and-rockets/>)

32. Shaan Shaikh and Ian Williams, "Missiles and Rockets of Hezbollah," *Center for Strategic and International Studies*, June 26, 2018. (<https://missilethreat.csis.org/country/hezbollahs-rocket-arsenal/>)

Of all its precision weapons, Hezbollah's UAV arsenal is the largest, with an estimated 2,000 systems.<sup>33</sup> They vary from reconnaissance drones to loitering munitions to what are essentially rudimentary cruise missiles, depending upon their navigation and communication systems, among other things.

## ISRAELI EFFORTS TO EXPOSE AND DESTROY PGMs

Hezbollah endeavors to conceal the location of its PGM arsenal and production facilities. Nasrallah said as much in December 2020 on Al-Mayadeen TV.<sup>34</sup> The Israelis have, at least until now, declined to attack the known sites in Lebanon. Rather, Israeli officials have released the exact coordinates of storage facilities, production facilities, and other buildings involved in the PGM project.<sup>35</sup> Jerusalem's goal appears to be exposure, with the aim of shaming Hezbollah and forcing the group to shutter the sites. Likewise, the Alma Research and Education Center has exposed the locations of other facilities involved in rocket assembly and storage.<sup>36</sup>

It is unclear what percentage of the facilities have been exposed, but it is likely modest. Many of Hezbollah's work sites are small, and they can be activated or shut down on short notice. This is part of Hezbollah's plan to create redundancy amidst Israeli efforts to disrupt the project.

While Israel has carefully avoided conflict with Hezbollah, there has been one notable exception. On August 27, 2019, two drones attacked a target in the Dahiyeh neighborhood of Beirut. The attack was attributed to the IDF, and the target was reported to be a high-grade propellant mixer, which is an important component of the PGM project.<sup>37</sup>

## UNITS AND PERSONNEL ASSOCIATED WITH THE PGM PROGRAM

Many entities and persons involved in the Hezbollah PGM program are not publicly known. However, a handful have been exposed in recent years.

Hezbollah's Unit 1600, for example, is reportedly responsible for setting up (or dismantling) the sites associated with the precision program.<sup>38</sup> Unit 108 is responsible for the smuggling of PGMs and PGM parts to Lebanon. This includes

33. Tal Beeri, "An estimation of the number of UAVs used by Hezbollah – Research Logic," *Alma Research and Education Center*, December 23, 2021. (<https://israel-agma.org/2021/12/23/an-estimation-of-the-number-of-uavs-used-by-hezbollah-research-logic/>)

34. "السعودية أرادت اغتيالـيـ.. ومواضيع أخرى كشفها السيد نصر الله للميادين" (Saudi Arabia wanted to assassinate me?.. and other topics that Mr. Nasrallah revealed to Al-Mayadeen), *Al-Mayadeen* (Lebanon), December 27, 2020. (<https://www.almayadeen.net/news/politics/1444814/-السعودية-أرادت-اغتيالـيـ---ومواضيع-أخرى-كشفتها-السيد-نصر-الله>)

35. "Exposé: 28 Missile Launching Sites in Beirut – Hezbollah's Use of Civilians as HUMAN SHIELD," *Alma Research and Education Center*, July 2020, pages 42–44. (<https://israel-agma.org/wp-content/uploads/2020/07/Alma-report-Human-Shield.pdf>); Yoav Zitun, "Rare IDF documentation: aerial surveillance of the rocket production site in Beirut," *Ynet* (Israel), October 2, 2020. (<https://www.ynet.co.il/news/article/HykkXhEUD>); Mordechai Sones, "Hezbollah compound for precision missile production exposed," *Israel National News* (Israel), September 3, 2019. (<https://www.israelnationalnews.com/news/268355>); @ambassadorlion, *Twitter*, September 29, 2020. (<https://twitter.com/ambassadorlion/status/1310999038620246019>); @HezbollahWatch, *Twitter*, September 3, 2019. (<https://twitter.com/HezbollahWatch/status/1169037894876618753>)

