

Happy Birthday Invesco Aerospace & Defense ETF !
Celebrating 20 Years on the New York Stock Exchange.
Launched 26 October 2015.

5-Star Morningstar Rating

15-Year Average Total Return: 17.07 !!!

AUM: \$6.7 Billion

COMMENTARY

Investors in the defense sector have obviously enjoyed 2025 so far. No matter the methodology or whether you focused on the US, Europe, or international defense stocks, your returns have likely significantly outperformed the broader US market. In some cases, concentration and security selection (even when talking about passive index ETFs) have driven out-performance. If you overweighted large capitalization stocks like GE (up 81% YTD), RTX (up 46%), and/or Palantir (up 143%) or small-cap stocks that have become mid-cap stocks like AVAV (up 157%) and KTOS (up 290%), you've outgained the benchmark SPADE Defense Index (which held all of these). If you owned stock in Lockheed Martin (up 5% YTD, down 15% over the 1-year), you've had a drag on your portfolio. Overall, with the SPADE Defense Index up 38% and the S&P 500 up 14% YTD, you can't complain. As Invesco's Aerospace & Defense ETF (NYSE: PPA) gets ready to celebrate its 20-year anniversary of going live on the New York Stock Exchange (October 26), it has a 17% return over 15 years. No wonder Morningstar gives it a 5-star rating.

But as the saying goes—"past performance is not indicative of future returns." So let's turn to what in investors in Aerospace & Defense should focus on...

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SPADE Defense Index Statistics

9/30/25 Close 18,285.36
12/31/24 Close 13,493.03

All-time Intraday High:
30 September 2025 18,299.05

All-time Closing High:
30 September 2025 18,285.36

Price Return	SPADE Defense	S&P 500
3Q25	10.28%	7.79%
2Q25	21.45%	10.57%
YTD	35.52%	13.72%
2024	24.88%	23.31%

SPADE Defense Index Sept 2025 Rebalance (see details on page 3)

Added: Planet Labs (PL), Redwire (RDW), AIRO Group (AIRO), and Voyager Technologies (VOYG).

Removed: Acquisition of Triumph Group (TGI) closed in 3Q25.

Corporate Actions Affecting the Index in 2025

- Boeing is acquiring Spirit AeroSystems with an anticipated close during 4Q25 following the sale of SPR's Airbus commercial business.

- Honeywell plans to spin its advanced materials unit, valued at \$11 billion, into a publicly traded company on 30 October and separate its Aerospace & Automation businesses in 2H2026.

Dividend

Invesco's Aerospace and Defense ETF issued a dividend of \$0.4549 per share on 22 September 2025. Over the preceding 12 months, \$0.9713 per share was returned.

Licensed Products

Exchange Traded Fund (ETF)

The SPADE Defense Index is licensed by Invesco and serves as the underlying index for the Invesco Aerospace & Defense ETF (NYSE Arca: PPA).

A Morningstar 5-Star Fund

★★★★★

Options Trading

Options on the Invesco Aerospace and Defense ETF (ticker: PPA) are available.

Continued from Page 1

(1) The State of the World—We have long maintained that what drives defense stocks is never specifically peace or war but our fear; and supporting defense activities is the reaction to protect the status quo and create stability. This past month, I've received two media requests to comment on the blast radius of a nuclear bomb dropped on Oxford and Cambridge in the UK and which cities are most likely to be hit in the event of World War III. Is it any wonder that defense stocks are up.

(2) All markets are exhibiting strength...

- (a) US defense spending
- (b) European and global defense spending
- (c) Commercial aerospace
- (d) Adjacent industries—space, homeland security

(3) The Government Shutdown

- (a) How long will it last?
- (b) What impact will it have on defense firms?

Regarding (3a) The first challenges will come on October 15th when military salaries were next due to be paid (or if they will be asked to serve without pay) and if air traffic controllers working without pay decide to call in sick and delay flights. If we get past these, a shutdown could go on for a while. The White House has stated that it doesn't have any interest in forcing Congress to resolve this, so it simply comes down to whether Democrats or Republicans blink first.

