



**PRECISION STRIKE
ASSOCIATION**
Affiliate, National Defense
Industrial Association

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"From Cruise Missiles Association to Precision Strike Association we have been dedicated to advancing the art and science of precision engagement concepts and technology for more than 25 years."

VISION STATEMENT

We aspire to be the premier association dedicated to advancing the art and science of precision engagement concepts and technology.

To accomplish this, we will promote the development of systems and procedures in order to locate, fix, track, target, and attack fixed, moving, and relocatable targets.

We recognize that battlespace management, the network within which it functions, and the adjunct command and control requirements are crucial to success on the battlefield.

PSA has a global perspective and welcomes international participation.

PSTS-16 Showcases Priorities To Meet New Great-Power Competition

By Ginny Sniegon, PSA Programs Chair

Please make plans NOW to join us for the 26th annual SECRET//NOFORN Precision Strike Technology Symposium (PSTS-16) scheduled for 25-27 October 2016 at the JHU/APL Kossiakoff Center in Laurel, MD.

The most profound challenges in the world today require the immediate creation of successful technological innovation and significant and lasting changes.

This year's theme *Precision Strike Priorities to Meet New Great-Power Competition* for our very popular and time-critical symposium allows the precision strike community the opportunity to pursue many of these challenges by showcasing the following focus areas:

- Geo-Political Landscape/Threat Environment/Precision Weapons Systems
- Enabling Technologies/Innovative Solutions/Technology Investment
- Strategic Challenges/Emerging Capabilities/Evolution of Nuclear Enterprise

Don't miss out on this extraordinary three-day symposium that will feature powerful military and civilian superstars including General Paul Selva, USAF—Vice Chairman, Joint Chiefs of Staff; Admiral Scott Swift, USN—Commander, U.S. Pacific Fleet; Retired General John Allen, USMC—Co-Director, Center for 21st Century Security and Intelligence; Lt Gen Jack Weinstein, USAF—Deputy



General Paul Selva, USAF
VCJCS



Admiral Scott Swift, USN
CDR, USPACFLT



John R. Allen
Retired USMC 4-Star General



Lt Gen Jack Weinstein, USAF
A-10, HQ USAF



Maj Gen Michael Fortney, USAF
VC AFGSC

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Chairman's Column



2016 has been another fast paced year for Precision Strike. With ever increasing threats, our community is pressured to respond and reestablish overmatch to make any fight in the Pacific a lopsided one in our favor. PACOM and PACFLT are intimately familiar with the challenges facing our Nation and threatening freedom of the seas. There is no doubt that large powers are heavily investing in capabilities that threaten our dominance in the Pacific.

In the parlance of military strategists today, the Precision Strike Community is tasked with solving the "Great Power Challenge" to reassert U.S. sea supremacy. Our forces need better systems in greater quantities to effectively counter these challenges.

"Distributed Lethality" and "Joint Integrated Fires" offer a strategic context for how our military forces can effectively approach the next conflict. It is the Precision Strike Community's charge to find and develop the systems that provide our Warfighters the means to prosecute the fight.

The Precision Strike Association (PSA) is providing a powerful forum for the rich exchange of ideas, talent and energy between government, industry, the laboratories and academia.

This year, in keeping with the identified capability gap theme, our classified Precision Strike Technology Symposium (PSTS-16) theme is *Precision Strike Priorities to Meet the New Great Power Challenge*.

It builds upon the rapid acquisition focused Precision Strike Annual Review (PSAR-16) that was success-

ful with strong participation and superb speakers. PSTS-16 promises to set a new high water mark with a not-to-be-missed agenda. Please plan to join us at this unique event! For more information and to register, please visit our website: www.precisionstrike.org

What else is going on at PSA? Our exclusive PSA Roundtable luncheon series is continuing this summer and fall. In addition, efforts to kick-off a two-day PEO Forum continues with plans to host one in 2017. Look for further announcements on these intimate events providing direct insights into the challenges facing our military leaders.

Become more involved in Precision Strike. Connect your organization with Precision Strike. Identify organizational leaders, engineers and project managers who would benefit from and add to the exchange of ideas.

Also consider event sponsorship. PSA succeeds when companies get involved and people take an active role helping to facilitate communication on topics critical to the Precision Strike Community.

Sponsorship and Exhibit opportunities for PSTS-16 remain. Click the below links to download the sponsorship and exhibitor forms

http://www.precisionstrike.org/Events/7PST/PDFs/7PST_SPNSR-FORM-7-7.pdf

http://www.precisionstrike.org/Events/7PST/PDFs/7PST_EXH-Contracts-6-9f.pdf

Thank you for your continued involvement in the Precision Strike Association. We look forward to seeing you at PSTS-16!

Ken Masson
Chairman of the Board
Precision Strike Association

PSAR 2016: Acquisition Strategy for 3rd Offset

The Precision Strike Association (PSA) held its Precision Strike Annual Review (PSAR-2016) March 15-16 at the Waterford at Springfield, Springfield, VA.

Although four months have passed since PSA conducted PSAR-16, the high caliber of numerous relevant topics and superb speakers confirmed by the Precision Strike Annual Review Team chaired by Ginny Sniegion, CDR Jumbo Baird, Dave Rice, Dick Rumpf and Ken Masson resulted in a highly challenging and extremely productive two-day Review that focused on *Precision Engagement Acquisition Strategy to Support 3rd Offset*. Highlights of PSAR-16 remain worthy of your attention and consideration and are addressed during the next several pages.

The event defined topics related to innovations and program enhancements designed for the future Joint Force as precision strike engagement will continue to be a priority capability area that is required across all spectrums of conflict. PSAR-16 highlighted critical topics and challenges to address precision strike's way forward to support the Third Offset. Discussions with distinguished leaders, policy makers and acquisition experts highlighted the two-day critical event.

