



ISRAEL'S QUALITATIVE MILITARY EDGE VERSUS POTENTIAL TECHNOLOGICAL COMPROMISE – EMPHASIZING DIFFERENT CRITERIA IN F-35 AIRCRAFT PROCUREMENT LEGISLATION

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INTRODUCTION	119
I. FOUNDATIONS OF THE ARMS EXPORT AND CONTROL ACT, ISRAEL'S QME, AND THEIR RELATION TO THE NATIONAL DEFENSE STRATEGY	124
II. REMOVAL OF TURKEY FROM THE F-35 PROGRAM OVER TURKEY-RUSSIA ARMS PURCHASE	130
III. CONCERNS OVER ISRAEL-RUSSIA AND ISRAEL-CHINA ARMS EXPORTS.....	132
IV. THE SECURE F-35 EXPORTS ACT OF 2020	136
CONCLUSION	140

INTRODUCTION

“After almost every mission, we shake our heads and smile, saying “[w]e can’t believe we just did that,” [sic] . . . “We flew right into the heart of the threat and were able to bring all of our

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jets back out with successful strikes. It's like we hit the 'I Believe' button again after every sortie.”¹

These were the words of U.S. Air Force fighter pilot, Major James Schmidt, in 2017 after completing Red Flag, the U.S. Air Force's premier air combat exercise.² Much like any other war game, the purpose of Red Flag is to “maximize the combat readiness and survivability of participants by providing a realistic training environment and a pre-flight and post-flight training forum that encourages a free exchange of ideas.”³ In short, practice makes perfect. Though Red Flag is held several times per year, in 2017, Major Schmidt and his squadron would be flying the U.S. Air Force's latest fighter aircraft, the Lockheed Martin F-35 Lightning II. Major Schmidt's jubilation is well earned, as the brand-new F-35 recorded a kill ratio in the exercise of 20:1, far exceeding all performance expectations for the new aircraft.⁴

This performance is due not only to the skill of the F-35 pilots but also to the aircraft's technological edge. The F-35 is a fifth-generation fighter aircraft. The F-35 incorporates technological advancements of the early twenty-first century like low-observable and counter-low-observable technologies (stealth), advanced avionics, and integrated computer systems capable of networking with other elements within a battlespace for situational awareness.⁵ Truly a potent weapon, the F-35 is one of the most advanced aircraft ever built.

¹ Micah Garbarino, *F-35A Stealth Brings Flexibility to Battlespace*, 75TH AIR BASE WING PUB. AFFS. (Feb. 10, 2017), <https://www.eglin.af.mil/News/Article-Display/Article/1081517/f-35a-stealth-brings-flexibility-to-battlespace/>.

² *Id.*

³ *414th Combat Training Squadron “Red Flag”*, NELLIS AIRFORCE BASE (Feb. 2012), <https://www.nellis.af.mil/About/Fact-Sheets/Display/Article/2605882/414th-combat-training-squadron-red-flag/>.

⁴ Calvin Biesecker, *F-35A Achieves 20-To-One Kill Ratio at Red Flag*, *General Says*, DEF. DAILY (Feb. 17, 2017), <https://www.defensedaily.com/f-35a-achieves-20-one-kill-ratio-red-flag-general-says/air-force/>.

⁵ *F-35A Lightning II*, UNITED STATES AIR FORCE, <https://www.af.mil/About-Us/Fact-Sheets/Display/Article/478441/f-35a-lightning-ii/>.

Developed by Lockheed Martin with principal partners Northrup-Grumman and BAE Systems, the United States largely funded the F-35's development with backing from eight "partner nations:" Australia, Canada, Denmark, Italy, the Netherlands, Norway, Turkey, and the United Kingdom.⁶ All of those countries are also customers of the program, originally projected to purchase collectively over 3,100 of the aircraft through 2035.⁷ Other nations, notably Israel and the United Arab Emirates, have also become export targets for the aircraft, with some controversy.⁸ Turkey, however, was removed from participation in the F-35 program in 2019 due to concerns that Turkey's acquisition of the Russian S-400 surface-to-air missile ("SAM") system would enable Russia to collect intelligence on the F-35's advanced capabilities.⁹

Such related technology security concerns, namely the possibility of adversaries acquiring the technology integrated into the F-35, are primarily addressed through U.S. export control laws. Specifically, the Arms Export Control Act of 1976 ("AECA"), codified in 29 U.S.C. §§ 2751-2799.¹⁰ Since its inception, however, the AECA has undergone multiple revisions to reflect the changing priorities of U.S. national security. Chief among those priorities is protecting Israel's Qualitative Military Edge ("QME"). The principle behind the QME, first endorsed by President Lyndon Johnson and since reiterated by every president, is relatively simple: Israel is a strategic partner and "bastion of liberal representative government in the Middle East, and, as such, its continued survival is a vital national interest of the United States."¹¹ Due to its small size, the Israeli military

⁶ CONG. RSCH. SERV., RL30563, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM (2022).

⁷ *Id.*

⁸ Matthew Lee, *US Plans Sale of F-35 Fighter Jets to UAE in \$23B Arms Deal*, THE ASSOC. PRESS (Nov. 10, 2020), <https://apnews.com/article/bahrain-israel-iran-united-arab-emirates-middle-east-822123a6e70cd6154dfd6433c9fcf610>.