As far as (3b), the impact to defense contractors—a number of contracts have been guaranteed that will keep the money flowing, especially those related to missile production and other critical national security hardware. DoD has formed a Munitions Acceleration Council seeking to double, if not triple or quadruple, production on weapons it sees as critical for a possible conflict; this includes Patriot interceptors, Long-range anti-ship missiles, the Standard Missile-6, Precision Strike Missiles, and Joint Air-Surface Standoff Missiles.

While most companies in the SPADE Defense Index enjoy solid balance sheets and continued revenues from commercial aerospace and international sales, it will not be a surprise if near-term revenues and earnings come in weaker than originally forecast considering many defense contractors support NASA and other federal government agencies that are impacted by the shutdown.

(4) The War in Gaza—Multiple nations have been a part of this conflict between Israel and Hamas—including Qatar, Lebanon, Iran, Yemen, and Syria—however, a truly wide-scale escalation has not happened. As we enter year 3, the conflict in the region is entering a new phase—a peace deal between Hamas and Israel has reportedly been agreed to. Even if all of the hostages held by Hamas are released and Hamas agrees to disarm, history says this is likely just a lull before the next storm. Peace and disarmament in the region never seems to last. With the animosity and attacks on civilians likely persisting, even in an era of “peace,” future conflict almost seem inevitable. Regional spending on defense is likely to remain elevated.

(5) The Russia-Ukraine Conflict—It continues unabated. Russia has escalated hostilities using an increasing number of drones and missiles and now, reportedly, by recruiting Arab fighters to supplement the North Korean troops they already have in the trenches. Ukraine is facing a shortage of air defense systems and missiles. Despite this, they have been holding up the Russian onslaught admirably—even taking back territorial gains through local counteroffensives in the Dunbas, particularly Pokrovsk and Dobropillya. Ukrainian forces have been expanding their affinity for using long-range and tactical drone strikes on military targets inside Russia, however, without a US and NATO blessing to target internal Russian targets using Western supplied missiles and systems, they remain fighting with one hand tied behind their back. The most likely options for an end to the hostilities are: (1) The death of Vladimir Putin, (2) An economic collapse of the Russian economy leads to a regime change, (3) Ukraine is provided the weapons needed to take the fight to Russia, (4) Ukraine is eventually over matched and agrees to cede territory. None of these four options are expected to lead to a cessation of hostilities in the coming weeks.

(6) Russia's Future Plans—Recent aircraft and drone incursions into NATO airspace have Western analysts wondering if this was simply an accident or incompetence or is it really a test by the Kremlin to see whether or not NATO will directly respond. There are many that believe that Ukraine is simply the first domino in Putin's plan and that a direct attack by Russia of a NATO member is likely to happen following a completion of its military action in Ukraine. It is believed that China is monitoring the NATO response as it plans whatever action it is considering with Taiwan, seeing how far one can push the West before they actually respond.

(7) New Alliances—Western nations are allied under the NATO banner. Russia, China, Iran, and North Korea are working closely together and formed their own axis of allied nations. The latest agreement—though it appears not widely reported—is the Strategic Mutual Defence Agreement (SMDA) signed between Saudi Arabia and Pakistan on 17 September 2025 that commits both nations to treat an attack on one as an attack on both.

SPADE Defense Index Constituents (Changes)

Added: Planet Labs (PL)—provides remote sensing imagery to the defense and intelligence communities.

Added: Redwire (RDW)—Acquired Edge Autonomy which is involved with autonomous vehicles and works directly with warfighters in the field to adapt to real-time mission needs.

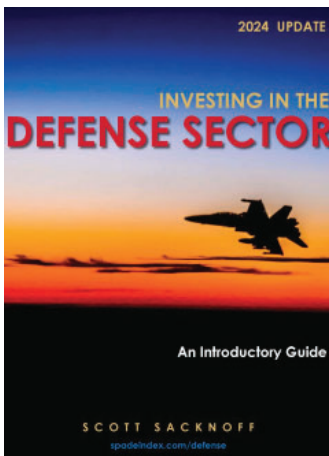
Added: AIRO Group (AIRO)—Specializes in drones and avionics used for autonomous defense activities.