Meanwhile, a special feature of PSAR-16 was presentation of the 20th William J. Perry Award that recognizes significant contributions to the development and support of precision strike systems that have led to the strengthening of our vital national security interests.

PSA Chairman Ken Masson presented this year's award to James "Hondo" Geurts, Acquisition

Executive, U.S. Special Operations Command, McDill AFB, FL on behalf of Dr. Bill Perry who provided special remarks at the award ceremony luncheon. (See article starting on page 10.)

This year's PSAR got underway with remarks from **Dr. Steven Blank**, a senior fellow with the American Foreign Policy Council, who addressed military lessons of Russian operations in Syria.



Dr. Steven Blank

The internationally known expert on Russian foreign and defense policies spoke as some Russian warplanes were leaving the Hmeymin base in Syria for their home country — the start of a partial withdrawal of Russian forces announced by President Vladimir Putin.

Putin surprised the world by declaring the "main part" of his nation's forces would be pulling out of Syria's conflict, saying Russia had largely achieved its goals there. But Russia said it would leave anti-aircraft systems and other weapons in Syria. And in mid-June, Russian aircraft dropped bombs on rebels battling Islamic State in southern Syria, raising serious concerns about the intentions of the Russians.

Analysts have alleged since the start of Russia's intervention — that the Kremlin's aim in Syria was never to target the self-described Islamic State but instead to tip the balance of power from Syrian opposition groups to Bashar Assad's regime.

Dr. Blank said Putin's announcement hardly signifies a Russian exit from Syria's civil war. He added that Russia's remaining forces in Syria

can now occupy naval and air bases in perpetuity and are busily building an anti-access and area defense naval, ground and air capability to deny NATO and the U.S. options to project military power into Syria or the Eastern Mediterranean.

Meanwhile, he believes the U.S. government suffers from an absence of high-quality expertise on Russia. "We need to reform our intelligence processes, not just in terms of intelligence gathering and analysis. We need a much greater investment in Russian experts. The flow of people interested in Russia has dried up. There is a quantitative and qualitative lack of capable analysts," he said.

Next up at the podium was **Colonel Paul "PJ" Maykish, USAF**, Senior Air Force Strategy Advisor, OSD-P, who framed the Third Offset Strategy for the PSAR-16 attendees.



Colonel Paul "PJ" Maykish, USAF

The Third Offset Strategy is designed to allow the US to maintain technological superiority as it transitions from one warfighting regime to another and bolster a weakened conventional deterrence. In addition to new technologies, the strategy requires innovative thinking, the development of new operational concepts, new ways of organizing, and long-term strategies.

While the first and second offset strategies supported DoD well for 25 years, the margin of technological superiority, particularly for guided munitions, is eroding. Unlike the first two offset strategies, the third relies on commercially driven tech-

nology such as robotics, autonomously operating vehicles, advanced guidance and control systems, visualization, biotechnology, miniaturization, advanced computing, big data analytics and additive manufacturing.

Maykish described the preceding offset strategies and how the third is different. He noted how the world security environment has changed relative to the third offset and listed the five main building blocks of future technology trends that are important elements of the Third Offset Strategy. He also discussed precision strike considerations regarding the new doctrine.

He said the precision-guided weapons regime has proliferated. The weapons are lethal and likely to increase in lethality, but any advantages the United States might have in this area is now short-lived because of the globalization of technology.

Maykish said “innovative and cooperative operation of manned and unmanned systems is a lucrative area for development” as is further development of hardened networked enabled autonomous weaponry.

He asked the precision strike community how it could achieve the so-called Iron Triangle (better, faster, cheaper). Maykish said what is possible and what is achievable is not always the same. He said: “the PSA, a systemic strength of the United States, is in the best position to close the delta, figure out what is actually achievable.”

Rear Admiral Mark Darrah, USN, Program Executive Officer for Unmanned Aviation and Strike Weapons, said the precision strike challenges involve lethality and modularity. “The Navy needs to manage and develop flexibility and lethality for mobile, moving and maneuvering at-sea targets, whether in open-ocean or the littorals.”



Rear Admiral Mark Darrah, USN



Colonel Chris Prigge, USA

Weapons modularity is key to addressing the challenges. Darrah said, “naval forces must be able to do surface warfare and strike warfare, in maritime and land operations, using the same weapons” and “there are challenges of clutter between land and maritime arenas that are completely different animals for precision strike and extended reach precision strike.”

Furthermore, he said, “our naval forces need to tie together a salvo of different weapons by networking them together to make them more lethal and then reduce the number of weapons that we actually fire.” Meanwhile, we are starting to see autonomy in weapons networked together that make their own decisions on specific targeting.

“Go fast” is a different challenge faced by the Navy. “We got to get stuff to the fleet faster. We must reduce the amount of time it takes to get critical capabilities to the warfighter, to include precision capability,” he believes.

Colonel Chris Prigge, USA, Chief, Strategy Development Division (J-5), Joint Staff, said he was in an “awkward spot” in discussing the 2015 National Military Strategy (NMS) since work has already begun on the 2016 NMS document.

The next version, he said, will be “a little bit different than those published over the last 27 years since the next NMS will probably be an internal classified document.

Previous NMS documents were viewed as “strategic” but Prigge said the next NMS should be seen in the context of a “conversation” captured in military documents produced in both a regular and ad hoc basis.” He said the NMS will “overlap with other documents that are part of the larger joint strategic planning system.” The most recent NMS is a “snapshot of where the conversation was a year ago,” he stated.

Prigge talked about “how the conversation is going and how thinking has evolved” as regards technology development, a key trend. He discussed how technology in the civilian marketplace could be leveraged for military use. The major challenges faced by our military leaders, Prigge added, include a requirement of the Joint Force to address state threats, including Russia, and non-state threats (ISIS and other terrorist organizations) at the same time.