⁹ Mike Stone, *U.S. Halts F-35 Equipment to Turkey, Protests Its Plan to Buy from Russia*, REUTERS (Apr. 1, 2019), <https://www.reuters.com/article/us-usa-turkey-f35-exclusive/exclusive-us-sends-message-to-turkey-halts-f-35-equipment-shipments-sources-idUSKCN1RD316>.

¹⁰ 29 U.S.C. §§ 2751-2799.

¹¹ William Wunderle & Andre Briere, *U.S. Foreign Policy and Israel's Qualitative Military Edge: The Need for a Common Vision*, 80 WINEP POL. FOCUS 1 (2008).

has always been outnumbered by its foes, and therefore, its survival is predicated on possessing a qualitative military edge over its adversaries.¹² This principle was codified into law by the Naval Vessel Transfer Act of 2008, which amended the AECA to include a provision mandating certification that the sale of military equipment to any Middle Eastern country other than Israel by the United States will not adversely affect Israel's QME.¹³

Israel's QME has also been written into proposed legislation specifically directed at regulating F-35 exports, The SECURE F-35 Exports Act of 2020.¹⁴ However, although protecting Israel's QME has been a cornerstone of U.S. arms export control law, Israel has received chastisement from the United States on several occasions for selling high-end military equipment to near-peer potential adversaries of the United States like Russia and China.¹⁵ Today, Israel remains the second-largest foreign supplier of arms to China after Russia.¹⁶ Israel manufactures reconnaissance drones for Russia and engages in arms sales as a bargaining chip to secure Russian cooperation in dealing with threats from Iran.¹⁷ This history calls into question whether or not the preservation of Israel's QME should be one of the criteria that underpins the legality of exporting a highly advanced fifth-generation aircraft like the F-35.

Part I of this Comment provides background on current procurement statutes mandating consideration of Israel's QME, including the AECA and the Naval Vessel Transfer Act of 2008. It will also describe the shift away from combating global terrorism as one of the United States' primary challenges in national defense and towards

¹² *Id.*

¹³ Naval Vessel Transfer Act of 2008, Pub L. No. 110-429, 122 Stat. 4842 (2008); H.R. Res. 7177, 110th Cong. (2008) (enacted).

¹⁴ Israel and United States Security Enhancement for F-35 Exports Act of 2020, S. 4814, 116th Cong. (2020).

¹⁵ Sameer Suryakant Patil, *Understanding the Phalcon Controversy*, 2 ISR. J. FOREIGN AFFS. 91, 91 (2008).

¹⁶ *Profile: Israel*, ARMS SALES MONITORING PROJECT (Aug. 2002), <https://fas.org/asmp/profiles/israel.htm>.

¹⁷ *Israel and Russia Coordinate Arms Sale Preventing Deals with Iran*, MIDDLE EAST MONITOR (Dec. 13, 2019), <https://www.middleeastmonitor.com/20191213-israel-and-russia-coordinate-arms-sale-preventing-deals-with-iran/>.

matching the capabilities of strategic competition by the “revisionist powers” of Russia and China.¹⁸ Part II analyzes the national security concerns of the United States when evaluating a potential export of the F-35 to several key nations. Part II further highlights the 2019 removal of Turkey as a Level 3 partner in the F-35 program, giving special attention to the concerns of potential compromise of F-35 technologies, which give the weapons system a distinct advantage over near-peer competitors.¹⁹

Part III will examine Israel as a potential recipient of the F-35 and its respective relationships with near-peer strategic competitors of the United States, Russia, and China. This examination will identify legitimate concerns regarding Israel’s defense trade relationships with Russia and China and the resulting potential risks of compromising the F-35’s technological advantage. Finally, Part IV will describe the SECURE F-35 Exports Act of 2020 as an example of pending F-35 procurement legislation and argue for a decreased consideration of Israel’s QME in favor of stricter scrutiny of threats to the F-35’s technological advantage, regardless of what country is the purchaser. This change in emphasis would bring F-35 procurement safeguards in line with the most recent U.S. National Defense Strategy’s appraisal of strategic competition, not terrorism, as the “central challenge to U.S. prosperity and security.”²⁰

Fundamentally, the assertion of this Comment is not that the United States should disregard the consequences to Israel’s QME when exporting defense articles to foreign nations—Israel has always been and will remain an important strategic partner in the Middle East. Rather, for export of a defense article as advanced and pivotal in the strategic competition for air dominance between the United States and near-peer adversaries like Russia and China, proposed legislation

¹⁸ OFF. OF THE SECDEF, NAT’L DEF. STRATEGY OF THE UNITED STATES OF AMERICA 2 (2018) [hereinafter *SECDEF*].

¹⁹ See Stone, *supra* note 9. Despite Israeli concerns over a deteriorating Israel-Turkey relationship, the justification for the removal of Turkey from the program did not rely on statutory consideration of Israel’s qualitative military edge, but rather on concerns of technologically compromising of F-35 stealth characteristics by Russian-origin SAM system purchased by the Turkish military. *Id.*

²⁰ SECDEF, *supra* note 18.

like the SECURE F-35 Export Act of 2020 should not include consideration of Israel's QME and instead focus heavily on whether such a transfer will result in the compromise of the technology used in the F-35.

