

Commentary

SPADE Defense Index Statistics

7/30/10 Close: 1954.00
 All-time Close: 2747.67
 Date of all-time close: 9 October 2007

	SPADE Defense	S&P500
July	6.48%	6.88%
2nd Qtr	[13.50%]	[11.86%]
YTD	0.69%	[1.21%]

Opportunity and Risk in the Aerospace & Defense Sector

A short summary of the defense policy, the budget & investing.

#1: The Defense Budget is Going Down

Really? The media seems to focus on this but its not a real surprise to anyone who works in the sector, analyzes the sector, works in the government, or in Congress. Defense stocks are off 28% from its all-time highs having declined with the market decline of 2008/2009 and rebounding to the current level. In spite of the fear of a forthcoming budget contraction, many of the largest defense firms in the most recent quarterly reporting period posted revenues, earnings, and margins that beat analyst expectation, the sector remains tethered to the path of the S&P 500. The irony is that the defense budget has not yet declined and company's operating in the sector have yet to be impacted from what everyone expects will happen at some point.

Still, it is highly likely that the defense budget will not increase over the next several years due to the economic and budget situation facing the United States and the need to get our national debt and deficit under control. And it is highly likely that the budget devoted to defense activities will be smaller than we see today especially if the country does pull out of Iraq and Afghanistan within the next year and a half. That said, there are still some that maintain that the impact on the defense sector will be much less than many foresee because of the unwillingness of Congress, historically, to challenge what is and what is not needed in the defense sector. An article which appears in the Volume 17 #3 issue of 'Quest: The History of Spaceflight' goes into great detail the problems and issues that President Eisenhower faced trying to balance the budget while maintaining a strong defense sector. He feared that when a retired General was not in the White House it would be easy for the President and Congress to succumb to the advice of military personnel on what was truly needed to maintain a defense to protect the U.S. and it was usually much more than they actually needed. Reading the article it was remarkable how similar the situation is today. Yet, although the budget is tremendously important to the sector, today it is not the only factor one must consider.

#2 What May or May Not Happen

To head off any possible outside action, Secretary Gates and the Department of Defense have begun efforts to identify systematic waste and institute cost reduction measures. The hope is to keep the budget at or about the currently planned levels and use savings from efficiency measures for procurement and R&D. This would be a net

positive to companies operating in the sector. War funding included, U.S. military spending in FY10 will approach \$661B. The Defense Business Board estimates at least \$200B (\$1T over the Future Years Defense Plan) is overhead which would rank the agency 49th globally in GDP just behind Singapore and Portugal. A number of measures are being proposed including shutting the U.S. Joint Forces Command, freezing hiring (at the Office of Secretary of Defense, all Joint Staff directorates, and Combatant commands), eliminating redundant functions, reducing the DoD civilian workforce, and changing the rotation policy (which currently costs about \$4 billion annually to move personnel from site to site). In addition, some personnel policy changes such as changing the way pay raises are calculated, raising DoD's Tricare health care premiums, shifting retirees to the Medicare health system at age 65 (health care costs DoD \$50 billion annually and is growing), and reducing the active force to levels seen earlier in the decade in 2003 are estimated to save the agency billions. In the immediate term, Sec. Gates is seeking to free up \$101 billion over five years with each service freeing up \$2 billion in 2012 and each DoD agency \$1 billion. In 2013, the services ramp up to \$3 billion with a peak of \$10 billion in 2016.

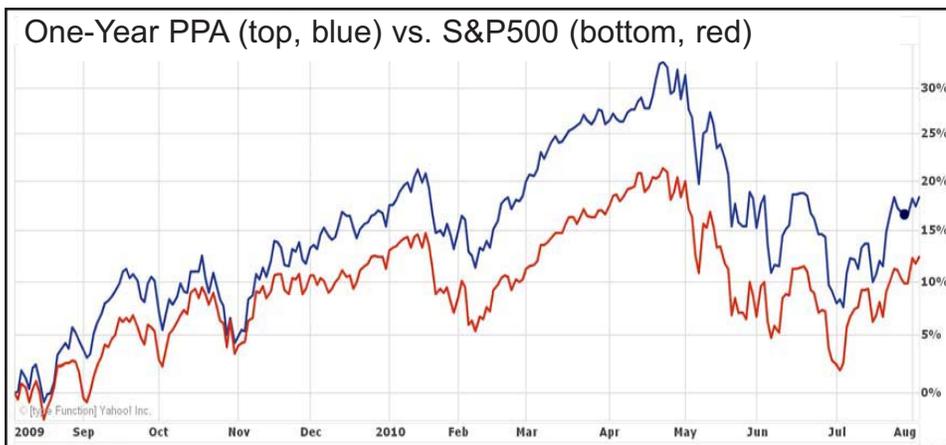
#3: It's easy to knock defense stocks but is there hidden value.