36. "Exposé: 28 Missile Launching Sites in Beirut – Hezbollah's Use of Civilians as HUMAN SHIELD," *Alma Research and Education Center*, July 2020, pages 38–41. (<https://israel-agma.org/wp-content/uploads/2020/07/Alma-report-Human-Shield.pdf>); Tal Beeri, "Hezbollah's Missile Array ("Fatah 110") – Unveiling Four New Sites In Beirut," *Alma Research and Education Center*, February 24, 2021. (<https://israel-agma.org/2021/02/24/hezbollahs-missile-array-fatah-110-unveiling-four-new-sites-in-beirut/>)

37. "Beirut drone attack hit precision missile infrastructure: report," *i24News* (Israel), August 28, 2019. (<https://www.i24news.tv/en/news/middle-east/1566908305-alleged-israeli-drone-downed-in-beirut-targeted-precision-missile-infrastructure-report>)

38. "עולם החדשות בטלגרם," *Telegram*, January 12, 2022. (<https://t.me/WorldNewsIL/12407>)

“facilitating the transfer of weapons, technology, and other support,” according to the U.S. Treasury Department.<sup>39</sup> Unit 108 is also involved in leveraging criminal networks to support Hezbollah’s finances and logistics.<sup>40</sup>

The IRGC also plays a direct role in this operation. Unit 190 of the Quds Force, the IRGC’s expeditionary arm, is involved in smuggling operations. The unit, which comprises about 20 people,<sup>41</sup> specializes in hiding and disguising weapons as civilian equipment.<sup>42</sup>

The Israeli Ministry of Defense has also identified several civilian companies involved in the precision program. They include Muobayed for Lubricants SAL, Barakat Electro Mechanical & Trading co. SARL, and Toufaily General Trading (otherwise known as TCM Tfayli).<sup>43</sup> Israel asserts that these companies provide Hezbollah with oil lubricants, machinery, and ventilation systems to facilitate the PGM project.<sup>44</sup>

Several individuals are associated with the project, including several high-level Quds Force operatives, according to the IDF. Muhammad Hussein-Zada Hejazi heads “Iran’s precision guided missile project in Lebanon,” where he “directly commands Iranian personnel.” Majid Nuab is “an engineer who specializes in surface-to-surface missiles.” He is the “technological manager of the precision weapons project in Lebanon.” And Ali Asrar Nuruzi is the “chief logistics officer,” responsible for transferring PGM components from Iran to Lebanon.<sup>45</sup>

On the Hezbollah side, one notable name is Muhammad Qasir. He was sanctioned by the U.S. Treasury for heading the aforementioned Unit 108, which smuggles PGM materials into Lebanon.<sup>46</sup>

## A LOOMING CRISIS

Israel continues to warn that it may soon need to deal with the PGM threat.<sup>47</sup> However, doing so could come at great cost. The regime in Iran is not only working assiduously to obscure the transportation and assembly of these PGMs, but is also devising ways to store them under homes, schools, hospitals, apartment buildings, refugee

39. U.S. Department of the Treasury, Press Release, “Treasury designates illicit Russia-Iran oil network support the Assad regime, Hizballah, and HAMAS,” November 20, 2018. (<https://home.treasury.gov/news/press-releases/sm553>)

40. Matthew Levitt, “Hezbollah’s Procurement Channels: Leveraging Criminal Networks and Partnering with Iran,” *Combating Terrorism Center at West Point*, March 2019. (<https://ctc.usma.edu/hezbollahs-procurement-channels-leveraging-criminal-networks-partnering-iran>)

41. Arfa Al Bandari, “Iran’s Unit 190: The special force smuggling weapons by land, sea and air,” *Raseef*, November 11, 2016. (<https://raseef22.net/article/1067968-irans-unit-190-special-force-smuggling-weapons-land-sea-air>); Nadav Pollak, “Rethinking U.S. Strategy for Intercepting Iranian Arms Transfers,” *The Washington Institute for Near East Policy*, August 20, 2015. (<https://www.washingtoninstitute.org/policy-analysis/rethinking-us-strategy-intercepting-iranian-arms-transfers>)

42. “Unit 190-Weapons Transfer Unit,” *VS Quds*, accessed September 8, 2022. (<https://www.vsquds.info/انتقال-تسليحات/weapons-transfer/unit-190-weapons-transfer-unit>)