I. FOUNDATIONS OF THE ARMS EXPORT AND CONTROL ACT,
ISRAEL'S QME, AND THEIR RELATION TO THE NATIONAL
DEFENSE STRATEGY

Arms export control rose to the forefront of the U.S. legislature in the mid-1970s.²¹ In a staggering figure, between 1963 and 1973, 128 countries sold and purchased \$2.5 trillion in military equipment, training, and repair services, with the largest single exporter being the United States.²² Foreshadowing modern aircraft export concerns, the driving incident that eventually led to the passage of the AECA was an attempted sale of a modern fighter aircraft to a Middle Eastern country—the Nixon Administration was exploring the possibility of selling the (at the time) state-of-the-art McDonnell-Douglas F-4 Phantom II to Saudi Arabia.²³ Concern grew in Congress because there was no mechanism for the legislative branch to review the transfers of defense articles. Accordingly, Senator Gaylord Nelson of Wisconsin and Representative Jonathan Bingham of New York drafted legislation containing a value threshold of \$25 million (the price of a squadron of F-5 fighter jets), over which any government-sponsored arms sale must be reported to Congress.²⁴ The Nelson-Bingham Act of 1974 also included a provision enabling either the House of Representatives or the Senate to enact a one-house veto anytime during a twenty-day window after the Congressional review.²⁵ The first major test of that statute came shortly after, in 1975, when the Ford Administration attempted to sell a surface-to-air missile system to another Middle Eastern country, Jordan.²⁶ The Nelson-Bingham Act fell short in achieving its goal of congressional

²¹ See THOMAS M. FRANCK, *FOREIGN POL'Y BY CONG.* 98 (1979).

²² See *id.*

²³ See *id.* at 99.

²⁴ See *id.*

²⁵ *Id.*

²⁶ Peter K. Tompa, *The Arms Export Control Act and Congressional Codetermination over Arms Sales*, 1 AM. U. INT. L. REV. 292, 295 (1986).

oversight for arms control for three primary reasons: (1) the twenty-day window was far too short for Congress to act; (2) many arms transfers had slipped past well under the \$25 million mark; and (3) finally, by the time the Executive notified Congress of an upcoming arms transfer, the transaction was nearly completed, making legislative modification or veto of the deal nearly impossible.²⁷ A new method was needed.

The AECA addressed these issues and was passed with provisions mandating regular, proactive reporting far in advance of proposed arms transfers greater than \$1 million.²⁸ Further, the AECA provided that no exports of defense articles sold by direct commercial sales may occur without a government authorization (such as a license).²⁹ Additionally, the Act requires that all defense articles received by foreign governments from the United States only be used for “legitimate self-defense,” and every sale is examined to ensure it should not:

contribute to an arms race, aid in the development of weapons of mass destruction, support international terrorism, increase the possibility of outbreak or escalation of conflict, or prejudice the development of bilateral or multilateral arms control or nonproliferation agreements or other arrangements.³⁰

Although its goals seem relatively straightforward and laudable, since its inception, the AECA has been used to jealously guard even the most minor advantages U.S.-origin defense articles have over potential competitors. Even if the physical hardware being sold is designed for civilian use, if it contains components subject to the AECA it cannot be sold to a foreign country unless authorization is provided from the executive branch under the framework set out in the AECA and the implementing regulations (the International Traffic in Arms Regulations). For example, in 2006, aerospace giant Boeing was fined \$15 million for selling commercial aircraft to China that

²⁷ *See id.* at 296.

²⁸ *Id.* at 301.

²⁹ *See* Arms Export Control Act, 22 U.S.C. § 2751–2799 (1976).

³⁰ 22 U.S.C. § 2778(a)(2).

were equipped with a specific gyroscopic microchip in their flight control boxes.³¹ Though the aircraft being sold were for civilian use, the defense articles integrated into the aircraft were subject to control under the AECA, and thus, the sale was determined to be a violation of the AECA.³²

The AECA also touches on technological development, so long as the technology being developed has a military application. The U.S. Department of Defense hired ITT Corporation to research night vision goggles and countermeasures against laser weapons.³³ As part of a cost-cutting measure, the company outsourced parts of its research to Singapore, China, and the United Kingdom, physically sending components and classified specifications overseas.³⁴ ITT was fined \$100 million and lost all rights to the intellectual property.³⁵

Academia is not immune to the AECA's reach either—in 2009, John Roth, a professor at the University of Tennessee, contracted with the U.S. Air Force to develop technologies to decrease drag on drone wings.³⁶ He shared technical data with Chinese and Iranian graduate students and kept technical data on his laptop during a trip to China. As a result, Professor Roth was sentenced to four years in prison.³⁷ The AECA thus serves as an effective deterrent against the disclosure of technology that provides a critical military or intelligence advantage to foreign nationals.

³¹ Federal Contractor Misconduct Database, *Arms Control Export Act Violation (QRS-Gyrochip)*, PROJECT ON GOV'T OVERSIGHT, <https://www.contractormisconduct.org/misconduct/913>.

³² *Id.*

³³ Associated Press, *ITT Fined \$100 Million for Illegal Export of Night-Vision Goggle Tech*, MERCURY NEWS (Mar. 27, 2007), <https://www.mercurynews.com/2007/03/27/itt-fined-100-million-for-illegal-export-of-night-vision-goggle-tech/>.

³⁴ *Id.*

³⁵ Drew Cullen, *ITT Fined \$100m for Shipping Night Vision Goggles to China*, THE REGISTER (Mar. 27, 2007), https://www.theregister.com/2007/03/27/itt_fined_for_illegal_exports/.

³⁶ Daniel Golden, *Why the Professor Went to Prison*, BLOOMBERG BUSINESSWEEK (Nov. 1, 2012), <https://www.bloomberg.com/news/articles/2012-11-01/why-the-professor-went-to-prison>.