If Congress allows DoD to get its house in order the impact on companies operating in the defense sector might not be impacted as badly as some foresee. The share price of many defense stocks are already well off their all-time highs and fundamentals indicate some very strong companies maintaining substantial cash reserves and low P/E, low P/S, and other favorable metrics.

Exports

Defense sector export revenues in 2009 were \$38.1 billion and have been rising for the past several years. Countries in the Asia-Pacific region and the Middle-East were not hit as hard during the recent global economic downturn and remain committed to build-

July 2010 Top Gainers			July 2010 Laggards			YTD Top Gainers			YTD Laggards		
1	Ladish Corp.	29.45%	1	Comtech	[27.93%]	1	Ladish Corp	95.42%	1	Comtech	[38.44%]
2	Textron	22.33%	2	Orbital Sciences	[7.17%]	2	Argon ST	58.77%	2	AAR Corp	[26.89%]
3	Ducommun	22.16%	3	Mantech Int'l	[6.86%]	3	Triumph Group	57.31%	3	Gencorp	[24.86%]
4	Gencorp	22.09%	4	Raytheon	[4.38%]	4	Stanley Inc	36.26%	4	Alliant Techsystems	[23.92%]
5	Integral Systems	19.06%	5	SAIC	[0.66%]	5	Esterline Tech.	25.90%	5	VSE Corporation	[21.23%]
6	Precision Castparts	18.72%	6	L-1 Identity	[0.37%]	6	Boeing	25.88%	6	Computer Sciences	[21.21%]
7	Triumph Group	13.91%	7	Cogent	[0.22%]	7	GeoEye	23.82%	7	ICx Technologies	[19.22%]
8	SRA International	12.96%	8	Stanley	[0.08%]	8	Moog	22.51%	8	Mantech Int'l	[17.98%]
9	Mercury Computer	12.53%	9	OSI Systems	0.07%	9	Ceradyne	20.97%	9	Aerovironment	[17.78%]
10	VSE Corporation	11.60%	10	Computer Sciences	0.18%	10	Mercury Comp.	19.89%	10	L-3 Communications	[16.00%]



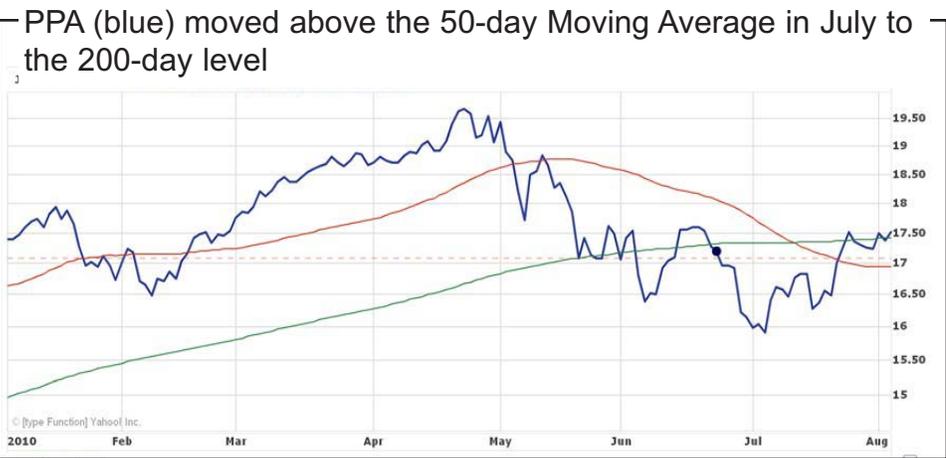
**ETF Statistics (NYSEArca: PPA)
Powershares Aerospace & Defense**

Exchange / Ticker Symbol: NYSE / PPA
 Fee: 60 basis
 Assets (7/30/10): \$106.8 M
 Closing Price (7/30/10): \$17.23
 Yield (12-month yield): 1.18%
 July 10 Volume: 720,100
 Turnover: 9%

source: Yahoo Finance

Portfolio Price / Earnings	12.88
Portfolio Price / Book	2.48
Portfolio Price / Sales	0.69
Earnings Growth Rate	11.29%
3 mo Average Volume	41,568

* Yahoo Finance 6/30/10



Powershares Aerospace & Defense ETF (NYSE: PPA)

Modern Portfolio Theory (vs the S&P500)

Beta (3 month): 1.10
 Alpha (3 month): 5.62
 R-squared (3 month): 84.81

source: Yahoo! Finance (6/30/10)

Largest Defense Prime Contractors

	July	YTD
Lockheed Martin	0.87%	[0.27%]
Boeing	8.59%	25.88%
General Dynamics	4.59%	[10.15%]
Northrop Grumman	7.71%	5.00%
Raytheon	[4.38%]	[10.19%]

PPA by Sector

	PPA
Industrial	79.77%
Info Tech.	17.77%
Materials	2.46%

source: Powershares

Year	SPADE	S&P500
2009	21.71%	23.45%
2008	[38.03%]	[38.49%]
2007	22.17%	3.53%
2006	19.33%	13.62%
2005	5.30%	3.00%
2004	20.47%	8.99%
2003	37.27%	26.38%
2002	[2.87%]	[23.37%]
2001	0.94%	[13.04%]
2000	4.98%	[10.14%]
1999	15.31%	19.53%
1998	6.63%	26.67%

Types of Top-Secret work

(source: The *Washington Post.com*).

