

SPADE Defense Index Has Positive Gains in 23 of 28 Years

A 5-Star Morningstar Rating

A 15-Year Average Total Return: 14.21% !!!

Assets Tracking This Benchmark Ended 1Q25 at \$4.6 Billion

SPADE Defense Index Statistics

12/31/24 Close 13,493.03
12/31/23 Close 10,804.91

All-time Intraday High:
11 November 2024 14,645.39

All-time Closing High:
30 September 2024 14,583.24

COMMENTARY

1Q25 Market Review

Before we get started, a quick aside to how the index performed during 1Q25 before the US announced global tariffs. While the S&P500 was down [4.59%], the SPADE Defense Index gained 1.41%, outperforming the broader market by 6%.

European and Global Defense Stocks

While this outperformance was impressive, it paled to what was happening in the European markets. Many European nations announced plans to dramatically increase their spending on defense in light of the threat that Russia poses to the continent. After decades of relatively flat spending on security, it became an unexpected growth market which fueled share prices higher in German, French, Italian, Swedish, and UK publicly traded defense firms—in some cases by triple digits last year (ie. Rheinmetall's stock is up more than 1,000% since Russia invaded Ukraine in 2022). Several newly launched funds that held European securities benefited from a case of perfect timing. But whether these firms are able to maintain that outperformance is an unanswered question. It could take many firms years to ramp up manufacturing capacity and get new designs and technology to market. Misses when reporting quarterly earnings could lead to share prices declining and a reversion to

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Price Return	SPADE Defense	S&P 500
1Q25	1.41%	[4.59%]
2024	24.88%	23.31%

SPADE Defense Index March 2025 Rebalance

Added: Karman (KRMN), Standard Aero (SARO), Blacksky (BKSX),

Removed: None

Corporate Actions Affecting the Index in 2025

- Barnes was acquired by private equity firm Apollo during the quarter.
- Boeing is acquiring Spirit AeroSystems with an anticipated close in mid-2025 following the sale of SPR's Airbus commercial business.
- Triumph Group is being acquired for \$3B with a closing scheduled for 2H2025.
- Honeywell plans to spin its advanced materials unit, valued at \$11 billion, into a publicly traded company in late 2025/2026 and separate its Aerospace & Automation businesses in 2H2026.

Dividend

Invesco's Aerospace and Defense ETF issued a dividend of \$0.0489 per share on 24 March 2025. Over the preceding 12 months, \$0.6332 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.

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the mean. In the short-term, funds with global defense holdings may have outperformed, but they—and their underlying indexes—are relatively new and lack a live track record to gage their performance over time. In contrast, the SPADE Defense Index has data back to 1997 and a track record of beating the US market in 23 of 28 years—and a history of rebounding from any declines within 30 months, when factoring in dividends.

We will address sector trends later in this commentary.

The Bear Market Edition

We'd be remiss if we didn't address the ongoing black swan event that began in early April—namely, the United States instituting significant tariffs globally. This spiked volatility in stock markets around the globe and led many to forecast that the US would shortly experience a recession, with a further risk of a global depression. Strategic tariffs at a low level can be used to protect domestic industries and raise “taxes” on businesses that import. These typically come with limited economic and inflationary impacts. However, large tariffs on everybody for everything at rates that seem to be amended or altered daily can cause major economic damage. Please keep in mind that I write this from the perspective of an economist / investor...not from any political viewpoint. People have been trying to figure out how to categorize me for years!

As a mea culpa, in the January issue of *The SPADE Investor*, we provided a list of a dozen unlikely but possible “black swan” events that could change the equation for investing in the defense sector (black swan events by definition are actions that one couldn't logically assume would occur but are remotely possible). We failed to recognize the likelihood that the current administration would pursue actions against allies as well as our adversaries.

An interesting / humorous quote making its rounds over the internet --

Tariffs have occurred in 1828, 1930, 2025 – all about 100 years apart because everyone who remembers has to be dead for the next one to happen. The last two caused a depression.