Patrick Buckley supports the Program Executive Officer, Unmanned Aviation and Strike Weapons (PEO(U&W)) as the Deputy PEO for UAS Programs. He handles current and emerging Navy UAS acquisition programs to include the MQ-4C Triton, MQ-8C Fire Scout and the X-47B Unmanned Combat Air System Demonstration (UCAS-D) and the future Carrier Launched UAS. He said the successful X-47B demo “opened up all kinds of opportunities for unmanned aircraft on aircraft carriers.”



Patrick Buckley



James “Hondo” Geurts

In offering a top-level view of UAS procurement and research and development, Buckley described how an unmanned air vehicle was successfully tested in Afghanistan as a cargo re-supply platform, hauling over 4.5 million pound of supplies in 2,000 sorties over three years.

Buckley said “regardless of UAS size, there are roles that unmanned systems play across the kill chain, from situational awareness, reconnaissance and target acquisition and targeting.” Some UAS launch weapons themselves and provide battle damage assessment, he added.

He sees greater utility of unmanned systems by the Navy. A small drone outfitted with a heat sensor could be used to locate sailors who fall off naval vessels or conduct cumbersome hull paint inspections.

“We need to look for additional ways that UAS can work across the kill chain” as the distinction between unmanned systems and precision strike weapons continue to blur,” added Buckley.

PSA presented **James “Hondo” Geurts** to keynote the opening day of PSAR-16. Geurts—USSOCOM’s Acquisition Executive—addressed rapid acquisition to support the warfighter. Stated Geurts: “We are the king of opportunistic acquisition. We are good poachers. We will steal and adapt on everything that’s a good thing.”

For example, U.S. Special Operations Command is scouting for companies to manufacture the ubiquitous AK-47 assault rifle and other Soviet-bloc-era weapons here in the United States. The idea is to have a US source for weapons our foreign partners need to fight extremists, weapons they know how to use, know how to fix.

He said five percent of USSOCOM’s budget is devoted to research and

development for transition-sake, not basic R&D...and we have created new templates for how to think about science and technology.” Geurts said “we want to bring two things to the force: expertise and trust, expertise to bear on hard missions in a way that engenders thrust.”

Procurement is also handled differently at USSOCOM. “We like to acquire, then require, buy small quantities of items, test them and then write requirement documents if they work for us.”

As regards the Third Offset strategy, Geurts said “the question is how do we take existing technology and create a new effect? And how do we take new technology and solve an old problem?”

He added: “To me, velocity is our competitive advance since we can’t afford to out mass our enemies. And velocity is speed in the right direction since we can’t be quick to the wrong thing.”

Brigadier General David “Gunny” Been, USAF, Director, Special Programs, OUSD AT&L, discussed the past, present and future role of the B-1B Lancer bomber. Having deployed with the B-1 six times in three different wars, Been provided a capabilities overview, describing what the B-1B brings to the combatant commander. Used in Afghanistan and Iraq for close air support and scud-busting, the B-1 over the last decade provided on-call CAS in Afghanistan and is now back in Iraq and Syria supporting the counter-ISIL fight.

Even though the B-1B is not stealthy, it still has a great standoff capability employing advanced precision strike weapons to “kick the door in from a distance,” he said.

Been said the B-1 is a strong candidate for a new mission. The Arsenal Plane project will convert one of the nation’s oldest aircraft



**Brigadier General
David “Gunny” Been, USAF**



Dr. Chris Michienzi

platforms into a flying launch pad for all sorts of different conventional payloads. He said the Lancer “could be a great dump truck to carry a lot of different weapons.”

In practice, the Arsenal Plane will function as a very large airborne magazine, networked to fifth generation aircraft that act as forward sensor and targeting nodes, essentially combining different systems already in our inventory to create new capabilities.

Dr. Chris Michienzi, a Senior Industry Analyst, Missiles & Munitions, OUSD(AT&L)/DASD, Manufacturing and Industrial Base Policy, addressed precision strike issues and initiatives.

She said “budget swings are not new, but they can have significant consequences for the industrial base.” For example, the solid rocket motor (SRM) industrial base has consolidated with just two US sources remaining, Aerojet/Rocketdyne and Orbital ATK. “Two is not enough for critical mass,” she believes. Michienzi blames the lack of SRM development programs, noting that the last one undertaken for a new missile was in 1979.

“We need to invest in tactical SRM RDT&E to make sure we have defense capability to spur innovation for next generation technical superiority,” she said, noting that DoD has earmarked seed money for the US firms to build advanced SRM prototypes and investment in new technologies.

Michienzi said budgets for missile R&D and production are decreasing. “We are focusing too much on improving our legacy systems. Raytheon and Lockheed Martin are not going to go out of business tomorrow, but we are concerned about their subcontractors.”

Major General Ole Knudson, USA, Deputy Director, Missile Defense Agency, said the MDA mission is to develop, test, and field an integrated, layered, ballistic missile defense system (BMDS) to defend the United States, its deployed forces, allies, and friends against all ranges of enemy ballistic missiles in all phases of flight.

Ongoing efforts include the planned deployment of ground-based interceptors: 40 to Fort Greely, Alaska, and four to Vandenberg Air Force Base, California, for a total of 44 by the end of 2017. Meanwhile, the Exoatmospheric Kill Vehicle is the heart of the ground-based mid-course defense, or GMD, interceptor program, which uses land-based missiles to intercept ballistic missiles before they reenter the atmosphere.

“BMD has come a long way in the last decade. For example, hit-to-kill works. The physics is there. We’ve done it many times. But as we make our advances, our potential adversaries have advanced their capabilities and capacity as regards precision weapons and cruise missiles. This is a growing problem. We’ve made great strides on what we’re doing on missile defense, but there’s a lot more to do,” he said.