"Top Secret America" - July 2010)

Air & Satellite Operations

Warfare- and combat-related air and space activities and operations of the military services, intelligence agencies, and federal government. The Air Force is the primary organization here, but the Navy and Marine Corps also fly large air wings, as do Customs and Border Patrol, and the FBI. The NRO is the national organization responsible for the development and operations of reconnaissance satellites.

Border Control

Homeland security functions associated with maintaining U.S. borders, including customs and immigration; port security; and surveillance of American airspace. The Department of Homeland Security and its sub-agencies (ie. Coast Guard and Customs and Border Protection) is the dominant border control organizations, but many military and law enforcement organizations also are deeply involved in the mission of border control.

Building and Personal Security

Personnel and physical security, including the security clearance system; the "special access program" system; operations security; critical infrastructure protection; and physical security measures (not including construction) including guard forces and various surveillance and authentication methods, including biometrics.

Counter-drug operations

All aspects of the "war on drugs" worldwide, including intelligence, law enforcement, and operations; sometimes also called counternarcoterrorism since 9/11. Through the DEA is the lead counter-drug organizations, the DoD, particularly in Afghanistan and Latin America, is also deeply involved in both intelligence and interdiction of narcotics.

Counter-IED Explosives Operations

Programs, including R&D, associated with efforts to counter terrorist and adversary use of improvised explosive devices including intelligence and operations efforts associated with identifying and attacking individual IEDs and the networks of fighters who employ them; as well as the forensics associated with gathering information after explosive incidents.

Counterintelligence

Efforts undertaken to prevent hostile intelligence organizations from gathering and collecting intelligence, whether against the U.S., commercial and industrial activities, or information associated with national security. These tasks have

been greatly complicated since 9/11 as emphasis has shifted from threats involving nation states to terrorist and extremist individuals and organizations.

Cyber Operations

Offensive and defensive cyber (or digital) warfare, including the fields of computer network attack, computer network exploitation, and computer network defense; as well as traditional electronic warfare (ie. jamming) intended to deny an adversary use of their electronically-dependent equipment through what is called "non-kinetic" means, that is, by fighting with electrons rather than explosives.

Disaster Preparedness

Planning, training, preparation, and operations relating to responding to the human & environmental effects of a large scale terrorist attack or the use of weapons of mass destruction by any party, including nuclear, biological, chemical, & radiological weapons; as well as governmental programs & preparations for continuity of operations and continuity of government in the event of an attack or disaster.

Facilities

Leasing and realty; design, construction, and renovation; management and maintenance of government occupied facilities and military bases; and specialty construction associated with securing Top Secret facilities, both internally and externally, including everything from fencing and barriers to Sensitive Compartmented Information Facilities (SCIF).

Ground Force Operations

Conventional military ground operations -- not including special operations -- primarily the activities of the Army and Marine Corps.

Human Intelligence

Often called HUMINT, involved the use of human beings as sources of intelligence information; including traditional spies; detainees; or the elicitation of information from unwitting persons.

Information Technology

The backbone infrastructure of communications and computing, including common user information and communications networks; computer hardware and software; and data processing and preservation (ie. data warehousing).

Intelligence Analysis

From open sources (news media or the Internet) to the most sensitive information collected or gleaned from human and technical sources. Since 9/11, there has been an explosion of the amount of info obtained via technical means, particularly imagery and communications inter-

cepts, necessitating new analytic methods of sorting, exploiting, and mining incoming information.

Law Enforcement

Work associated with the enforcement of laws, from investigation to arrest to prosecution. The primary law enforcement organizations of the U.S. government (ie. the FBI, DEA, ATF, U.S. Marshals Service) are assigned to the Department of Justice, while the Secret Service is assigned to the Department of Homeland Security. DoD, including each of its agencies and services, also has law enforcement arms, as do each of the major intelligence agencies.

Management and Administration

Generalized administrative and management functions associated with the day-to-day operations of an organization including record-keeping, audit, efficiency, budgeting and financial management; contracting, support for general policy-making and program analysis; modeling and simulations; as well as support for exercises.

Naval Operations

Conventional naval operations, both surface and subsurface, not including special operations, and primarily conducted by the Navy but also the Coast Guard when under DoD jurisdiction.