³⁷ *Id.*

Considering the heavy emphasis on the preservation of U.S. technological superiority, the amendment to the AECA that was implemented through the Naval Vessel Transfer Act is odd because it places only one other nation on equal footing with the United States under its umbrella of technological safeguards—Israel.³⁸ The act specifically amended 28 U.S.C. § 2776(h) to describe the certification required from the executive branch for the export of any defense articles to a Middle Eastern country apart from Israel. Under 28 U.S.C. § 2776(h),

[a]ny certification relating to a proposed sale or export of defense articles or defense services under this section to any country in the Middle East other than Israel shall include a determination that the sale or export of the defense articles or defense services will not adversely affect Israel's qualitative military edge over military threats to Israel.³⁹

The changes also enumerate the specific factors analyzed when deciding the legality of an arms export to a Middle Eastern country:

- (A) a detailed explanation of Israel's capacity to address the improved capabilities provided by such sale or export;
- (B) a detailed evaluation of—
 - (i) how such sale or export alters the strategic and tactical balance in the region, including relative capabilities; and
 - (ii) Israel's capacity to respond to the improved regional capabilities provided by such sale or export;
- (C) an identification of any specific new capacity, capabilities, or training that Israel may require to address the regional or country-specific capabilities provided by such sale or export; and,

³⁸ 28 U.S.C. § 2776(h).

³⁹ 28 U.S.C. § 2776(h)(1).

(D) a description of any additional United States security assurances to Israel made, or requested to be made, in connection with, or as a result of, such sale or export.⁴⁰

To summarize, before exporting any military equipment to a Middle Eastern country other than Israel, the executive branch must provide a detailed analysis of Israel's ability to counter any weapon sold to one of their neighbors, any training Israel might need to counter any weapon sold to one of their neighbors, and any promises made to or requested by Israel that any weapon sold to their neighbors will not be used against them.⁴¹

The AECA provides no other nation with such comprehensive assurances that U.S.-origin defense articles will never be a threat. Japan and South Korea are important strategic partners in the Pacific.⁴² Japan and South Korea's stabilizing influence helps balance North Korean unpredictability and aggression, yet no provision of such strength exists for them. Poland has become increasingly important as the site of both U.S. and North Atlantic Treaty Organization ("NATO") military installations in providing a deterrent against further Russian annexation of territory in Eastern Europe, but Poland has no assurances equal to Israel's.⁴³ Djibouti, on the horn of Africa, provides a vital staging area for multinational forces to conduct peacekeeping missions throughout the continent, but Djibouti is also not provided any assurances.⁴⁴

Additionally, the Naval Vessel Transfer Act finally codified a legal definition of the QME.

⁴⁰ 28 U.S.C. § 2776(h)(2).

⁴¹ *Id.*

⁴² Nicholas Szechenyi, *The Case for U.S.-Japan-ROK Cooperation on Democracy Support in the Indo-Pacific Region*, CENT. FOR STRATEGIC & INT'L STUDIES (Nov. 3, 2021), <https://www.csis.org/analysis/case-us-japan-rok-cooperation-democracy-support-indo-pacific-region>.

⁴³ DEREK E. MIX, CONG. RSCH. SERV., R45784, POLAND: BACKGROUND AND U.S. RELATIONS 11 (2019).

⁴⁴ TOMAS F. HUSTED ET AL, CONG. RSCH. SERV., R45428, SUB-SAHARAN AFRICA: KEY ISSUES AND U.S. ENGAGEMENT 17 (2021).

The term “qualitative military edge” means the ability to counter and defeat any credible conventional military threat from any individual state or possible coalition of states or from non-state actors, while sustaining minimal damages and casualties, through the use of superior military means, possessed in sufficient quantity, including weapons, command, control, communication, intelligence, surveillance, and reconnaissance capabilities that in their technical characteristics are superior in capability to those of such other individual or possible coalition of states or non-state actors.⁴⁵

These controls made sense in the context of a post-9/11 U.S. National Defense Strategy focused on combating religious extremism and terrorism in the Middle East. A strong Israel could be an effective partner in dissuading the sponsorship of terrorist organizations. However, the principal challenges outlined in the 2018 National Defense Strategy do not fit that mold.

The central challenge to U.S. National Security, as outlined by the 2018 National Defense Strategy, is “the reemergence of long-term, strategic competition by what the National Security Strategy classifies as revisionist powers.”⁴⁶ The revisionist powers alluded to are Russia and China, with particular importance placed on the rapidly advancing modernization of both countries’ militaries with the goal of “displacement of the United States to achieve global preeminence in the future.”⁴⁷ Of note, both Russia and China have developed indigenous fifth-generation fighter aircraft of their own—the Sukhoi Su-57 and Chengdu J-20 respectively—with capabilities comparable to the F-35.⁴⁸ Stealth technology enables the People’s Liberation Army Air Force to force less modernized militaries out of Indo-Pacific contested zones in the South China Sea and allows the Russian Air Force to back with credible force their government’s use of disinformation in subverting democratic processes and national

⁴⁵ 28 U.S.C. § 2776(h)(3).

⁴⁶ SECDEF, *supra* note 18, at 2.