-- @stacycay

The 2020s have been a very complicated time to be an investor replete with navigating a pandemic, a surge in inflation, rising interest rates, and now a global tariff war. Still, when we consider all the policy actions going on, we believe *the defense sector remains both a short-term and a long-term play*. Investing in defense thrives when the world is unstable. It doesn't have to be a time of war, simply when people

and politicians feel unease about the future and recognize the need to support activities that make them feel more secure. Wall Street seeks stability, and threats to stability usually benefit companies operating in the defense sector.

What we currently see are several competing negative and positive forces impacting what has been a healthy and resilient aerospace and defense sector:

1. The impact of a trade war on the economy and defense
2. Isolationism vs. globalism
3. The first trillion-dollar US defense budget

The Aerospace & Defense Industries Entered 2024 Healthy and Resilient

Some facts to consider:

- The United States remains the world's leading exporter of aerospace and defense (A&D) products. Per the most recent *CIA World Factbook*, the US totaled 46.1% of aerospace export sales globally (2023).
- US A&D exports rose by a remarkable 21 percent from 2022 to 2023, reaching a total value of \$135.9 billion and produced a positive trade balance of \$113.99B. (*AIA 2024 Facts and Figures*)
- US A&D totaled \$955 billion in combined sales in 2023, a 7.1% increase from the prior year. This substantial growth emphasizes the industry's economic influence, with each \$M (million US dollars) in end-use sales supporting four jobs across both end-use manufacturing and the supply chain. Additionally, the US A&D industry generated \$425 billion in economic value, representing 1.6 percent of total nominal GDP in the US. (*AIA 2024 Facts and Figures*)

The Negative Impact of a Trade War on the Economy and Defense

At first glance, US-based defense industrial manufacturing giants such as Lockheed Martin, RTX, Northrop Grumman, General Dynamics, and GE Aerospace and the commercial aircraft manufactured by Boeing, might seem to be immune to import tariffs considering their US presence (if we ignore any retaliatory tariffs by other nations that would increase the cost). In fact, foreign suppliers, particularly from allied nations, play a vital role in the US A&D supply chain. While the Buy American Act usually requires government purchases

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to be made from domestic sources and regulates the use of non-US suppliers to protect national security and safeguard critical technologies, international collaborations have been used to strengthen alliances, reduce costs, and provide access to technologies.

For example:

- The F-35 fighter jet has components manufactured in the UK (15%), Japan, and Italy, as well as key facilities in Germany, Australia, Turkey...and even has parts from China! The F-35, flown by 20 nations is a unique partnership designed to give participating countries manufacturing work. Similarly, there are rocket and air defense projects with Norway and Israel.
- While the Pentagon has instituted a number of programs over the past twenty years to build a US-based semiconductor industry, the reality is that commercial sector innovation has been faster and better financed to incorporate recent innovations. Taiwan Semiconductor (TSMC) controls 68% of the global market for semiconductors, and the firm makes a number of the chips used by the US DoD in the F-35 fighters and military grade devices. Although the major designers of US radiation-hardened, field-programmable gate arrays (FPGAs) are US firms, they depend on Taiwan for much of its production. Malaysia and China round out the top three sources of US semiconductor imports.
- The commercial aircraft industry, which many systematically important defense firms target with related divisions, also have a major reliance on international trade. More than 2/3 of Boeing's orders over the past decade have come from outside the US. This is a top export market for the US valued at \$100+ billion/year. Tariffs will increase the cost of key aerospace parts, impact a supply chain that is still recovering from Covid, and upend nearly a half-century of mostly duty-free aerospace trade (credit: NBC News).

For example, the Boeing 787 Dreamliner:

- Roughly 60% of components (by cost) and 30% of the 2.3 million parts are imported
 - Japan: ~35% of components (fuselage sections, wings)
 - Italy: ~10% (horizontal stabilizer)
 - UK: ~5% (landing gear, some avionics)
 - Others (Korea, Germany, etc.): ~10%
- The good news is that the impact of a 10% tariff (a ~6% increase per aircraft) would add \$9M to the base cost per plane of \$150M (which we believe is manageable). A 125%+ tariff on China...not so much.

What we think this means...