Nuclear Operations

Work relating to U.S. nuclear weapons and operations; nuclear-specific communications and codes related to Presidential control of the use of nuclear weapons; research, production, maintenance, movement, and retirement of nuclear warheads and nuclear materials; ballistic missile defense programs at the national level, and counter weapons of mass destruction operations.

Psychological Operations

Traditional operations including the creation and delivery of messages via leaflet, loudspeaker, radio or television; the newer "influence operations" associated with the creation of websites and the use of social media to extend U.S. influence, both overtly and covertly; and the separate clandestine and covert activities associated with influence, deception, and perception management.

Farnborough Air Show Statistics

- * \$47 Billion of contracts announced
- * 120,000 trade visitors
- * 228,000 total visitors
- * 1,455 exhibitions from 40 countries
- * 22 international pavilions

Special Operations

Unconventional warfare or SWAT -like non-military operations, including Air Force special tactics, Army special forces (Green Berets) and Rangers, Marine Corps special operations, Navy special warfare including SEALs; combat search and rescue; the specialized military-like organizations of the CIA, DEA, FBI, ICE, and other civil agencies; and the clandestine units and functions of the Joint Special Operations Command.

Staffing and Personnel

The work of managing civilian, military, and contractor personnel, including recruitment and placement: "staff augmentation" (particularly of Top-Secret cleared IT specialists) for short-term or surge projects; the normal administrative human resource functions; linguist programs associated with the war on terror; and special functions associated with facilitating highly cleared and undercover work.

Technical Intelligence

Non-human intelligence collection from all domains (ie. space, air, ground, sea, undersea) from all platforms, including satellites, aircraft, and helicopters, UAV (drones), ground sensors and stations, ships and submarines; and including all intelligence disciplines of signals intelligence (SIGINT) and measurements and signature intelligence (MASINT).

Training

Specialty training at the Top Secret level, including general courses of instruction held at government-run military and intelligence higher education institutes (eg colleges and universities); formal training courses for units and organizations to teach and practice specific tasks or missions; individual job training; and training conducted for coalition and foreign military, intelligence, and police organizations

Weapons Technology

R&D, test, evaluation, production, and maintenance of weapons and non-communications or intelligence-related hardware

"Top Secret America"**For all its hype, the statistics were interesting but I found the analysis, a bit lacking.**

Some facts from the *Washington Post* expose, "Top Secret America" revealed among other things that contractors sponsor events at conferences to market themselves to the U.S. government!

- The 2009 U.S. intelligence budget (\$75 billion, 2.5x its size on 9/11)—not including many military or domestic counterterrorism programs.
- Defense Intelligence Agency - 7500 employees in 2002 to 16,500 today.
- Budget for the National Security Agency doubled.
- 35 FBI Joint Terrorism Task Forces became 106.
- NSA intercepts and stores 1.7 billion emails, phone calls, and other types of communications.
- 854,000 people including 265,000 contractors have top-secret clearances (a surprisingly high number but lets not forget that the clearance doesn't provide access to all materials only that which had a need to know). Years ago my clearance for the Ballistic Missile Defense Organization allowed me to....walk across the hall so I could go to the bathroom

- 29% of the intelligence community are outside contractors and cost the equivalent of 49% of their personnel budgets.
- Secretary Gates wants to reduce the # of defense contractors by 13%.
- Some 1271 government organizations and 1931 private companies work on programs related to counterterrorism, homeland security, and intelligence in about 10,000 locations across the U.S. Of the 1931 companies that perform work at the top-secret level, more than a quarter - 533 - formed after 2001. Of these, about 800 firms do nothing by information technology. 110 of them do roughly 90% of the work.
- "The national security industry sells the military and intelligence agencies more than just airplanes, ships, and tanks; it sells contractors' brain power.
- The National Security Agency, which conducts worldwide electronic surveillance, hires private firms (at least 484 of them) to come up with most of its technological innovations.
- Since 2001 - General Dynamics acquired 11 firms specializing in satellites, signals and geospatial intelligence, surveillance, reconnaissance, technology integration, and imagery. Contracts have risen from 9 intel organizations to all 16. Revenues increased to \$31.9 billion in 2009 up from \$10.4 billion in 2000 as its workforce doubled from 43,300 to 91,700.

About the SPADE Defense Index

The SPADE Defense Index (NYSE-amex: DXS) provides an investment benchmark for the value that the market ascribes to companies involved with defense, homeland security, and space.

The Index is designed to reflect the broad diversity of activities that is representative of companies involved with the sector – including industrial firms that manufacture aircraft, tanks, ships, and missiles; and those involved with current and next generation systems related to network centric warfare and information technology; intelligence, surveillance, and reconnaissance; satellites; border security; and defense systems that protect the lives of our servicemen and servicewomen.