Added: Voyager Technologies (VOYG)—Involved with solid fuel propulsion technologies, advanced guidance and control, AI for defense applications, signals intel, and satellites.

Removed: The acquisition of Triumph Group (TGI) by private equity closed on 24 July 2025.

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The US Patent and Trademark Agency recently awarded SPADE Indexes LLC a registered trademark for TrueCap®, an index methodology the firm developed that is designed to fix a problem with sector/thematic indexes—enabling them to include companies that are highly diversified or valued differently than the other companies operating in the space.



A New Update to this Classic Guide!

Free Download: [HTTPS://SPADEINDEX.COM/FILES/INVESTING DEFENSE SECTOR GUIDE.PDF](https://spadeindex.com/files/investing_defense_sector_guide.pdf)

A 58-page educational guide designed to provide investors with a basic understanding of the defense industry and its activities, what drives it, and the unique risks associated with investing in it. It is not meant to recommend or promote any individual company or fund. It is offered for free and can be shared by advisors, analysts, and investors without having to sign in or subscribe.

By The Numbers (3Q25)

\$116 Billion – EU defense procurements in 2025, up 39% from 2023 according to the European Defense Agency.

\$115 Billion – Pentagon launched the Scalable Homeland Innovative Enterprise Layered Defense (SHIELD) program. The 10-year contract aims to streamline procurement and accelerate the development of advanced systems, integrate emerging technologies to counter evolving missile threats.

\$59.8 Billion – Japan's Defense Ministry request for defense spending in FY26, a record, aiming to enhance defensive capabilities with long-range missiles and drones.

\$50+ Billion – China and the US are close to a deal for 500 Boeing jets, the first major Boeing deal in China since 2017.

\$50 Billion – Korean Air for 100 Boeing aircraft with GE engines (\$35.6B) and to GE for engine maintenance (\$13.7B).

\$50 Billion – The Defense Logistics Agency to RTX, a 20-yr umbrella contract to supply systems, spare parts, and services for the Patriot Missile program.

\$25 Billion (list price) – Turkish Airlines placed a record order for up to 75 - 787 Dreamliner aircraft and up to 100 - 737 Max jets for delivery by 2033.

\$14.1 Billion – US Air Force to General Atomics to develop and retrofit its MQ-9 Reaper drone fleet.

\$10 Billion – US Army to Palantir, a 10-yr agreement to streamline software procurement, consolidating 75 contract vehicles.

\$7.8 Billion – DoD to RTX (\$3.5B) and Lockheed Martin (\$4.3B) for additional missiles.

\$5 Billion – US Army to RTX for the Coyote Missile System including launchers, interceptors, and radars. The contract runs through 2033.

\$2.88 Billion – US Navy to RTX Pratt & Whitney for 141 additional F135 propulsion systems.

\$2.8 Billion – US Space Force to Boeing for the Evolved Strategic Satcom system.

\$1.85 Billion – US State Dept approval for Poland for logistics and support of the F-35 fleet including GE engine component improvement work.

\$1.7 Billion – US Army to RTX for low-rate initial production of the LTAMDS for early production of the advanced radar system that will eventually replace the Patriot radar.

\$1.64 Billion – Elbit from an undisclosed European country for advanced defense systems over the next 5 years.

\$1.64 Billion – CACI for military logistics at Scott Air Force Base.

\$1.6 Billion – New Zealand to Lockheed Martin Sikorsky for five MH-60R Seahawk helicopters and other items.

\$1.5 Billion – US Strategic Command to General Dynamics for enterprise modernization including use of AI.

\$1.25 Billion – Army to General Dynamics GDIT for IT modernization and mission command support in Europe and Africa over a 7-year period.

\$1.1 Billion – State Department approved a sale of 405 AIM-120D-3 AMRAAM missiles to Finland.

\$972 Million – US Air Force to Northrop Grumman for modeling and simulation services, through 2030.

\$760 Million – US Air Force to RTX to update AMRAAM electronics.

\$760 Million – US Air Force to RTX for production of AMRAAM missiles to be delivered to 19 countries.