Colonel Michael Schnabel, USAF, Chief of the Foreign Disclosure, Weapons & Technology Transfer Div., SAF/IAPT, anchored the International Precision Weapons Session, providing his assessment of foreign military sales market dynamics.

As would be expected, a big part of what’s going on now is in the area of air to surface munitions, both for



Major General
Ole Knudson, USA



Colonel
Michael Schnabel, USAF

the US military and coalition partners. He said there are cases where market demand can’t be easily filled despite the fact that US precision strike weapons makers have “doubled capacity and will double it again this year and for several years down the road.”

Schnabel said “depending on the weapons systems, we are seeing different vulnerabilities impacted by industrial capacity and a country’s past procurements. We are doing our best to accommodate those nations.”

With \$40 billion in weapons sold by the US last year, Schnabel sees “a much better understanding within the US Government of the importance of foreign military sales, especially direct commercial sales.”

The second day of PSAR-16 began with **Rep. Rob Wittman (R-VA)**, a member of the House Armed Services Committee, who shared the congressional perspective on military readiness, which he said includes force modernization and research and development. “I would argue that modernization and R&D are critical elements of readiness. R&D allows us to keep a strategic advantage, a tactical overmatch, against our adversaries,” he stated.

Wittman said the US needs to get advanced technology deployed as quickly as possible since our adversaries in many instances have been able to speed up fielding of their new weapons. Furthermore, he said, “they have become adept at stealing our technology.”

He said the challenge we face is “how to reestablish readiness and how to make sure we deliver the best weapons in the most efficient ways. We have to climb a significant hill to regain readiness, but I am confident we can do it in the face of many adversaries.”

Wittman added: “Deterrence comes from a strong robust capable military and precision strike is an important part of the equation.”

Chris Van Metre is President of SCRA Applied R&D, a non-profit firm that works to promote industry, federal agencies and universities collaboration to rapidly commercialize applied research.

He said the current defense acquisition system takes too long and is too costly, but ways exist to reform the “obstructive” process governed by the existing federal acquisition regulations.

Van Metre said enterprise partnerships involving government, industry and academia are set up to deliver better and faster results but are often times hampered. He believes the NASA-originated Other Transaction Consortium Business Model can break down those barriers.

He said the OT model fell out of favor for major weapons systems acquisition programs, but is starting to gain acceptance again. “This is a better way of doing business. It’s here. It’s a matter of getting everybody informed that it exists,” said Van Metre.



Rep. Rob Wittman (R-VA)



Chris Van Metre

Brigadier General Kevin “Trap” Kennedy, USAF, Director, Cyberspace Operations & Warfighting Integration, Office of SECAF, discussed ongoing efforts on cybersecurity.

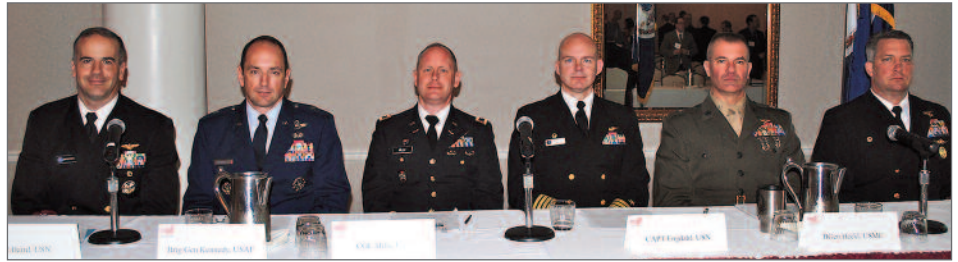
He said we must think of cybersecurity as an offensive capability. Furthermore, he added, “any kind of precision strike capability we want to field in the future will ride in the cybersecurity domain.”

Kennedy stated: “Everything we generate to create precision effects have cybersecurity aspects, and we must make sure we have cybersecurity in our cross checks so we don’t build a system that can’t work in a contested environment.”

Lieutenant General Anthony Ierardi, USA, Director for Force Structure, Resources & Assessment (J-8), The Joint Staff, keynoted the second day’s program, highlighting precision engagement initiatives and challenges that are critical for the way forward.

He outlined the precision strike investments in the \$582.7 billion FY 2017 defense budget request and how it supports the Third Offset Strategy. The Pentagon is requesting \$7.5 billion to fund the military campaign against ISIL. Of that, \$1.8 billion buys more than 45,000 GPS-guided smart bombs and laser-guided rockets.

DoD will take micro- cameras, sensors and microelectro- mechanical systems and put them on small diameter bombs. Swarming autonomous vehicles will operate in



Rapid Fielding Panel

all sorts of ways and in multiple domains. There’s also a project involving gun-based missile point defense that is utilizing some of the same hypervelocity smart projectiles that was developed for the electro-magnetic gun.

The budget submission contains a request for \$2 billion spread over the next five years to purchase 4,000 Tomahawk missiles. It also includes \$2.9 billion over the Future Years Defense Program (FYDP) for the SM-6 interceptor, both to purchase 650 of the supersonic weapons and to advance them to become a long-range anti-ship missile for the first time through incorporation of a multi-modal seeker. The budget request also includes \$927 million over the FYDP for the Long Range Anti-Ship Missile (LRASM).

Ierardi said “the Third Offset Strategy needs to harness a technical revolution to counter our adversaries. We look to industry to be a source of innovation for the 3rd Offset that will spur our RDT&E and procurement capabilities.”

The Precision Engagement Requirements for Rapid Fielding Panel was moderated by **CDR David “Jumbo” Baird, USN**; and included **BG Kevin Kennedy, USAF**; **Colonel Chris Mills, USA**, PM, Precision Fires Rockets & Missile Systems PO; **Captain Jaime Engdahl, USN**, PM, Precision Strike Weapons PO, PMA-201; **BG Karsten Heckl, USMC**, Assistant Deputy Commandant for Aviation; and **Captain Matthew**

Stevens, USN, Commander, Naval Special Warfare Group Four.