SPADE Indexes publishes a variety of sector and regional indexes. These include the SPADE Oklahoma Index (OKLAH) licensed to Geary Companies for its OOK Oklahoma ETF (NYSE: OOK) and the SPADE Texas Index (TEXAS) for its TXF Texas ETF (NYSE: TXF).

Licensed Products**Exchange Traded Fund - ETF**

Licensed to Invesco Powershares, the Powershares Aerospace & Defense Portfolio ETF (NYSE: PPA) is designed to track the performance of the SPADE Defense Index.

Rules

The Index was designed to be RIC (registered investment company) compliant for the purpose of enabling financial products. Companies are required to meet a variety of eligibility criteria including market valuation, liquidity, and listing on a major U.S. exchange. Full details are available on our website.

- * Market Cap: Minimum \$100M
- * Share Price: Minimum \$5.00
- * Sufficient Liquidity

Commentary (continued)

-ing up their defense capabilities. As an example Qatar has issued an RFP to acquire up to 40 fighter jets, Canada, announced plans to purchase 65 F-35 Lightning II fighter jets to replace some of its F/A-18 at a cost estimated to be around \$400 million. South Korea set its 3rd phase fighter acquisition competition for 2012 where they anticipate acquiring another 40-60 planes by 2020 to bolster the 120 Boeing F-15K aircraft they have already bought. And the 19 July 2010 *Defense News* cited that the Asian market for the F-35 aircraft (\$60M - \$90M each) could be for more than 500 fighters over the next two decades. And Sikorsky (United Technologies) said it plans to double its international helicopter sales to about \$2 billion a year by 2014.

European Economic Issues

Meanwhile economic and budget problems in Europe could be a net positive for the U.S. defense sector as resources are committed to debt reduction and the acquisition of U.S.-built equipment becomes cheaper than maintaining an indigenous capability. For example, in the United Kingdom, spending on research and technology has declined by 25% to 439 million pounds (\$676 M) since 2007 and defense spending cuts of 10%-20% are considered likely. Capabilities will either suffer or they will be supplemented by buying hardware from their allies.

Increased Commercial and Related Activity

Analysts see the commercial aerospace sector as beginning an upswing that will take it through much of the next decade as airlines around the world upgrade their fleets. Boeing has indicated that it is fully booked beyond the middle of the decade and is increasing manufacturing to meet demand—and this is before the order cycle uptick from U.S. carriers which have delayed purchases because they suffered financially in recent years. At the Farnborough Air Show in July, \$47 billion worth of contracts was announced, most of it commercial. Next year at the Paris Air Show (the show rotates sites), this figure should be much higher as government's get a handle on their budget situations and government-focused contracts are announced alongside the commercial activity.

Restructuring Operations

Defense companies have known that a peak in defense spending was coming and have been preparing for some time. Many have substantial cash on their balance sheets which will allow them to continue to shift into markets that they deem as faster growing. A leaner defense landscape will lead to an uptick in Mergers and Acquisitions. Boeing on 4Aug10 completed their \$775 million acquisition of Argon ST and the private equity acquisition of DynCorp closed on 7July10. Meanwhile Northrop Grumman announced it was exiting its shipbuilding business which they see has "little synergy between this and their other businesses". And European aerospace and defense firm, EADS, announced that it plans to expand in the U.S. and has an estimated 8 billion euros (\$10.3 Billion) to spend on an acquisition.

Our Destabilized World

The recent failed assassination attempt of the Iranian president and North Korea's capturing another South Korean vessel reveal that our view on safety can change quickly. At this time there are several dozen ongoing armed conflicts around the world that could remain at current

activity or escalate at any time. What we are willing to spend in the aftermath of a terrorist or warlike act can quickly shift our spending priorities.

#4 So, what's the downside?

Although the actual impact on a company's revenue from changes in the government budget may not be felt for several quarters (due to the length of time between when the budget process begins and money becomes available to procure items or research), the announcement itself tends to move stocks in the sector. Negative news and rumors can drive stocks in the sector lower even when no action takes place. At this point it time it is not clearly known what role Congress will take in reducing defense spending and what it will allow the Pentagon to do. All signs point to the fact that the Pentagon's efforts to restructure its operations are being met positively by many members of Congress and the money it frees up will be used to rebuild its capabilities, supporting the sector as a whole. However, changes can and will impact specific programs as well as the companies working on them. As an example, companies receiving significant revenues from war-time operations are likely to see declines as the U.S. pulls out of Iraq and Afghanistan once additional acquisitions to replace spent materials and build-up capabilities is accomplished. Although most of the companies that trade on the stock exchanges are much less exposed to the war effort than the public would imagine, it is likely they would be negatively impacted in the short term before share prices rebound. Likewise larger companies are more diversified among programs, agencies, and customers, and hence more immune to individual wins and losses but are susceptible to greater impact when large shifts occur.