- According to *Politico*, "Trump's tariff program, if implemented as originally planned, could muddle global supply chains the Pentagon has spent decades creating, make American weapons more expensive, and complicate international efforts to counter China — such as joint ventures to build submarines with the United Kingdom and Australia... These and other projects are key to defense in Europe and the Indo-Pacific, where allies are racing to stay ahead of an unpredictable Russia and a modernizing China."
- With respect to commercial aircraft, Boeing's multi-year backlog of orders should allow it to reassign planned deliveries, shift those for China to other nations/clients until tariff levels return to more typical levels.

Isolationism vs. Globalism

From an economic and defense perspective, the shift toward isolationism from globalism might be more important to the defense sector than tariffs. A protectionist economic policy in the late 1920s / early 1930s drove the US into the Great Depression. It was only in the aftermath of World War II, that the United States took the mantle of economic leadership and helped deliver prosperity around the globe that has lasted for nearly 80 years.

Commercial aerospace, which many of the largest defense companies operate related businesses in, thrives on globalization—whether its commerce/trade related or when people have the time and resources for personal travel to explore the world and experience different cultures.

International sales to our allies represents one of the three legs of the defense business (US defense budget, adjacent industries, international sales).

Faced with the realization that a Donald Trump presidency meant a likely withdrawal of support from Ukraine and the possibility that the US would not stand with Europe and NATO if an Article V violation occurred ["An armed attack against one or more [members]...shall be considered an against them all"] a number of our allies—especially in Europe and NATO—have begun to shift their acquisition priorities to local or alternative sources as they significantly increase spending on security.

The impact is that US firms may be locked out of competing for future contracts. This also emboldens our customers to sponsor businesses and products that compete against us.

European Commission President Ursula von der Leyen

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said, “We must buy more European. Because that means strengthening the European defense technological and industrial base.” A EU defense spending plan released in mid-March, totaling more than \$800B by 2030 froze the UK and the US out of the deal with the EU choosing to work with South Korea and Japan. As stated in The New Republic on 3/19/25, “for decades, purchasing American fighter jets and weapons came with the added bonus of US protection...but that promise no longer feels like a guarantee.” In Canada, Prime Minister Mark Carney announced a review of a \$13.3 billion, 2023 contract with Lockheed Martin for its F-35 Lightning II stealth fighters, citing “geopolitical” reasons and the need to have “substantial production of alternative aircraft in Canada.” A quote in Politico from an anonymous Western European defense official, “If you keep punching your allies in the face, eventually they’re going to stop wanting to buy weapons from you.”

So, what does all this mean for the defense companies and for investors...likely very little in the near-term.

At present, while alternative systems are available from other nations, the reality is that US military equipment, while expensive, is still the best on the market. Developing competing technology and ramping up existing manufacturing capabilities will take years for other nations to catch up to the US. Whether they are able to execute on this remains to be seen. The impact on the US defense sector will not be immediate, but what happens after 2030 is hard to forecast.

Two examples from the past:

Commercial Aircraft Manufacturing—China has spent nearly 20 years trying to build a viable competitor to Boeing and Airbus in the commercial aircraft industry. Yet after all this time, COMAC has sales of \$2.7B US. Created in 2008, its first planes entered commercial service in March 2023 and it has only delivered 185 aircraft to date (169 of the C909 which seats 78-90 passengers and 16 of the larger C919).

Space Launch Vehicles—In the 1980s and 1990s US policy restricted use of American rockets to launch commercial communications satellites into space. This led directly to the EU developing their own capacity, which ultimately competed against US products. The US lost control of a market they dominated.

Lastly, as US policy shifts away from globalism and removes funding from non-defense programs related to international aid and development, those nations as well may see the US as less of a partner and therefore less enthusiastic to use what limited resources they have to purchase US products. From a defense perspective, this loss of influence is referred to “soft power.”

Positives for US Defense Sector Growth

Despite the current political shift in international relations, there are a number of significant positives for companies operating in the A&D sector.