⁴⁷ *Id.*

⁴⁸ ANDREW S. BOWEN, CONG. RSCH. SERV., R46937, RUSSIAN ARMS SALES AND DEFENSE INDUSTRY 10 (2021); CAITLIN CAMPBELL, CONG. RSCH. SERV., R46808, CHINA’S MILITARY: THE PEOPLE’S LIBERATION ARMY (PLA) 26 (2021).

sovereignty in Georgia, Crimea, and Ukraine.⁴⁹ The National Defense Strategy notes that “these trends, if unaddressed, will challenge our ability to deter aggression.”⁵⁰ Protection of every technological advantage the United States has over its adversaries is crucial in bolstering our international partners against coercion by threat of force, and should thus be the primary focus of any legislation to safeguard military technologies against unauthorized access. Pending legislation seeks to address these concerns but remains rooted in the traditional adherence to doctrines focused on protecting Israel’s QME. However, recent developments in the F-35 program partnership with Turkey highlight the threat that exporting F-35s to nations with lax technological safeguards can pose.

II. REMOVAL OF TURKEY FROM THE F-35 PROGRAM OVER TURKEY-RUSSIA ARMS PURCHASE

Turkey was one of the original partner nations in the development of the F-35.⁵¹ Turkish Aerospace Industries was to be one of two manufacturers charged with the fabrication of F-35 central fuselage assemblies.⁵² The assemblies would be produced in Turkey, generating jobs and revenue for the Turkish defense industry, and then assembled in the United States with the rest of the internationally manufactured components.⁵³ Due to concerns of technological espionage, the United States has elected to retain sole rights over the software source code for the F-35’s computer systems.⁵⁴

⁴⁹ *Id.*

⁵⁰ SECDEF, *supra* note 18, at 3.

⁵¹ Richard Dudley, *Program Partners Confirm Support for F-35 Joint Strike Fighter*, DEF. UPDATE (Mar. 5, 2012), https://defense-update.com/20120305_program-partners-confirm-support-for-f-35-joint-strike-fighter.html.

⁵² Mike Stone & Humeyra Pamuk, *Despite Ankara’s Claims, U.S. Can Make F-35 without Turkish Parts: Sources*, REUTERS (Mar. 28, 2019), <https://www.reuters.com/article/us-usa-turkey-f35/despite-ankaras-claims-u-s-can-make-f-35-without-turkish-parts-sources-idUSKCN1R90CY>.

⁵³ *Id.*

⁵⁴ Jim Wolf, *U.S. to Withhold F-35 Fighter Software Code*, REUTERS (Nov. 24, 2009), <https://www.reuters.com/article/us-lockheed-fighter-exclusive/u-s-to-withhold-f-35-fighter-software-code-idUSTRE5AO01F20091125>.

However, in 2018, the U.S. Senate passed a bill halting the delivery of completed F-35s to Turkey after the Turkish military expressed its intent to purchase the Russian-made S-400 SAM system.⁵⁵ The S-400 is a next-generation SAM designed to combat fifth-generation U.S. aircraft. The concern of compromising the F-35's technological advantage originates from the highly advanced data link systems the F-35 uses to network across the battlefield. The S-400's systems are also highly networked, with communication nodes that can broadcast and track aircraft for hundreds of miles.⁵⁶ In order to successfully integrate a Russian SAM system into a preexisting NATO network, Turkish and U.S. technicians would need to install NATO data link receivers on the Russian equipment that could identify and communicate with F-35s to ensure the system did not fire on a friendly aircraft.⁵⁷ Russian military technicians would also need to be on scene to set up and train Turkish forces on how to use their new weapon system. This effectively compromises the F-35's stealth capabilities when flying over an S-400. Such a situation is highly problematic and is akin to telling the anti-aircraft missiles precisely what to look for to lock on to an F-35. Russian-made SAM systems would then be able to match the minute radar signatures detected by their targeting radars and learn over time exactly how to track, target, and shoot down any F-35.

The primary concern, then, is not even that Turkey would voluntarily share this classified information with Russia, but rather “that malware on the S-400 or Russian workers operating, setting up, or maintaining the system would access the info.”⁵⁸ Turkey, however, insisted on purchasing the S-400 as its primary SAM system. Because

⁵⁵ Patricia Zengerle, *U.S. Senate Defense Bill Would Bar Turkey from Buying F-35 Jets*, REUTERS (May 24, 2018), <https://www.reuters.com/article/us-usa-defense-congress-turkey/u-s-senate-defense-bill-would-bar-turkey-from-buying-f-35-jets-idUSKCN1IP3Q8>.

⁵⁶ Kyle Rempfer, *Here's How F-35 Technology Would be Compromised if Turkey also Had the S-400 Anti-Aircraft System*, AIR FORCE TIMES (Apr. 5, 2019), <https://www.airforcetimes.com/news/your-military/2019/04/05/heres-how-f-35-technology-would-be-compromised-if-turkey-also-had-the-s-400-anti-aircraft-system/>.

⁵⁷ *Id.*

⁵⁸ *Id.*

the risk of compromising the technology security of the F-35 was simply too great, in 2019, the United States removed Turkey from the program.⁵⁹ Delivery of F-35s to Turkey was permanently suspended, all Turkish pilots were banned from training to fly the F-35, and Turkish Aerospace Industries was removed from the manufacturing process.⁶⁰

This example highlights the most significant danger when exporting advanced weapons systems like the F-35. No matter how hard the United States may try to safeguard its military technology, the actions of a partner nation, simply by purchasing equipment from a different country, can radically upset the balance of power. This danger should be the singular concern for lawmakers when attempting to legislate restrictions relating to the export of the F-35. Fortunately, the problem was identified in time and solved in the case of Turkey. It is important, then, that a dogmatic approach to preserving Israel's QME does not blind legislative drafting when considering exporting sensitive military technologies to Israel.