#5 ETF or Individual Company?

In this environment, picking an individual stock to play the sector can be more risky than investing in a fund or a fund as part of a larger strategy. The defense sector has always had its own nuances, such as companies not being able to provide details on classified sector contracts, a budget which has been estimated by the *Washington Post* to be \$75 billion. With all the conversations about what and how DoD will restructure and how large its budget will be in coming years, the opportunities that the sector presents (which have included beating by better than 100% or tracking the market for more than a decade and with current valuations representing a business decline that has not yet appeared) is definitely offset by the risk of these new unknowns. Recent movements in some individual stocks can be dramatic and highlight the risks. After the resignation of the president and COO of Mantech for undisclosed reason, their stock decline by 18% in 2Q10 and was downgraded from buy to hold by BB&T analyst Mike Lewis. Comtech dropped 38% after losing an incumbent contract to Viasat. Meanwhile as I type this, satellite imagery firm DigitalGlobe is up 14% today after receiving a multi-billion contract. The benchmark SPADE Defense Index (NYSE: DXS), provides a useful measure to see how the individual companies stand up to the performance of the sector as a whole. As the underlying index to the Powershares Aerospace & Defense ETF (NYSE: PPA), it covers the breadth of the sector's activities, not a concentrated portion of it and represents firms whose activities are vital to the sector and vital to their companies operations.

With A&D representing 5% of U.S. GDP and the sector underweighted by the S&P500, investors should include the sector as a core element of their portfolio. At this time, the ETF appear to be less volatile, more diversified means to get that exposure.

Understanding the Rise in Military Personnel Costs

* Sec. Gates has placed much of the blame on Congress for giving higher pay raises than requested and refusing to raise Tricare health care premiums although executive branch actions did not help.

* Average yearly cost of each person in the armed forces has risen to \$100,000 - \$120,000 per year

* The Tricare bill exceeds \$50 billion annually.

* In 1999, Congress raised the % of base pay military retirees receive after 20 years of service from 40% to 50%.

* In 2000, Congress and the White House allowed military retirees and their family members to keep Tricare benefits for life, changing the policy that at 65 they entered the Medicare system.

* To keep morale, the Bush administration raised basic pay, benefits, and bonuses to compensate and retain military personnel who were sent on back-to-back deployments to Iraq. During the Bush Administration, the average pay and benefits increased by 45% over and above inflation and Tricare costs jumped 163%.

* The Pentagon also began using base pay instead of what is known as "military annual compensation" (which is more than 2x base pay) to determine the size of the annual pay raise

* Taking steps related to the Tricare program (who is eligible, premiums, etc.) using the MAC vs. base pay, and after our withdrawal from the Mid-East, reducing the size of ground forces will provide enough funds to buy new equipment in a smaller budget environment.

by Lawrence Korb, Senior Fellow, National Security, Center for American Progress, in *Armed Forces Journal*, July/August 2010.

How the Army Expects Unmanned Aircraft Systems to Develop

Army operational unmanned aircraft was 54 in October 2001 and more than 4000 in various sizes and capabilities, today.

2010-2015

- * Rapid integration of current technologies
- * Personnel requirements documented in tactical units
- * Overseas contingency ops require rapid integration
- * ISR is the dominant mission set
- * Extended Range / Multi-purpose UAS initial fielding
- * One System remote video terminal and ground control station
- * Transitioning to full network capability

2016-2025

- * Technology increases UAS autonomy
- * Net-centric force begins
- * Resolution improves (targeting, effects, collateral damage)
- * Optionally piloted and lighter-than-air aircraft emerge
- * One operator controls multiple platforms
- * Disseminate information across multiple echelons
- * Distributed UAS control from multiple sites
- * Cargo UAS

2026-2035

- * Size, weight, power, and endurance improvements
- * Point-to-point capability (vertical takeoff and landing)
- * Adverse weather capable
- * Sense and avoid
- * Full national airspace integration
- * Universal commonality
- * Swarming
- * Medical evacuation
- * Optionally piloted vehicles mature
- * Increased number of UAS
- * Near autonomous capable
- * A common multipurpose, multirole UAS

The F-35

* According to Defense Secretary Robert Gates, "We cannot afford, as a nation, not to have this airplane".

* The F-35 is important because of its ability to "find and exploit" gaps—using a combination of stealth, supersonic, and sensor capabilities—that make it a unique and game changing asset.

* In its primary strike role, it can fly unseen through routes in enemy territory; get close to the target for ultraprecise deliver, and then exit just as stealthily. The pilot can avoid the fight and focus on the mission.

* Lockheed Martin has promised customers that the F-35A conventional take-off and landing variant will have a unit flyaway cost of \$60M in 2010 dollars, making it comparable to the F-15 Block 60 or F/A-18 E/F. The firm also changed from cost-plus to fixed price—two years earlier than planned.