\$642 Million – The US Navy to General Dynamics Electric Boat, a contract mod to continue supporting the production of Virginia-class submarines.

\$602.9 Million – US Navy to RTX for repair and supply spare parts for the AESA radar used in F/A-18 aircraft.

\$579 million – US Army to Raytheon for Stinger missiles.

\$499 Million – AeroVironment from the US Air Force Research lab to develop tech to protect troops and equipment from EM radiation.

Undisclosed – ViaSat awarded a multi-year contract by US Space Force to develop an advanced encryption system aimed at protecting satellites from cyber threats.

Undisclosed – Belgium will purchase AIM-9X Sidewinder missiles for its F-35 fighter jets.

3Q25 Leaders

1	Planet Labs	112.79%
2	Viasat Inc	100.68%
3	Kratos Defense	96.71%
4	Mercury Systems	43.71%
5	Karman Holdings	43.41%
6	TTM Technologies	41.11%
7	Rocketlab	33.94%
8	Palantir	33.82%
9	AAR Corp	30.20%
10	BWX Technologies	27.98%

3Q25 Laggards

1	Redwire	[44.85%]
2	Iridium	[42.13%]
3	C3.ai	[29.52%]
4	Voyager Tech.	[24.13%]
5	AIRO	[20.23%]
6	Standard Aero	[13.74%]
7	Transdigm	[13.37%]
8	AXON Int'l	[13.32%]
9	SAIC	[11.76%]
10	Honeywell	[9.61%]

ETF Statistics (NYSE Arca: PPA)
Invesco Aerospace & Defense

Exchange / Ticker	NYSE / PPA
Assets (9/30/2025)	\$6.7 B
Closing Price (9/30/2025)	\$155.45
Dividend Yield*	1.04%
3Q2025 Volume**	13.99 Million
Turnover*	15%
Morningstar Rating***	***** (5-Star)

* Morningstar 9/30/25 ** Yahoo Finance - 9/30/2025 *** Morningstar 8/31

Capture Ratio	3-Yr	5-Yr	10-Yr
Upside	117	112	109
Downside	60	67	81

YTD Results

1	Kratos Defense	246.36%	31	General Dynamics	29.42%
2	Viasat Inc	244.30%	32	Teledyne Tech	26.20%
3	Planet Labs	221.29%	33	CACI Intl	23.44%
4	Palantir	141.20%	34	Boeing Co	21.91%
5	Karman Holdings	140.73%	35	V2X	21.45%
6	TTM Technologies	132.73%	36	AXON International.	20.75%
7	AeroVironment	104.62%	37	Parker Hannifan	19.22%
8	Elbit Systems	97.54%	38	CAE	16.78%
9	Rocketlab	88.10%	39	Amentum	13.84%
10	Blacksky	86.84%	40	Spirit Aerosystems	13.44%
11	Mercury Systems	84.29%	41	Cadre Holdings	13.03%
12	General Electric	80.33%	42	Eaton	12.78%
13	Howmet	79.42%	43	Textron	10.46%
14	Amphenol	78.19%	44	Standard Aero	10.26%
15	BWX Technologies	65.52%	45	Keysight Tech.	8.90%
16	Curtiss Wright	53.00%	46	LOAR Holdings	8.20%
17	Huntington Ingalls	52.36%	47	Moog Inc.	5.50%
18	Woodward	51.85%	48	Transdigm	3.95%
19	Ducommun	51.01%	49	Lockheed Martin	2.73%
20	OSI Systems	48.86%	50	Hexcel	0.00%
21	AIRO Group	48.84%	51	Honeywell Intl	-6.81%
22	ATI	47.77%	52	Parsons	-10.11%
23	AAR Corp	46.20%	53	SAIC	-11.10%
24	L3 Harris	45.24%	54	KBR	-18.37%
25	RTX	44.60%	55	Booz Allen	-22.25%
26	Leonardo DRS	40.51%	56	Iridium	-39.83%
27	Oshkosh Truck	36.43%	57	Redwire	-45.38%
28	Heico	35.79%	58	C3.ai	-49.67%
29	Leidos	31.17%	59	Voyager Tech.	-57.30%
30	Northrop Grumman	29.84%			