III. CONCERNS OVER ISRAEL-RUSSIA AND ISRAEL-CHINA ARMS EXPORTS

Turkey is not the only U.S. ally with a defense trade relationship with Russia. Though Israel has never attempted to integrate Russian or Chinese hardware directly into its defense systems, there are significant military-industrial relationships that lawmakers should consider when evaluating detriments to Israel's QME against potential detriments to the United States' QME in the realm of aerospace technology.

In 2004, Israel entered into a \$1.1 billion agreement with India and Russia to export the Israeli-made and used EL/W-2090 radar

⁵⁹ Jonathan Marcus, *US Removes Turkey from F-35 Fighter Jet Programme*, BBC (July 17, 2019), <https://www.bbc.com/news/world-us-canada-49023115>.

⁶⁰ Phil Stewart, *Turkish F-35 Pilots no Longer Flying at U.S. Base: Pentagon*, REUTERS (June 10, 2019), <https://www.reuters.com/article/us-usa-turkey-f35/turkish-f-35-pilots-no-longer-flying-at-us-base-pentagon-idUSKCN1TB2LU>.

system.⁶¹ This system is an airborne radar designed for airborne warning and control aircraft, whose mission is to network with friendly aircraft and direct the flow of a battle from their eyes in the sky.⁶² India wanted to purchase the radar and integrate it into Russian-made Ilyushin IL-76 transport aircraft. Israel manufactured the radars, turned them over to technicians who installed them on the aircraft and sold the assembly to the Indian Air Force.⁶³

Furthermore, Israel has engaged in *quid pro quo* arms deals with Russia to attempt to strangle Iranian military forces of weaponry. In 2019, Israel made known its agreement with Russia to halt sales of Israeli arms to Georgia and Ukraine, both countries whose democratic process had been subverted by Russia, in exchange for Russia's agreement not to sell arms to Iran, Israel's most vocal opponent in the Middle East.⁶⁴ Israel Aerospace Industries also supplies unmanned reconnaissance drones to Russia.⁶⁵

China has had even closer relations with Israel, even before formal diplomatic relationships were in place.⁶⁶ Strikingly, Israel was the first Middle Eastern country to recognize the People's Republic of China as the singular, official Chinese government.⁶⁷ While, the Israeli defense industry has benefited greatly from U.S. military exports under the umbrella of protecting Israel's QME, Israel has attempted to

⁶¹ *Israel and India Seal Radar Deal*, BBC (Mar. 5, 2004),

http://news.bbc.co.uk/2/hi/south_asia/3536901.stm [hereinafter *BBC*].

⁶² Anna Ahronheim, *India May Close \$800M Deal with Israel for Airborne Early-Warning Systems*, THE JERUSALEM POST (Feb. 3, 2019, 4:21 PM), <https://www.jpost.com/israel-news/india-may-close-800-deal-with-israel-for-airborne-early-warning-systems-579548>.

⁶³ BBC, *supra* note 61.

⁶⁴ *Israel and Russia Coordinate Arms Sale Preventing Deals with Iran*, MIDDLE EAST MONITOR (Dec. 13, 2019), <https://www.middleeastmonitor.com/20191213-israel-and-russia-coordinate-arms-sale-preventing-deals-with-iran/>.

⁶⁵ Yaakov Katz, *How Israel Sold Russia Drones to Stop Missiles from Reaching Iran*, THE JERUSALEM POST (Feb. 3, 2017), <https://www.jpost.com/magazine/books-israel-and-the-saleof-advanced-drones-to-russia-480326>.

⁶⁶ Maya Cypris, *The Evolving Nature of Relations Between China & Israel*, THE JERUSALEM POST (May 26, 2017, 11:59 PM), <https://www.jpost.com/blogs/the-new-american-dream-is-china/the-evolving-nature-of-relations-between-china-and-israel-493781>.

⁶⁷ Xiaoxing Han, *Sino-Israeli Relations*, 22 J. OF PALESTINE STUD. 62, 62 (1993).

use its experience with advanced defense technology to generate income by providing China Soviet-era platforms integrated with modern airborne early warning radar systems, often with great alarm by U.S. strategists.⁶⁸ A prime example of this was the U.S. veto in 2000 of an Israeli agreement to sell the Phalcon airborne early warning radar system to the People's Liberation Army Air Force. The *Israel Journal of Foreign Affairs* asserts that "the ramifications of that decision are still felt in the corridors of power in Jerusalem and Beijing."⁶⁹ With a policy of denial in place against the export of U.S. defense articles to China and the threat of U.S. sanctions for any significant arms transaction with Russia, China has frequently turned to Israel's talented high-tech military-industrial complex for technology. Israeli aerospace companies are heavily involved with Chinese efforts to modernize their space infrastructure, working jointly on semiconductors, artificial intelligence, satellite communications, and other dual-use technologies.⁷⁰ China's involvement in the Israeli defense technology sector has not gone uncriticized, however. Efraim Halevy, the ninth director of the Mossad (Israel's clandestine intelligence agency) and the fourth head of the Israeli National Security Council, has argued that significantly increased Chinese involvement could lead to a straining of strategic relations with the United States.⁷¹

Perhaps most emblematic of the innate tension between Chinese and U.S. courtship of Israeli attention is a small section of Haifa, Israeli port city that processes the largest number of Israeli passengers annually and a substantial portion of Israeli commerce shipping.⁷² In 2012, the People's Liberation Army Navy anchored at Haifa naval base as part of a joint visit to celebrate two decades of cooperation between the militaries of the two nations. In 2018, 180

⁶⁸ Yoram Evron, *Between Beijing and Washington: Israel's Technology Transfers to China*, 13 J. OF EAST ASIAN STUDIES 503, 503, 506 (2013).