* Total acquisition cost including R&D: \$382 billion for 2457 aircraft, up 65% since 2002 projections.

* The higher estimated costs on the program (CAPE) are based on experiences using legacy aircraft (F-16, F/A-18, F-22) that Lockheed says were developed and produced differently, so estimates are apples and oranges.

* The F-35 is behind schedule however perception of how far behind is wrong. By June 2010, 136 flight tests has been accomplished vs. the 118 flight plan. All three variants of the aircraft are flying and the Pentagon's acquisition report stated that all key performance parameters are being met. With three variants in concurrent production, per unit costs for each aircraft is difficult to determine.

Armed Forces July/Aug 2010

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Scott Sacknoff: Index Manager

Aug-10		SPADEFense Index					Market	Forward	Price/	Price/	PEG	
Company	Ticker	Float %	Price	Price	% Ch	% Ch	Cap	P/E	Sales	Book	5 yr	Div Yld
		30-Jul-10	30-Jun-10	30-Jul-10	YTD	MTD	intraday	(ttm)	ttm	mrq	expected	forward %
AAR Corp	AIR	0.36%	16.74	16.80	-26.89%	0.36%	0.66	9.77	0.50	0.88	0.98	
AeroVironment	AVAV	0.28%	21.73	23.91	-17.78%	10.03%	0.52	19.13	2.11	2.24	0.92	
Alliant Techsystems	ATK	1.20%	62.06	67.16	-23.92%	8.22%	2.22	7.90	0.47	2.83	0.54	
American Science & Engineering	ASEI	0.39%	76.21	79.18	4.40%	3.90%	0.71	18.24	2.94	3.18	1.20	1.50%
Applied Signal Technology	APSG	0.15%	19.65	20.76	7.68%	5.65%	0.28	18.37	1.31	1.91	1.38	2.40%
Argon St	STST	0.41%	34.29	34.47	58.77%	0.52%	0.75	28.25	2.24	2.27	3.09	
Ball Corp	BLL	2.92%	52.83	58.24	12.65%	10.24%	5.38	11.62	0.71	3.48	1.73	0.70%
Boeing Co	BA	6.50%	62.75	68.14	25.88%	8.59%	49.68	14.05	0.73	16.65	2.01	2.50%
Caci Intl	CACI	0.77%	42.48	47.02	-3.75%	10.69%	1.42	12.51	0.47	1.27	0.98	
Ceradyne Inc	CRDN	0.32%	21.37	23.25	20.97%	8.80%	0.59	19.21	1.44	0.94	3.65	
Cogent Inc.	COGT	0.44%	9.01	8.99	-13.47%	-0.22%	0.81	19.13	6.63	1.46	1.94	
Computer Sciences	CSC	3.75%	45.25	45.33	-21.21%	0.18%	6.99	8.02	0.43	1.08	1.12	1.30%
Comtech	CMTL	0.33%	29.93	21.57	-38.44%	-27.93%	0.61	10.73	0.96	0.91	0.50	
Cubic Corp	CUB	0.59%	36.38	40.52	8.63%	11.38%	1.08	16.67	1.03	2.38	2.51	0.40%
Digital Globe	DGI	0.67%	26.30	27.26	12.64%	3.65%	1.24	21.3	4.26	2.55	5.93	
Ducommun	DCO	0.12%	17.10	20.89	11.65%	22.16%	0.22	9.16	0.51	0.90	0.79	1.50%
DynCorp	DCP	0.00%	17.52	17.55	22.30%	0.17%						
Eibit Systems	ESLT	1.27%	50.28	55.01	-15.43%	9.41%	2.35	10.72				2.62%
EMS Tech	ELMG	0.14%	15.02	16.64	14.76%	10.79%	0.25	14.73	0.72	1.06	1.06	
Esterline Technologies	ESL	0.84%	47.45	51.33	25.90%	8.18%	1.54	13.06	1.04	1.20	1.30	
Flir Systems	FLIR	2.47%	29.09	29.76	-9.07%	2.30%	4.60	17.01	3.77	3.46	1.17	
Force Protection	FRPT	0.17%	4.10	4.47	-14.20%	9.02%	0.31	9.31	0.33	0.99	0.18	
Gencorp	GY	0.17%	4.38	5.26	-24.86%	20.09%	0.31	21.04	0.36			