Portfolio Price/Earnings	27.08	Beta (3-yr)	0.91
Portfolio Price / Book	5.01	Alpha (3-yr)	11.25
Portfolio Price / Sales	2.45	R-squared (3-yr)	51.00
Portfolio Price / Cash Flow	19.87	STD Deviation	15.99
Long-Term Earnings	11.80	Sales Growth	7.06%
Historical Earnings	10.25	Cash Flow Growth	14.53%
		Book Value Growth	3.61%

Total Return (Avg Annual %)	
1-Year	36.19%
3-Year	34.92%
5-Year	23.63%
10-Year	17.95%
15-Year	17.05%
Since Inception	13.57%
Morningstar, 10/1/2025	

Price Return by Decade (ex div)		
	2000-2009	2010-2019
SPADE Defense	310.26%	189.73%
S&P 500	97.07%	[24.11%]
Alpha (bps)	12,053	12,118
Alpha (%)	120.53%	121.18%
SPADE Defense 2020-YTD		128.85%
Alpha Over S&P500		21.82%

Index Performance (ex div)			
	SPADE Defense Index	S&P 500	Alpha (bps)
YTD	35.52%	13.72%	2180
2024	24.88%	23.31%	157
2023	17.70%	24.23%	[653]
2022	8.56%	[19.44%]	2800
2021	6.61%	26.89%	[2028]
2020	[0.73%]	16.26%	[1699]
2019	38.49%	28.88%	961
2018	[8.15%]	[6.24%]	191
2017	28.92%	19.43%	949
2016	17.95%	9.53%	842
2015	3.23%	[0.73%]	396
2014	11.77%	11.39%	38
2013	48.27%	29.60%	1867
2012	16.30%	13.41%	289
2011	[2.75%]	[0.00%]	[275]
2010	9.62%	12.78%	[316]
2009	21.71%	23.45%	[174]
2008	[38.03%]	[38.49%]	46
2007	22.17%	3.52%	1964
2006	19.33%	13.62%	571
2005	5.30%	3.00%	230
2004	20.47%	8.99%	1148
2003	37.27%	26.38%	1089
2002	[2.87%]	[23.37%]	2050
2001	0.94%	[13.04%]	1488
2000	4.98%	[10.14%]	1512
1999	15.31%	19.53%	[422]
1998	6.63%	26.67%	[2004]

About the SPADE Defense Index®

The SPADE Defense Index (NYSE: DXS) provides an investment benchmark for the value that the market ascribes to companies involved with defense and its homeland security, and space components. The Index is designed to reflect the broad diversity of activities that is representative of companies involved with the sector—naval vessels, military aircraft, armored vehicles, helicopters, drones and remotely piloted vehicles, missiles and missile defense, command and control, secure communications, battlespace awareness, intelligence and reconnaissance, and space systems, as well as national/homeland security activities including border security, biometric screening systems, and military AI and cybersecurity efforts. SPADE Indexes, founded in 2004, specializes in designing and managing equity benchmarks for ETF and other products.

Rules

The SPADE Defense Index was designed to be RIC (registered investment company) compliant for the purpose of enabling financial products. Companies are required to meet an eligibility criteria that includes market valuation (>\$250M), listing on a major US exchange, and have sufficient liquidity. Importantly, each firm must be considered systematically important to the defense of the United States and their defense business is systematically important to the revenues and health of the firm. We follow an enhanced modified market cap methodology that employs our TrueCap® strategy, enabling the index to more accurately handle firms with diversified operations. Full details can be found at: www.spadeindex.com/defense