BG Kennedy briefed on two USAF cyberspace rapid acquisition initiatives.

The Plugfest cyber project involves open systems architecture testing. The Cyber Proving Ground is designed to identify, enable and accelerate implementation of innovative concepts and technologies to improve USAF cyberspace operational capabilities.

Colonel Mills sees the need for improvements in the rapid fielding process. He has identified inefficiencies in weapons procurement that results in extended lead times. He said it takes almost two years to get a contract awarded. “It’s killing us in getting equipment out to our warfighters,” said Mills.

Another factor is delays in acquiring sub-components such as rocket motors, which can take up to 18-24 months, and he said stringent testing requirements also slows down the fielding process.

Captain Engdahl provided several examples of rapid fielding successes. He said the Laser JDAM resulted from an urgent operational need for a weapon that could hit moving targets in Afghanistan. The initial 800 weapons were delivered by Boeing under a sole source contract in just two years. Later buys were conducted with an open competition. Engdahl called the Laser JDAM “the premier direct attack weapon for the USN and USAF.”



Brigadier General
Kevin Kennedy, USAF



Lieutenant General
Anthony Ierardi, USA

The X-47B Unmanned Combat Air System Demonstration (UCAS-D) was also conducted in record time at the direction of Navy brass. Meanwhile, development of the Increment 1 LRASM, an adaptation of the Joint Air-to-Surface Standoff Missile, is moving ahead quickly, he added.

BG Heckl discussed how the USMC is expediting the fielding of various weapons, including the Joint Air to Ground Missile (JAGM), the Fixed Wing Advanced Precision Kill Weapon System II (APKWS II), and Harvest Hawk.

The fire-and-forget JAGM will eventually replace the Hellfire Missile. The APKWS-II small precision strike system is a laser-guided missile that is compatible with existing Hydra 70 unguided rocket launchers. Originally developed for helicopter gunships, the USMC was able to accelerate fielding due to lessons learned during rotary-wing APKWS II qualification. He said non-traditional ordnance delivery is being provided by the Harvest Hawk Mission Kit, which involves Hellfire and Griffin missiles on modified KC-130J Super Hercules turbo-prop aircraft. The USMC was able to field it in Afghanistan in less than 18 months and it remains a high demand aircraft.

Heckl said rapid fielding requires acceptance of risk, determination of what is most advantageous to the USMC and a shared vision by USMC Headquarters, the various program offices and industry.

Captain Stevens said “in populated environments, the overwhelming lethality of most weapons systems deter their use. We need to get better capabilities, especially at beyond-line-of-sight ranges. This will take the 3rd Offset to new paradigms of maritime precision engagement with much improved consequences for risk management considerations.”



Dr. Peter Huessy



Greg Barlow

He said “operations against sensitive targets require low to near-zero collateral damage effects. This is our vision for maritime precision engagement.”

Dr. Peter Huessy in his luncheon address offered his views on the global intentions of Russia and China. The president of Geostrategic Analysis and a frequent speaker before the PSA said Russian President Vladimir Putin has leveraged Russia’s military capabilities to simply keep Syrian President Bashar Assad in power. “He never intended to attack ISIS, only the opponents of Assad’s regime,” said Huessy, adding “it is ironic that Putin is now seen as the protector of the Middle East.”

China, on the other hand, “is building to attain military superiority over all other Asian nations as the first step towards global strategic pre-eminence,” added Huessy.

“The only thing able to stop Russia and China’s potential for using its nuclear forces, the only thing that can stop it short of nuclear deterrence, is prompt long-range and short range precision strike in sufficient numbers to quickly take out their capabilities. It is crystal clear this is the fire break to avoid America having to use its nuclear weapons,” stated Huessy.

Precision weapons testing challenges was the topic for Greg Barlow, Senior Military Evaluator for Air Warfare Systems, Director for Operational Test and Evaluation (DOT&E).

As regards rapid fielding, he said his organization has developed “test increments that are quickly getting things out to the warfighter without the need for a full blown IOT&E process.”

Barlow said challenges remain in operational testing, noting “in the past decade not one single weapons system has been fielded without deficiencies.” Current issues include test range constraints as DoD develops longer-range weapons and limited hardened and deeply buried target (HDBT) infrastructure in the face of new threats.

“Precision weapons testing is getting increasingly complex and challenging and that’s not going to change,” said Barlow.

Colonel Chris Mills returned to speak specifically about ongoing and new start Army rocket and missiles initiatives.

Mills said development of a Long Range Precision Fires (LRPF) capability involves a 24/7, all weather, 200-plus pound weapon able to attack beyond 300 km, including area targets and point targets, such as air defense batteries, missile launchers and staging areas. Plans call for initiation of LRPF technology maturation and risk reduction (TMRR) and prototyping later in 2016.

The warhead would include optimized compliant cluster munitions with multiple fuzing options. There would be two missiles per launch container on the M270A1 MLRS and M142 HIMARS launcher platforms. The Army is rapidly running out of ATACM unitary rounds. Increment 1 LRPF would sustain and advance the Army’s capabilities to 2050 and beyond at an affordable cost, he said.

Finally, Dr. Will Roper, Director, Strategic Capabilities Office (SCO),



Colonel Chris Mills, USA



Dr. Will Roper

OSD, addressed new innovative approaches to warfighting. Investments in new technologies include projects being developed by the SCO to re- imagine existing DoD, intelligence community and commercial systems by giving them new roles and game- changing capabilities. “The great thing about re- purposing is that it is instant force structure,” he said.

Roper said SCO efforts include projects involving advanced navigation, swarming autonomous vehicles for use in different ways and

domains, self-driving networked boats, and the Arsenal Plane that turns one of the Pentagon’s older aircraft into a flying launch pad for a range of conventional weapons.