43. Israel National Bureau for Counter Terror Financing “Administrative seizure order,” January 24, 2022. (<https://nbctf.mod.gov.il/he/Announcements/Documents/ASO%204-22-24.1.22.pdf>)

44. Anna Bresky, “פעילות משותפת של אמ”ן ומשרד הביטחון: זה הצעד הבא במאבק בפרויקט דיוק הטילים של חיזבאללה” [Joint activity of the Military Intelligence Directorate and the Ministry of Defense: this is the next step in the fight against Hezbollah’s missile precision project], *Maariv* (Israel), February 6, 2022. (<https://www.maariv.co.il/news/military/Article-896238>)

45. Israel Defense Forces, “Hezbollah’s Precision Guided Missile Project,” September 19, 2019. (<https://www.idf.il/en/minisites/hezbollah/hezbollah-get-to-know-our-most-complicated-adversary/>)

46. U.S. Department of the Treasury, Press Release, “Treasury designates illicit Russia-Iran oil network support the Assad regime, Hizballah, and HAMAS,” November 29, 2018. (<https://home.treasury.gov/news/press-releases/sm553>)

47. Jacob Nagel and Jonathan Schanzer, “Get Ready for a New Type of Israeli War,” *The National Interest*, July 11, 2020. (<https://nationalinterest.org/blog/buzz/get-ready-new-type-israeli-war-164578>)

camps, and other heavily populated civilian infrastructure. As one former Israeli official stated, “Every third house in Shia neighborhoods contains a military asset of the organization.”<sup>48</sup>

In other words, Hezbollah, like Hamas, is using human shields, illegal under international law. The UN General Assembly explicitly deems this a war crime, as does the U.S. government, with overwhelming bipartisan congressional support.<sup>49</sup> When the time comes, the decision to strike these weapons on the ground will be excruciating for the IDF. Just as Hezbollah and its Iranian backers have planned it, every strike will create immense public-relations pressure for Israel as images of injured or dead civilians fill the television screens and Twitter feeds of news consumers worldwide.

While tensions escalate between Israel and the Lebanese Hezbollah, new questions linger as to whether Iran is providing PGMs to other proxies in the region. Israel has reportedly struck targets in Iraq,<sup>50</sup> which is home to several Shiite militias.

Should the Islamic Republic, boosted by a massive influx of cash resulting from a new nuclear deal, along with the 2023 expiration of the UN ban on Iranian missile testing, step up efforts to provide PGMs to its regional proxies, the region could experience a new wave of violence.

Until Iran began doing so, PGM technology had never before been proliferated to nonstate actors. Hezbollah is the test case. If successful, the project could provoke a brutal war between Israel and Tehran’s Lebanese proxy. This would spell disaster for Lebanon, which is already on the verge of political and economic collapse. Israel would undeniably pay a steep price, too. The Israeli doctrine of deterrence known as the “Dahiyeh Doctrine” may have prevented conflict until now.<sup>51</sup> But calm may only last for so long.

And the threat may not end there. The cash injection resulting from a new nuclear deal could also prompt the Iranian regime to engage in wider proliferation of these weapons to its other proxies, further destabilizing a region already mired by terrorism and conflict.

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48. Interview with former Israeli official, September 7, 2022.

49. Matt Zweig and Orde Kittrie, “The Use Of Human Shields Is A War Crime. America Must Hold Terrorists Accountable,” *1945*, August 25, 2022, <https://www.19fortyfive.com/2022/08/the-use-of-human-shields-is-a-war-crime-america-must-hold-terrorist-accountable/>

50. Alissa J. Rubin and Ronen Bergman, “Israeli Airstrike Hits Weapons Depot in Iraq,” *The New York Times*, August 22, 2019. (<https://www.nytimes.com/2019/08/22/world/middleeast/israel-iraq-iran-airstrike.html>)

51. Amos Harel, “IDF Plans to Use Disproportionate Force in the Next War,” *Haaretz* (Israel), October 4, 2008. (<https://www.haaretz.com/2008-10-05/ty-article/analysis-idf-plans-to-use-disproportionate-force-in-next-war/0000017f-db22-d856-a37f-ffe216460000>)



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