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End of September 2025							Market	Forward	Price/	Price/		
							Cap	P/E	Sales	Book		Div Yld
		Percent	30-Jun-25	30-Sep-25	YTD	QTD	9/30/25	(ttm)	ttm	mrq		forward %
Company	Ticker	30-Sep-25	Price	Price	% Ch	% Ch	2,650					
C3.ai	AI	0.05%	24.59	17.33	-49.67%	-29.52%	2.37	---	6.36	2.97		
AAR Corp	AIR	0.34%	68.81	89.59	46.20%	30.20%	3.238	19.93	1.13	2.55		
AIRO Group	AIRO	0.06%	24.07	19.20	48.84%	-20.23%	0.53	---	5.29	0.76		
Amentum	AMTM	0.39%	23.61	23.94	13.84%	1.40%	5.828	---	0.46	1.31		
Amphenol	APH	2.68%	98.74	123.75	78.19%	25.33%	153.047	57.29	8.13	13.11	0.54%	
ATI	ATI	0.78%	86.34	81.33	47.77%	-5.80%	11.713	28.24	2.60	6.430		
AeroVironment	AVAV	1.64%	284.95	314.89	104.62%	10.51%	15.723	72.89	14.48	3.55		
AXON International Inc.	AXON	2.87%	827.94	717.64	20.75%	-13.32%	56.338	115.75	23.56	20.62		
Boeing Co	BA	7.79%	209.51	215.78	21.91%	2.99%	166.34	459.21	2.21	---		
Booz Allen	BAH	0.86%	104.12	100.07	-22.25%	-3.89%	12.34	14.30	1.03	11.61	2.22%	
Blacksky	BKSY	0.07%	20.61	20.16	86.84%	-2.18%	0.71	-12.83	6.83	8.04		
BWX Technologies	BWXT	1.36%	144.06	184.37	65.52%	27.98%	16.85	53.75	5.88	14.23	0.55%	
CACI Intl	CACI	1.03%	476.81	498.78	23.44%	4.61%	10.97	18.54	1.27	2.82		
CAE	CAE	0.99%	29.27	29.64	16.78%	1.26%	9.50	29.94	2.01	1.94		
Cadre Holdings	CDRE	0.12%	31.88	36.51	13.03%	14.52%	1.49	27.25	2.60	4.47	1.05%	
Curtiss Wright	CW	1.47%	488.54	542.94	53.00%	11.14%	20.46	45.90	6.19	7.54	0.18%	
Ducommun	DCO	0.15%	82.75	96.13	51.01%	16.17%	1.44	23.56	1.80	2.03		
Leonardo DRS	DRS	1.16%	46.48	45.40	40.51%	-2.32%	12.13	43.25	3.55	4.65	0.82%	
Elbit Systems	ESLT	2.47%	449.50	509.80	97.54%	13.41%	23.64	59.98	3.15	5.89	0.61%	
Eaton	ETN	2.28%	357.04	374.28	12.78%	4.83%	145.70	31.06	5.61	7.83	1.14%	
General Dynamics	GD	4.77%	291.72	341.00	29.42%	16.89%	91.73	21.21	1.82	3.88	1.82%	
General Electric	GE	7.65%	257.38	300.77	80.33%	16.86%	320.47	57.41	7.70	16.67	0.49%	
Heico	HEI	1.67%	328.00	322.82	35.79%	-1.58%	29.45	75.43	9.20	10.85	0.07%	
Huntington Ingalls	III	1.13%	241.49	287.91	52.36%	19.22%	11.298	18.36	0.98	2.31	1.94%	
Honeywell Intl	HON	4.42%	232.88	210.50	-6.81%	-9.61%	133.65	19.12	3.34	8.30	2.17%	
Howmet	HWM	3.98%	186.13	196.23	79.42%	5.43%	79.612	61.9	10.31	15.9	0.35%	
Hexcel	HXL	0.48%	56.51	62.70	0.00%	10.95%	5.13	24.98	2.73	3.21	1.07%	
Iridium	IRDM	0.07%	30.17	17.46	-39.83%	-42.13%	1.89	18.19	2.21	3.92	3.40%	
KBR	KBR	0.46%	47.94	47.29	-18.37%	-1.36%	6.15	12.19	0.76	4.10	1.39%	
Keysight Tech.	KEYS	0.55%	163.85	174.92	8.90%	6.76%	30.07	25.10	5.74	5.30		
Karman Holdings	KRMN	0.69%	50.36	72.22	140.73%	43.41%	9.55	---	24.35	26.43		
Kratos Defense & Security	KTOS	1.61%	46.45	91.37	246.36%	96.71%	15.42	154.86	12.71	7.86		