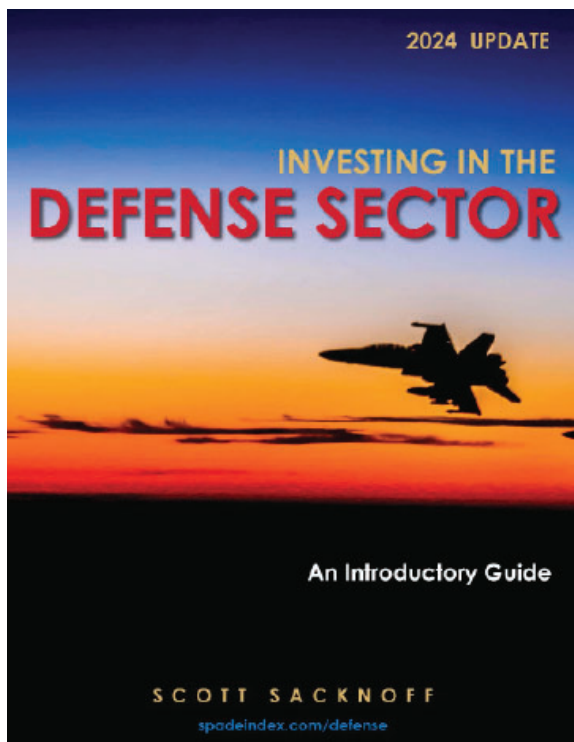
- President Trump has called for ***the first trillion-dollar defense budget***. This would authorize nearly \$100 billion in new spending for the Pentagon and related agencies.
- Cost-savings efforts from the Secretary of Defense and the Department of Government Efficiency targeting consulting companies such as Deloitte and Accenture, along with the restructuring and elimination of DEI-identified programs are said to have freed up between \$580M (announced by DoD) and several billion dollars. These freed up funds could be allocated to other projects and appeared targeted to readiness and building more systems—hence new contracts to the defense contractor base. But budget changes are not simply a win-win, there will be winners and losers. For example, canceling or shifting an order for an F-35 aircraft could move resources to new naval vessels. This would impact the value of individual stocks, but would have less of an impact or be neutral for a fund holding both firms.
- With a new emphasis in Europe to re-arm, even with a desire to become more independent from the US, there are still some systems and capabilities that Europe does not have and may not be able to replicate. Some that come to mind are the B-21/B-2 stealth bombers, aircraft carriers, Aegis integrated naval weapons system, Precision Strike Missiles / ATACMs, etc. Considering that Germany’s goal to spend €1 trillion over ten years for defense and infrastructure is just one year of the US defense budget, Europe will likely continue to purchase a number of systems from the US industrial base.
- The A&D sector reached a record \$955 billion in combined sales in 2023, a 7.1% increase from the prior year. This substantial growth emphasizes the industry’s economic influence, with each million dollars in end-use sales supporting four jobs across both end-use manufacturing and the supply chain. Additionally, the A&D industry generated \$425 billion in economic value, which represented 1.6 percent of total nominal GDP in the US.
– AIA 2024 Facts and Figures
- The Aerospace Industries Association released its 2024 Facts and Figures show that the US A&D exports rose by a “remarkable” 21 percent from 2022 to 2023, reaching a total value of \$135.9 billion and produced a positive trade balance of \$113.99 billion.

Some Additional Thoughts...

- The F-47 is a win for Boeing but not unexpected. It got a lot of attention, but the choice of Boeing over Lockheed Martin wasn't a surprise. Historically, the Pentagon has spread its major contracts among contractors in order to maintain a healthy industrial base. Considering Lockheed Martin will be building the F-35 aircraft for the next decade or longer and Northrop Grumman has major contracts to upgrade the US nuclear systems and produce stealth bombers, an award to keep Boeing active in aeronautical systems was likely theirs to lose.
- Ever wonder where the strategy for the United States to pursue annexing Canada, Greenland, and Panama came from? The New Republic cited the 1941 book by James Burnham, *The Managerial Revolution: What is Happening in the World* that was used by George Orwell as the geopolitical setting for 1984. The book cites all three nations (and its resources) as a necessary part of the US sphere of influence.
- After more than two years, the walls are finally closing in on Hamas. Even during the cease fire, organized Hamas events related to the release of hostages were designed to show that despite the loss of leadership and destruction in Gaza, the conflict wasn't over. But something that has rarely been seen in the previous decades of iron fist control over the population may be changing the situation on the ground—citizens have spoken out and organized protests stating that Hamas needs to go. Overcoming their fear of retribution, is

the first step for the people of Gaza to take back their country. Additionally, Israel continues to round up Hezbollah in Lebanon and factions in Syria. Regardless of these positive changes, the Middle East will likely remain volatile and Israel the United States' best ally in a region where Iran and other nations remain a threat to global stability.