He said the FY 2017 budget request funds an Arsenal Plane prototype. “The Arsenal Plane, a stand-off airborne platform, has a lot of appeal. It represents how the United States is starting to change its play- book, is being unpredictable,” Roper stated.

There’s also a project involving gun-based missile point defense that is utilizing some of the same hyper- velocity smart projectiles that was developed for the electro-magnetic gun. Roper said testing is underway and appears very promising.

“My job is to identify problems and look for existing weapons programs to quickly provide solutions... The onus is on the R&D community

to think through the details and see their efforts end up in the field and making a difference,” Roper stated. ■

PSA would like to thank the following corporations for sponsoring PSAR-16

Lockheed Martin Missiles & Fire Control

Ellwood Group, Inc.

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B-21 Long Range Strike Bomber Revealed

Air Force Secretary Deborah Lee James recently revealed the first rendering of the Long Range Strike Bomber, designated the B-21, at the Air Force Association’s Air Warfare Symposium in Orlando, Fla., and says the Air Force is taking suggestions to help decide the name of the bomber.

While there are no existing prototypes of the aircraft, the artist rendering is based on the initial design concept. The designation B-21 recognizes the LRS-B as the first bomber of the 21st century.

Air Force Chief of Staff Gen. Mark A. Welsh III said “the platforms and systems that made us great over the last 50 years will not make us great over the next 50.

There are many other systems we need to either upgrade or recapitalize to ensure viability against current and emerging threats... the only way to do that is to divest old capability to build the new.”

James said the B-21 will allow the Air Force to operate in tomorrow's high end threat environment, and

give the Air Force the flexibility and the capability to launch from the continental United States and deliver air strikes on any location in the world.

James said the B-21 shares some resemblance to the B-2. “The B-21 has been designed from the beginning based on a set of requirements that allows the use of existing and mature technology.”

The program recently entered into the Engineering and Manufacturing Development phase and the Air Force plans to field the initial capability of the aircraft in mid-2020s. ■



“Hondo” Geurts Awarded Perry Award

James “Hondo” Geurts, Acquisition Executive, U.S. Special Operations Command, McDill AFB, FL is the recipient of the 20th William J. Perry Award.

The award honors the immediate and long-term impact that Mr. Geurts has had on the U.S. precision strike combat advantage. It recognizes his indispensable contributions to U.S. Special Forces capabilities and the positive impact on programs supporting U.S. Special Operations Command (USSOCOM) warfighters.



James “Hondo” Geurts

“Mr. Geurts’ leadership has positively impacted SOFIC’s ability to deliver decisive battlefield capabilities around the globe. He has set the benchmark for Department of Defense acquisition policies, procedures, innovation and acquisition workforce development,” according to the Perry Award citation.

James F. Geurts, SES, was presented the award during a 15 March luncheon award ceremony, a highlight of the Precision Strike Association’s Precision Strike Annual Review (PSAR-16), which was held 15-16 March at the Waterford Conference Center, Springfield, VA.

The PSA’s Perry Award recognizes public or private sector leadership or achievement that results in significant contributions to the develop-

ment, introduction or support of precision strike systems. It is named after the former U.S. defense secretary and precision strike weapons advocate.

This year marks the 20th consecutive year that the Perry Award was presented to a deserving individual or team of experts who have led to the strengthening of U.S. national security interests.

PSA Chairman Ken Masson said “there were a number of great nominees this year for the Perry Award, but in the end the choice of “Hondo” Geurts was clear.”

Geurts, a member of the Senior Executive Service, is responsible for all special operations forces research, development, acquisition, procurement and logistics programs totaling more than \$5 billion in special operations forces unique activities annually.

He entered the Air Force in 1987, retiring with the rank of Colonel in 2009. Prior to his current assignment, he was the Deputy Director, Special Operations Research, Development and Acquisition Center, USSOCOM.

His oversight of numerous programs, including standoff precision guided munitions and fixed-wing gunships, is “a testament of his exemplary qualification for this

award consistent with its namesake Dr. William J. Perry...His outstanding achievements in support of precision strike weapons/munitions provide the SOF warfighter deep, substantive, and lasting overmatch in worldwide operations,” the citation states.

“USSOCOM under Mr. Geurts leadership, continues to enhance the capabilities of the MQ-9 and AC gunships to ensure unparalleled SOF support in increasingly challenging operational mission set...He is the embodiment of the precision strike credentials for the William J. Perry Award...The breath of Mr. Geurts’ contributions to USSOCOM and the precision strike community is staggering and is in keeping with the highest standards set forth by Dr. Bill Perry,” it added.

The 19th recipient of the Perry Award, Dr. Paul Kaminski, attended this year’s event. He said “Hondo has been instrumental in introducing precision guided munitions to the special operations community, using best procurement practices in getting industry and government working together to make this all work. It is a privilege for me to speak about his accomplishments.”

Unable to attend the ceremony, Dr. Perry provided thoughtful

remarks via video. He said “no one can doubt the importance of precision strike in modern warfare, but special operations forces have special needs for urban operations and in minimizing collateral damage, so the challenges that Mr. Geurts faced were several fold.”



Dave Rice, James Geurts, Dick Rumpf & Ken Masson



Ginny Sniegon, James Geurts & Ken Masson



William J Perry Video

Dr. Perry said Mr. Geurts adapted existing munitions, like Hellfire, for special missions, saving USSOCOM a considerable amount of money. “Beyond that, he had to field them quickly, when and where needed, and had to use streamlined acquisition approaches.”

Dr. Perry said “Geurts’ achievements provide lessons the whole U.S. Department of Defense should look at as regards how to achieve acquisition of vitally needed weapons in a more effective, streamlined and faster acquisition mode.”

Dr. Perry said it was “a great honor” to see “Hondo” Geurts receive this award. “I congratulate him and the Precision Strike Association in selecting him.”