⁶⁹ Sameer Suryakant Patil, *Understanding the Phalcon Controversy*, 2 ISRAEL J. OF FOREIGN AFFS. 91, 91 (2015).

⁷⁰ Shira Efron et al., *Chinese Investment in Israeli Technology and Infrastructure*, RAND CORP. 58 (2020).

⁷¹ Shira Efron et al., *The Evolving Israel-China Relationship*, RAND CORP. 110-11 (2019).

⁷² Arie Egozi, *Israel Rejects US Plan to Inspect Chinese Harbor at Haifa*, BREAKING DEF., Feb. 3, 2021.

acres of the port of Haifa was transferred to the Shanghai International Port Group as part of a twenty-five-year lease.⁷³ This pattern of military cooperation leading to economic entanglement, even in just the context of a small portion of an important port city, is indicative of Chinese objective of increasing military, economic, and technological ties with Israel.

Washington and Beijing are competing over areas of control and patronage. The question of influence over Israel is very important to both countries. From the American perspective, Israel is its oldest and most important ally in the Middle East and one of the current administration's closest friends. From Beijing's perspective, the opportunity to increase its influence on a country that maintains such close ties with the US can have deep implications for China's international status. Israel's renunciation of American patronage, even to a small degree, would signal to other Western states and to the US itself that its power is declining. This could help China position itself as an alternative power – one with an economic focus and without an interest in direct political and military intervention.⁷⁴

None of these items, though, are necessarily indicative of bad faith. Certainly, sovereign nations and private companies have the right to do business with whomever they choose. Moreover, interconnectedness and tighter economic ties can even deescalate potentially dangerous diplomatic situations. However, when viewed in totality, and with the example of the disastrous potential compromise of F-35 technological advantages by Turkey's flirtation with Russian military integration, it becomes clear the Israel's QME is not the driving factor on which U.S. arms export control law should be based.

⁷³ Roie Yellinek, *US-Chinese Competition over the Haifa Port*, BEGIN-SADAT CENT. FOR STRATEGIC STUDIES (Jan. 23, 2019), <https://besacenter.org/perspectives-papers/china-haifa-port/>.

⁷⁴ *Id.*

IV. THE SECURE F-35 EXPORTS ACT OF 2020

On 10 October 2020, Senator Robert Menendez co-sponsored S.4814 – The SECURE F-35 Exports Act of 2020. It contains five sections with the goal “[t]o ensure that sales, exports, or transfers of F-35 aircraft do not compromise the qualitative military edge of the United States or Israel, and for other purposes.”⁷⁵ Under Section two, the Act mandates a recurring assessment of Israel’s military disadvantages every four years.⁷⁶ Section three of the Act, however, takes a step toward emphasizing protection of the United States’ technological advantages in the realm of F-35 procurement:

Not later than 15 days before a proposed sale, export, or transfer to a foreign country (other than a member state of the North Atlantic Treaty Organization, Australia, Israel, Japan, Republic of Korea, or New Zealand) of F-35 aircraft (including any variant or successor combat aircraft) is submitted to Congress pursuant to the requirements of section 36 of the Arms Export Control Act (22 U.S.C. 2776), the President shall submit to the appropriate congressional committees a report with an assessment of the risks presented by such sale, export, or transfer to the security of the United States, including the critical military and technological military advantage such aircraft provide to the United States Armed Forces.⁷⁷

Thus, this piece of legislation’s primary focus is providing the needed risk assessment relating to preserving the F-35’s technological advantage over near-peer adversaries before approving an export. Subsection two of Section three is similar to the amendments of AECA implemented by the Naval Vessel Transfer Act and lays out specific criteria that must be considered when assessing the threat to U.S. airpower’s current technological advantage. The assessment required under the SECURE F-35 Exports Act includes:

⁷⁵ Israel and United States Security Enhancement for F-35 Exports Act of 2020, S. 4814, 116th Cong.

⁷⁶ *Id.* at § 2.

⁷⁷ *Id.* at § 3.

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- (A) a comprehensive overview of the potential compromise of United States military technology used in F-35 aircraft by potential foreign intelligence activities;
- (B) a description of the protective measures that will be taken to safeguard against such compromise; and,
- (C) a description of the counter-measures that could be taken should such compromise occur.⁷⁸

The assessment also requires a president to certify to Congress that “such a sale, export, or transfer does not present a significant danger of compromising the critical military and technological military advantage such aircraft provide to the United States Armed Forces.”⁷⁹ This subsection gives a concise roadmap to prevent erosion of the U.S. Air Force’s capabilities in pursuing the directives of the 2018 National Defense Strategy. Problems like that of the Turkish integration of Russian SAM systems into NATO networks can be anticipated and avoided with the proper operational risk management protocols this legislation provides.