- Lost in this commentary was we barely mentioned Russia / Ukraine. With the new US administration taking a position to limit its support of Ukraine, Europe appears to be stepping up and increasing the supplies and weaponry they provide. Meanwhile, Russian forces have continued to be supplemented by North Korean and now, reportedly, Chinese troops. They have taken an offensive to once again target civilian areas hoping that fear will drive Ukraine toward a peace on Russia terms. With the price of oil dropping, there is increasing concern by economists that the funds required to maintain their war effort is nearing an end.
- And what about China? Could the US tariff war with China make Taiwan more at risk?



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 (1Q2025)

\$32.7B – Korean Air has agreed to purchase 50 Boeing 777-9 and 777-10 aircraft and GE Aerospace engines.

\$30B – The US military will receive this amount for cybersecurity in the FY2025 National Defense Authorization Act.

\$13B – Viasat, operating as Inmarsat Government, secured a task order under a 10-year order to provide satellite communications for the US Space Force.

\$8B – The Biden Administration informed Congress of a sale to Israel to replenish munitions and air defense systems.

\$7.3B – India to buy 156 Prachand helicopters from Hindustan Aeronautics marking a significant step for the nation's opus for defense self-reliance.

\$7B – The Air Force to GE Edison Works and RTX Pratt & Whitney for the Next Generation Adaptive Propulsion program to develop prototype engines.

\$6.5B – BOC Aviation plans to buy 70 Airbus A320neo and 50 Boeing 737 Max 8 aircraft as part of its fleet expansion.

\$5.6B – RocketLab has been chosen by the US Space Force to compete in the National Security Space Launch Phase 3 Lane 1 program joining Blue Origin, SpaceX, and United Launch Alliance. A minimum of 30 missions is expected through 2029.

\$5B – GE Aerospace from the DoD to produce and maintain F110 engines through 2030.

\$4.82B – NASA awarded four firms, including Viasat, to enhance the Near Space Network supporting missions within 1.2 million miles of Earth.

\$4.19B – The Army awarded 10 companies including Leidos and RTX for an Aerostat Production contract to produce lighter-than-air systems and elevated sensors.

\$3.64B – State Department approved sale to Japan of RTX's AMRAAM missiles.

\$3.5B – Northrop Grumman from the Naval Air Systems Command to serve as prime contractor for the E-130J TA-CAMO program.

\$2.45B – Boeing for services supporting the US Air Force C-17 Globemaster III aircraft, raising the value to \$5.14B.

\$1.8B – Safran is expected to receive conditional EU approval for its proposed acquisition of RTX Collins Aerospace's flight controls unit contingent on selling its North American electromechanical actuation business to address competitor concerns.

\$1.5B – RTX Pratt & Whitney from the US Air Force for F119 engine sustainment supporting the F-22 Raptor fleet.

\$1.45B – Kratos from DoD to develop a low-cost hypersonic test bed.

\$1.1B – General Dynamics Electric Boat received a contract modification for long lead time materials for the Virginia Class Block VI submarines.

\$990M – The GAO upheld a US Army contract for Aerovironment for loitering munitions systems.

\$987M – Leidos from the Air Force Life Cycle Management Center, a 10-year contract to provide sustainment services for F-16s sold under the Foreign Military Sales program.

\$904M – RTX's Collins Aerospace won a 5-year follow-on contract to continue development of the US Navy's Cooperative Engagement Capability.

\$899.6M – Northrop Grumman to provide its Integrated Battle Command System for Poland.

\$900M – Japan acquired Standard Missile 6 Block I missiles and related equipment from RTX.

\$880M – General Dynamics from the US Navy to produce advanced electronics for the MK 54 Mod 1 lightweight torpedoes.

\$800M – L3Harris finalized the sale of its Commercial Aviation Solutions business to TJC. The unit provided avionics, pilot training, and flight data analytics.

\$800M – Boeing from the US Space Force for satellites and missile tracking satellites.