General Dynamics	GD	5.12%	58.56	61.25	-10.15%	4.59%	23.30	8.66	0.75	1.83	1.28	2.70%
GeoEye	GEOY	0.41%	31.14	34.52	23.82%	10.85%	0.76	19.28	2.46	2.50	0.97	
Goodrich Corp	GR	4.22%	66.25	72.87	13.42%	9.99%	9.12	14.26	1.37	3.10	1.81	1.50%
Harris Corp	HRS	3.13%	41.65	44.53	-6.35%	6.91%	5.78	9.64	1.16	2.74	0.67	1.90%
Honeywell Intl	HON	6.76%	39.03	42.86	9.34%	9.81%	33.10	14.19	1.04	3.66	1.69	2.80%
ICX Technologies	ICXT	0.15%	7.30	7.69	-19.22%	5.34%	0.27	19.23	1.54	1.6	1.31	
Integral Systems	ISYS	0.07%	6.35	7.56	-12.70%	19.06%	0.13	11.63	0.85	1.13	1.03	
Itt Indus	ITT	3.99%	44.92	47.12	-5.27%	4.90%	8.65	10.27	0.83	2.32	0.98	2.00%
Kratos Defense & Security	KTOS	0.10%	10.50	11.06	4.83%	5.33%	0.18	17.84	0.54	1.36	2.14	
L-1 Identity Solutions	ID	0.41%	8.19	8.16	8.95%	-0.37%	0.76	51.00	1.18	1.04	40.80	
L-3 Communications Hldgs	LLL	3.87%	70.84	73.04	-16.00%	3.11%	8.43	8.22	0.54	1.24	1.03	2.20%
Ladish Co	LDSH	0.25%	22.72	29.41	95.42%	29.45%	0.46	16.07	1.29	2.00	3.15	
Lockheed Martin	LMT	6.05%	74.50	75.15	-0.27%	0.87%	27.05	9.71	0.59	7.23	1.23	3.40%
Mantech International'a'	MANT	0.78%	42.57	39.65	-17.98%	-6.86%	1.43	10.55	0.68	1.70	1.08	
Mercury Computer Sys	MRCY	0.17%	11.73	13.20	19.89%	12.53%	0.31	21.29	1.66	1.85	1.68	
Moog Inc.	MOGA	0.88%	32.23	35.81	22.51%	11.11%	1.62	13.21	0.81	1.43	1.23	
NCI Information Technology	NCIT	0.17%	22.59	23.56	-14.79%	4.32%	0.32	12.67	0.69	2.51	1.00	
Northrop Grumman	NOC	4.47%	54.44	58.64	5.00%	7.71%	17.66	8.71	0.51	1.36	0.87	3.20%
Orbital Sciences Corp	ORB	0.46%	15.77	14.64	-4.06%	-7.17%	0.84	12.41	0.70	1.56	1.54	
Oshkosh Truck	OSK	1.67%	31.16	34.38	-7.16%	10.33%	3.09	9.85	0.39	3.19	0.34	
Osi Systems	OSIS	0.27%	27.77	27.79	1.87%	0.07%	0.51	17.05	0.90	1.68	0.92	
Precision Castparts	PCP	5.02%	102.92	122.19	10.73%	18.72%	17.37	14.31	3.13	2.96	1.64	0.10%
Raytheon Co	RTN	4.10%	48.39	46.27	-10.19%	-4.38%	17.63	8.73	0.71	1.75	1.16	3.20%
Rockwell Collins	COL	4.03%	53.13	57.16	3.25%	7.59%	9.12	14.40	1.99	5.75	1.68	1.70%
SAIC	SAI	3.43%	16.74	16.63	-12.20%	-0.66%	6.32	11.09	0.58	2.88	0.94	
Sra International'a'	SRX	0.68%	19.67	22.22	16.34%	12.96%	1.26	15.65	0.76	1.68	1.15	
Stanley Inc.	SXE	0.49%	37.38	37.35	36.26%	-0.08%	0.91	16.31	1.03	3.16	1.37	
TASER International Inc.	TASR	0.14%	3.90	4.10	-6.39%	5.13%	0.26	29.29	2.36	2.04	13.03	
Teledyne Technologies	TDY	0.81%	38.58	41.03	6.96%	6.35%	1.49	12.78	0.86	2.20	8.15	
Textron	TXT	3.08%	16.97	20.76	10.37%	22.33%	6.28	14.52	0.61	2.15	1.12	0.40%
Triumph Group	TGI	1.00%	66.63	75.90	57.31%	13.91%	1.27	10.80	1.00	1.51	3.98	0.20%
United Technologies	UTX	6.87%	64.91	71.10	2.43%	9.54%	66.06	13.29	1.24	3.32	1.46	2.40%
URS Corporation	URS	1.81%	39.35	40.39	-9.28%	2.64%	3.34	10.77	0.37	0.84	1.06	
Viasat Inc	VSAT	0.78%	32.56	36.14	13.72%	11.00%	1.44	20.89	2.10	1.92	1.89	
VSE Corporation	VSEC	0.10%	31.82	35.51	-21.23%	11.60%	0.18	7.43	0.19	1.77	0.78	0.70%

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