Mr. Geurts said receiving the Perry Award “is truly special. I appreciate the recognition, but the Perry Award is not about an individual, it’s about a team effort working on very hard problems.”

He sees the need for more problem-solving in the future. “The last ten years were hard, and the next decade will be harder, but we will figure our way through. The challenge is to adapt, get out

of one’s personal comfort zone, whether in industry, academia or government, and do what needs to be done.”

Mr. Geurts is unsure whether the old acquisition models “will get us there. So we will have to take some risks, be willing to try something different to lay the foundation for those coming behind us, to take us to the next level.”

He did say one thing is clear: “The use of precision weapons is a given, the way we fight now, the way we conduct business.”

Named after the former U.S. defense chief and precision strike weapons advocate, the other winners of the prestigious Perry Award include: Dr. Perry, the first recipient (1997); former Vice President Dan Quayle (1998); RADM Walter M. Locke, USN (Ret.) (1999); The Johns Hopkins University, Applied Physics Laboratory (2000); NAVSTAR Global Positioning System

Joint Program Office (2001); Rep. James V. Hansen (R-UT) (2002); Terry Little, a well-respected acquisition reform pioneer (2003); USAF/USN/Boeing JDAM Program Team (2004); U.S. Warriors of Operation Enduring Freedom and Operation Iraqi Freedom (2005); The Tactical Tomahawk Team (2006); The Small Diameter Bomb Team (2007); Guided Multiple Launch Rocket & High Mobility Artillery Rocket System Team (2008); U.S. Special Operations Command Stand-Off Precision Guided Munitions (SOPGM) Quick Reaction Team (2009); Sniper Advanced Targeting Pod (2010); Project Dragon Spear Joint Acquisition Task Force (2011); Massive Ordnance Penetrator (MOP) Team (2012), JAMS/Lockheed Martin Hellfire II Team (2013); BLU-129/B Team (2014); and Dr. Paul Kaminski (2015). ■



Paul Kaminski



James Geurts & Kelly Geurts



Paul Kaminski, James Geurts & Ken Masson

News Briefs

F-35s Drop GBU-12s

Airmen from the 388th and 419th fighter wings dropped laser-guided bombs at the Utah Test and Training Range the week of Feb. 25, marking the first time an F-35 Lightning II combat unit deployed weapons from the F-35A.

Lt. Col. George Watkins, the 34th Fighter Squadron commander, said dropping weapons from the F-35 allows pilots to more fully engage the aircraft and confirm that everything works as planned. "This is significant because we're building the confidence of our pilots by actually dropping something off the airplane instead of simulating weapon employment," Watkins said.

USAF Lt. Col. Darrin Dronoff, the director of Hill AFB's F-35 Program Integration Office, said that while this achievement is a significant step toward Air Force IOC, the milestone goes beyond that mark. "The pilots and weapons loaders in



USAF Lt. Col. George Watkins, the 34th Fighter Squadron commander, drops a GBU-12 laser-guided bomb from an F-35A Lightning II at the Utah Test and Training Range

the 388th and 419th fighter wings are perfecting their skills not only to prove aircraft capabilities, but they'll also be the airmen called upon to take the F-35 to combat, whenever that call may come," he said. ■

USAF Orders More JASSM-ER Missiles

Lockheed Martin is to continue production of extended range Joint Air-to-Surface Standoff Missiles for the U.S. Air Force. The award for more JASSM-ER missiles is worth \$116 million and is the exercise of an earlier contract option for 100 missiles.

JASSM and its extended range variant are all-weather cruise missiles with an infrared seeker and enhanced digital anti-jam GPS receiver to dial into specific points on targets. The range of JASSM is more than 230 miles. The extended range JASSM lengthens that to more than 620 miles.

The contract option brings the total number of JASSM and JASSM-ER missiles delivered or under contract to more than 2,700, Lockheed Martin said. Work under the contract option is expected to be completed by mid-2019. ■

Evolution of GPS

In a desert, it's easy to get lost. There are no roads, no signposts, nor

vegetation to give locational clues. That was the grim situation facing U.S. and coalition forces during the 1990-1991 crisis in the Persian Gulf, known as Operation Desert Shield/Desert Storm.

Sometimes called "the first space war" by historians due to the extensive use of space-based satellites and other technological assets to command and control military forces on a battlefield, Desert Storm marked a major test of the Global Positioning System (GPS) in an actual combat environment.

Despite some shortcomings at the time, the use of GPS during its infancy revolutionized combat operations on the ground and in the air during the first Gulf War.

The capabilities of GPS systems are today used worldwide by billions of people in their consumer, professional and military devices. Whether paying at the gas pump, withdrawing money from an ATM, precision farming, international banking or international shipping, GPS enables our modern way of life.

It is also a critical component for delivering precise combat power in support of joint and coalition warfighter objectives, as proven on the desert battlefields of Southwest Asia a quarter of a century ago. ■

Naval Strike Missile Production in US

Raytheon and Norway's Kongsberg Defence Systems are finalizing plans to assemble, integrate and test the Naval Strike Missile and its launcher in the United States.

Raytheon expects to perform final assembly, integration and test of NSM at the company's Tucson, Arizona facility. Launchers would be manufactured at Raytheon's factory in Louisville, Kentucky.

CALENDAR OF EVENTS

Precision Strike Technology Symposium (PSTS-16)

Date: Oct. 25-27, 2016

Theme: Precision Strike Priorities to Meet New Great-Power Competition

Location: Johns Hopkins University/Applied Physics Laboratory – Laurel, MD

This symposium will be conducted at the SECRET//NOFORN Classification Level all three days

Sponsorships and exhibit opportunities available for most events—for more information email info@precisionstrike.org or visit our website: www.precisionstrike.org

With a range of more than 100 nautical miles, NSM is a long-range, anti-ship missile that provides superior strike capability against land and sea targets. Raytheon and Kongsberg believe NSM is an ideal solution for navies around the globe and the best over-the-horizon missile for the U.S. Navy's Littoral Combat Ship.