1Q25 Leaders

1	Elbit Systems	48.67%
2	Triumph Group	35.80%
3	Viasat Inc	22.44%
4	General Electric	20.00%
5	Howmet	18.62%
6	OSI Systems	16.07%
7	RTX	14.47%
8	Kratos Defense	12.55%
9	Heico	12.39%
10	Palantir	11.60%

1Q25 Laggards

1	C3.ai	-38.86%
2	Parsons	-35.82%
3	Rocketlab	-29.80%
4	Blacksky	-28.36%
5	AeroVironment	-22.55%
6	Booz Allen	-18.74%
7	Eaton	-18.09%
8	TTM Technologies	-17.13%
9	KBR	-14.02%
10	Amentum	-13.46%

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

Exchange / Ticker	NYSE / PPA
Assets (3/31/2025)	\$4.5 B
Closing Price (3/31/2025)	\$116.55
Dividend Yield*	1.18%
1Q2025 Volume**	15.71 Million
Turnover*	18%
Morningstar Rating*	***** (5-Star)
* Morningstar ** Yahoo Finance - 3/31/2025	

Capture Ratio	3-Yr	5-Yr	10-Yr
Upside	103	95	103
Downside	69	70	79

1Q2025 Results

1	Elbit Systems	48.67%	29	Parker Hannifan	-4.43%
2	Triumph Group	35.80%	30	ATI	-5.47%
3	Viasat Inc	22.44%	31	Textron	-5.54%
4	General Electric	20.00%	32	Amphenol	-5.56%
5	Howmet	18.62%	33	Iridium	-5.86%
6	OSI Systems	16.07%	34	Honeywell Intl	-6.26%
7	RTX	14.47%	35	Leidos	-6.33%
8	Kratos Defense	12.55%	36	Keysight Tech.	-6.76%
9	Heico	12.39%	37	Lockheed Martin	-8.07%
10	Palantir	11.60%	38	Cadre Holdings	-8.33%
11	Karman Holdings	11.40%	39	AAR Corp	-8.63%
12	Woodward	9.66%	40	Ducommun	-8.84%
13	Transdigm	9.15%	41	CACI Intl	-9.19%
14	Northrop Grumman	9.10%	42	Curtiss Wright	-10.60%
15	Huntington Ingalls	7.97%	43	BWX Technologies	-11.44%
16	Standard Aero	7.59%	44	AXON International	-11.50%
17	Teledyne Tech.	7.24%	45	Moog Inc.	-11.93%
18	General Dynamics	3.45%	46	Hexcel	-12.66%
19	Mercury Systems	2.60%	47	Amentum	-13.46%
20	V2X	2.55%	48	KBR	-14.02%
21	Leonardo DRS	1.76%	49	TTM Technologies	-17.13%
22	Spirit Aerosystems	1.12%	50	Eaton	-18.09%
23	SAIC	0.44%	51	Booz Allen	-18.74%
24	L3 Harris	-0.46%	52	AeroVironment	-22.55%
25	Oshkosh Truck	-1.04%	53	Blacksky	-28.36%
26	CAE	-3.11%	54	RocketLab	-29.80
27	Boeing	-3.64%	55	Parsons	-35.82%
28	LOAR Holdings	-4.41%	56	c3.ai	-38.86%

Portfolio Price/Earnings	22.44	Beta (3-yr)	0.86
Portfolio Price / Book	4.11	Alpha (3-yr)	8.11
Portfolio Price / Sales	1.93	R-squared (3-yr)	60.64
Portfolio Price / Cash Flow	16.73	STD Deviation	17.96
Long-Term Earnings	11.20%	Sales Growth	6.87%
Historical Earnings	10.31%	Cash Flow Growth	14.56%
		Book Value Growth	%3.71