However, Section four relapses into the traditional reliance on the protection of Israel’s QME as a justification for preventing F-35 exports to other Middle Eastern countries. It does so, however, in only four instances, all of which copy the same following text:

- (a) CERTIFICATIONS BEFORE SALE.—Not later than 30 days before concluding a Letter of Offer and Acceptance (or corresponding agreement or contract) for the sale of, or concluding a contract for the manufacture of, F-35 aircraft to be transferred to any country in the Middle East other than Israel, the President shall submit to the Committee on Foreign Relations of the Senate and the Committee on Foreign Affairs of the House of Representatives a certification, together with a report providing a detailed justification therefor, that—

⁷⁸ *Id.*

⁷⁹ *Id.*

(1) the transfer of F-35 aircraft to the recipient country will not compromise or undermine Israel's qualitative military edge, as defined in section 36(h) of the Arms Export Control Act (22 U.S.C. 2776(h)).⁸⁰

This specific subsection, 4(a)(1), along with subsections 4(a)(2), 4(b)(1), 4(b)(3), and 4(c)(1) are the last vestiges of Israel's QME present in this bill otherwise concerned primarily with preserving American technological advantages throughout the F-35 procurement cycle. The sub-points surrounding these four isolated sections are clearly in response to lessons learned from Turkey's involvement in the F-35 program, and thrust directly toward concrete, actionable assurances, which can be used to enforce proper information security in countries who wish to be considered as F-35 export customers. They are quantifiable requirements that on their own do not contemplate Israel's QME in any way, and represent what arms export control legislation should be primarily concerned with:

(2) . . . the recipient country will—

(A) not utilize them against allies and partners of the United States;

(B) not transfer or share any component technology of the F-35 aircraft to any third party or third country; and

(C) ensure sufficient security against hostile technical collection efforts against the aircraft that could compromise militarily significant or otherwise sensitive information;

(3) the recipient country has provided specific, reliable, and verifiable assurances to the United States that it will not use these aircraft to commit, or enable the commission of, a violation of international humanitarian law or internationally recognized human rights;

(4) if the recipient country violates such assurances, the United States will have the means to address and ameliorate these

⁸⁰ *Id.* at § 4.

violations to reduce the impact on the security of Israel or on the foreign policy and national security interests of the United States, including a listing of such means; and

(5) the United States will require technology security measures on the delivery, operation, storage, and servicing of such aircraft sufficient to significantly reduce the danger of compromise of the military technology.⁸¹

What is apparent is that if the portions of this bill alluding back to Israel's QME were simply removed, the remaining text would be a perfect check against the compromise of sensitive information that could be deleterious to the F-35's technological advantages.

Rewritten in that manner, the SECURE F-35 Exports Act of 2020 would open the door to progressive Middle Eastern countries with effective technology security programs and minimal defense trade with Russia or China to purchase F-35s. This would increase their interoperability with the United States as a potential coalition partner as well as greatly boost the partnership building capacities of the other seven F-35 partner countries to train and work alongside their Middle Eastern counterparts. Instead of just European and American F-35s flying at Red Flag, there could be a whole host of partner nations—all of which were interoperable and capable of standing firm against efforts of displacement or encroachment on sovereignty by either of the revisionist powers identified in the 2018 National Defense Strategy.⁸² The United Arab Emirates has already taken steps towards purchasing F-35s. The United Arab Emirates' desire to become a participant in the program is a large part of what drove their establishment of diplomatic relations with Israel in 2020.⁸³ The capabilities the F-35 brings to any nation's Air Force can be a carrot that encourages formerly reluctant nations to the negotiating

⁸¹ *Id.*

⁸² SECDEF, *supra* note 18, at 2.

⁸³ Raphael Ahren, *Emiratis are 'Enthusiastic' about Peace with Israel*, Senior UAE Official Says, THE TIMES OF ISRAEL (Sept. 13, 2020), <https://www.timesofisrael.com/emiratis-are-enthusiastic-about-peace-with-israel-senior-uac-official-says/#gs.g1l3ga>.

table and perhaps generates more stability in a region that greatly needs it.

CONCLUSION

United States' technological superiority has often proven to be the deciding factor in the success of peacekeeping, deterrence, and military operations around the globe since the end of the Second World War. As the 2018 National Defense Strategy states:

By working together with allies and partners we amass the greatest possible strength for the long-term advancement of our interests, maintaining favorable balances of power that deter aggression and support the stability that generates economic growth. When we pool resources and share responsibility for our common defense, our security burden becomes lighter. Our allies and partners provide complementary capabilities and forces along with unique perspectives, regional relationships, and information that improve our understanding of the environment and expand our options. Allies and partners also provide access to critical regions, supporting a widespread basing and logistics system that underpins the Department's global reach.⁸⁴

However, interoperability and partnership capacity cannot be built by sacrificing technological security. The F-35 is too advanced a weapon to have its advantages destroyed by poor technology security, even by partner nations who have purchased it. The AECA and Naval Vessel Transfer Act served those goals well when the goals were focused on supporting Israel as a stabilizing force against terrorism in the Middle East.

However, tomorrow's conflicts are much more subtle and move with the inertia of great powers flexing against one another across the globe. The legislature needs to take positive action in enacting statutes that preserve the United States' current technological advantages. The traditional model of first and foremost preserving Israel's QME carries with it more risks than it ever has. The SECURE

⁸⁴ SECDEF, *supra* note 18, at 8.

F-35 Exports Act of 2020 was a good first step in drafting legislation with the potential to enable secure participation by multiple potential partner nations with proper technology security in place. However, to truly be effective, the portions of the SECURE F-35 Exports Act of 2020 which focus on Israel's QME should be eliminated to allow new and potentially fruitful connections to grow and thrive.