Total Return (Avg Annual %)		Price Return by Decade (ex div)			Index Performance (ex div)			
1-Year	15.39%		2000-2009	2010-2019		SPADE Defense Index	S&P 500	Alpha (bps)
3-Year	15.01%	SPADE Defense	310.26%	189.73%	YTD	1.41%	[4.59%]	600
5-Year	19.32%	S&P 500	97.07%	[24.11%]	2024	24.88%	23.31%	157
10-Year	13.34%	Alpha (bps)	12,053	12,118	2023	17.70%	24.23%	[653]
15-Year	14.21%	Alpha (%)	120.53%	121.18%	2022	8.56%	[19.44%]	2800
Since Inception	12.25%	SPADE Defense 2020-2024			2021	6.61%	26.89%	[2028]
Morningstar, 4/1/2025		68.87%			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 March 2025								Market	Forward	Price/	Price/	PEG	
								Cap	P/E	Sales	Book	5 yr	
		Percent	31-Dec-24	31-Mar-25	YTD	QTD		12/31/24	(ttm)	ttm	mrq	expected	Div Yld
Company	Ticker	31-Mar-25	Price	Price	% Ch	% Ch							forward %
C3.ai	AI	0.10%	34.43	21.05	-38.86%	-38.86%		2.79	-61.91	7.62	3.24		
AAR Corp	AIR	0.29%	61.28	55.99	-8.63%	-8.63%		2.021	12.44	0.75	1.68		
Amentum	AMTM	0.42%	21.03	18.20	-13.46%	-13.46%		4.428		0.45	0.99		
Amphenol	APH	1.97%	69.45	65.59	-5.56%	-5.56%		79.435	30.37	5.22	8.10		1.01%
ATI	ATI	0.87%	55.04	52.03	-5.47%	-5.47%		7.339	18.07	1.68	3.980		
AeroVironment	AVAV	0.49%	153.89	119.19	-22.55%	-22.55%		3.363	27.59	4.53	3.88		
AXON International Inc.	AXON	3.22%	594.32	525.95	-11.50%	-100.04%	##	40.846	84.83	19.61	17.31		
Boeing Co	BA	7.34%	177.00	170.55	-3.64%	-3.64%		128.32	362.87	1.93	-32.65		
Booz Allen	BAH	1.28%	128.70	104.58	-18.74%	-18.74%		12.97	14.96	1.10	10.99		2.10%
Blacksky	BKSY	0.04%		7.73	-28.36%			0.25	-4.92	2.40	2.52		
BWX Technologies	BWXT	1.05%	111.39	98.65	-11.44%	-11.44%		9.02	28.76	3.33	8.35		1.01%
CACI Intl	CACI	1.07%	404.06	366.92	-9.19%	-9.19%		8.23	13.64	1.01	2.21		
CAE	CAE	1.14%	25.38	24.59	-3.11%	-3.11%		7.91	24.74	1.73	1.68		
Cadre Holdings	CDRE	0.14%	32.30	29.61	-8.33%	-8.33%		1.20	22.10	2.12	3.86		1.28%
Curtiss Wright	CW	1.21%	354.87	317.27	-10.60%	-10.60%		11.96	26.82	3.83	4.88		0.26%
Ducommun	DCO	0.13%	63.66	58.03	-8.84%	-8.84%		0.86	14.22	1.10	1.26		
Leonardo DRS	DRS	1.17%	32.31	32.88	1.76%	1.76%		8.72	31.31	2.70	3.41		1.09%
Elbit Systems	ESLT	2.49%	258.07	383.68	48.67%	48.67%		17.23	45.14	2.52	5.21		0.63%
Eaton	ETN	2.33%	331.87	271.83	-18.09%	-18.09%		106.60	22.56	4.28	5.78		1.53%
General Dynamics	GD	4.83%	263.49	272.58	3.45%	3.45%		73.16	16.95	1.53	3.33		2.20%
General Electric	GE	7.52%	166.79	200.15	20.00%	20.00%		213.48	38.20	5.52	11.11		0.72%
Heico	HEI	1.90%	237.74	267.19	12.39%	12.39%		32.41	62.43	8.12	9.91		0.08%
Huntington Ingalls	HII	1.11%	188.97	204.04	7.97%	7.97%		8.006	13.01	0.69	1.71		2.65%
Honeywell Intl	HON	4.58%	225.89	211.75	-6.26%	-6.26%		137.62	19.23	3.57	7.39		2.13%
Howmet	HWM	4.00%	109.37	129.73	18.62%	18.62%		52.544	40.92	7.07	11.69		0.31%
Hexcel	HXL	0.60%	62.70	54.76	-12.66%	-12.66%		4.40	21.82	2.31	2.90		1.24%
Iridium	IRDM	0.16%	29.02	27.32	-5.86%	-5.86%		2.97	28.46	3.58	5.23		2.05%
KBR	KBR	0.73%	57.93	49.81	-14.02%	-14.02%		6.60	12.84	0.85	4.54		1.33%
Keysight Tech.	KEYS	0.61%	160.63	149.77	-6.76%	-6.76%		25.88	21.49	5.16	4.99		
Karman Holdings	KRMN	0.64%		33.42	11.40%			4.42		13.35	28.71		
Kratos Defense & Security	KTOS	0.66%	26.38	29.69	12.55%	12.55%		4.54	50.32	3.99	3.32		
Leidos	LDOS	1.56%	144.06	134.94	-6.33%	-6.33%		17.30	12.91	1.04	4.01		1.19%
L3 Harris	LHX	4.06%	210.28	209.31	-0.46%	-0.46%		39.29	14.55	1.84	2.04		2.29%
Lockheed Martin	LMT	7.79%	485.94	446.71	-8.07%	-8.07%		104.79	15.89	1.47	16.58		2.95%
LOAR Holdings	LOAR	0.50%	73.91	70.65	-4.41%	-4.41%		6.61	105.45	16.41	6.07		
Moog Inc.	MOGA	0.54%	196.84	173.35	-11.93%	-11.93%		5.47	17.67	1.49	3.04		0.67%
Mercury Computer Sys	MRCY	0.37%	42.00	43.09	2.60%	2.60%		2.57	46.33	2.91	1.73		
Northrop Grumman	NOC	5.79%	469.29	512.01	9.10%	9.10%		74.12	18.25	1.81	4.85		1.61%
OSI Systems	OSIS	0.34%	167.43	194.34	16.07%	16.07%		3.27	19.77	1.98	3.94		
Oshkosh Truck	OSK	0.25%	95.07	94.08	-1.04%	-1.04%		6.08	8.69	0.57	1.46		2.17%
Parker Hannifan	PH	3.76%	636.03	607.85	-4.43%	-4.43%		78.27	20.65	3.93	5.97		1.07%
Palantir	PLTR	1.44%	75.63	84.40	11.60%	11.60%		197.95	179.57	69.08	39.46		
Parsons	PSN	0.40%	92.25	59.21	-35.82%	-35.82%		6.32	15.22	0.94	2.62		
Rocketlab	RKLB	0.63%	25.47	17.88	-29.80%	-29.80%		8.11	-77.74	18.59	23.59		
Raytheon Technologies	RTX	7.67%	115.72	132.46	14.47%	14.47%		176.85	21.58	2.19	2.93		1.90%
SAIC	SAIC	0.61%	111.78	112.27	0.44%	0.44%		5.36	12.46	0.72	3.42		1.32%
Standard Aero	SARO	1.26%		26.64	7.59%			8.91	32.10	1.70	3.75		
Spirit Aerosystems	SPR	0.59%	34.08	34.46	1.12%	1.12%		4.04	43.62	0.64	-1.54		
Transdigm	TDG	4.15%	1267.28	1383.29	9.15%	9.15%		77.58	31.81	9.51	-12.40		
Teledyne Technologies	TDY	1.020%	464.13	497.71	7.24%	7.24%		23.31	23.19	4.11	2.43		
Triumph Group	TGI	0.27%	18.66	25.34	35.80%	35.80%		1.96	30.53	1.58	-23.82		
TTM Technologies	TTMI	0.14%	24.75	20.51	-17.13%	-17.13%		2.08	10.41	0.85	1.34		
Textron	TXT	1.41%	76.49	72.25	-5.54%	-5.54%		13.12	10.78	0.96	1.84		0.11%
Viasat Inc	VSAT	0.16%	8.51	10.42	22.44%	22.44%		1.35	-6.55	0.30	0.28		
V2X	VVX	0.20%	47.83	49.05	2.55%	2.55%		1.55	26.37	0.36	1.51		
Woodward	WWD	1.01%	166.42	182.49	9.66%	9.66%		10.83	31.09	3.27	4.90		0.61%
Data Provided by Morningstar, Yahoo Finance/Thomson Reuters (PEG), Morningstar (div)													