The companies are also teamed on the development of the Joint Strike Missile and National Advanced Surface-to-Air Missile Systems also known as NASAMS. ■

\$34M to Demo Advanced Aerial Decoy Jammer

The U.S. Air Force awarded Raytheon \$34.8 million to demonstrate upgraded electronic warfare capabilities for the Miniature Air



Naval Strike Missile

Launched Decoy-Jammer missile.

Development of the new version of the MALD-J, called MALD-X, should be completed in 24 months and culminate in two flight demonstrations.

MALD is a flying vehicle that confuses adversaries by posing as friendly aircraft. MALD-X, a modular weapon designed for the Strategic Capabilities Office, will demonstrate an improved electronic warfare payload, low-altitude flight and a datalink that will allow the weapon to communicate with other net enabled systems.

MALD-X is a uniquely collaborative effort, contracted and managed by the MALD Program Office at Eglin AFB in Florida, with program oversight from the SCO and shared technical management by both the Air Force and Navy. ■

New JSOW C-1 Ready for USN

Raytheon and the U.S. Navy have completed all operational tests for the Joint Standoff Weapon C-1, making this newest variant of the guided glide weapon ready for US Navy fleet release and declaration of Initial Operational Capability.

JSOW C-1 includes a Link-16 datalink and maritime moving target capability to provide fleet forces with robust, flexible capability against high-value, stationary land targets.

This now includes moving maritime targets at launch ranges of up to 70 nautical miles from both fourth-generation fighters and the fifth-generation Joint Strike Fighter.

Throughout developmental, integrated and operational test phases, the weapon demonstrated a high level of precision and effectiveness against moving maritime targets, a crucial capability addressing current

Call for Nominations

The Precision Strike Association's Richard H. Johnson Technical Achievement Award is named after the first recipient, and presented annually to recognize an individual from public or private sector for outstanding personal technical achievements resulting in significant contribution to precision strike systems.

Past Johnson Award recipients include: 2009 posthumously to Richard H. Johnson; 2010 Robert J. Whalen; 2011 posthumously to Robert H. Widmer; 2012 David Keith Sanders; 2013 Dr. Gary F. Polansky; 2014 Chris E. Geswender; and, 2015 Dr. Wade Dyer and Paul Manz.

Dick Johnson personally led the design or redesign of more precision strike airframes than any contemporary. In a number of conflicts over the past two decades, the majority of weapon airframes employed were Johnson's designs. His designs, or imitations of them, appear in nearly every nation's military where precision strike systems are employed.

The trophy is awarded during a luncheon at the annual Precision Strike Technology Symposium (PSTS) to be held October 25-27, 2016 at the Johns Hopkins University Applied Physics Laboratory in Laurel, MD.

Nominations for the Johnson Trophy are open to any U.S. or allied individual. In submitting a nomination, you will be directed to another site "Survey Monkey": <https://www.surveymonkey.com/r/3WSTYY2> to complete the nomination process. Please fill in all of the necessary fields.

For more information about the Richard H. Johnson Technical Achievement Award, please visit our website: www.precisionstrike.org. **Nomination deadline for submissions: Wednesday, September 7, 2016**

and future surface warfare threats. In recent testing, JSOW C-1 successfully engaged simulated combatant ships in a realistic scenario, demonstrating its potency against maritime moving targets.

The addition of the Link 16 datalink to JSOW C-1 allows the launch platform, or alternate controller, to provide real-time target updates to the weapon. In addition to enabling the weapon to hit a moving target, the upgrade allows controllers to reassign it to a different target while in flight.

JSOW C-1 is the U.S. Navy's first air-launched, net-enabled weapon, with internal integration on the F-35 already underway. ■

PSTS-16, Cont. from page 1

Chief of Staff for Strategic Deterrence and Nuclear Integration (A-10); Maj Gen Michael Fortney, USAF—Vice Commander, Air Force Global Strike Command; and, a host of 40+ additional dynamic visionaries, intelligence and engineering experts, technologists, and tactical operators who will bring you up to speed on challenges for the precision strike community to pursue.

Please review page 15 of this issue to capture critical agenda topics that will be addressed during the very stimulating symposium.

Highlights of featured leadership speakers are captured below:

- **General Selva**, who serves as a member of the Joint Chiefs of Staff and is the nation's second highest-ranking military officer, is scheduled to keynote PSTS-16 on the second day, addressing National Strategy Challenges and Precision Strike Priorities. He has commanded at the squadron, group, wing and head-quarter levels. Prior to his current

assignment, General Selva was the commander of U.S. Transportation Command. He is a command pilot with more than 3,100 hours in the C-5, C-17A, C141B, C-37, KC-10, KC-135A and T-37.

- **Admiral Swift**, a long-time friend of the precision strike community, will join us again to keynote opening day. Admiral Swift will focus on Precision Engagement in the Asia-Pacific AOR and is likely to talk about kill chain challenges in the anti-access/area-denial (A2/AD) environment. Swift has been recognized as the Commander, Naval Air Forces, U.S. Pacific Fleet Landing Signal Officer of the Year. He was also presented the Commander Michael G. Hoff Award as the U.S. Pacific Fleet Attack Aviator of the Year.

- **John Allen** is a retired USMC four-star general and former commander of International Security Assistance Force in Afghanistan. Prior to joining Brookings, Allen served as special presidential envoy to the global coalition to counter ISIL. Immediately following retirement, Allen led the security dialogue with Israel and the Palestinian Authority within the Middle East peace process as the senior advisor to SECDEF on Middle East Security. Allen will address Global Megatrends and Challenges to Precision Strike.

- **Lieutenant General Weinstein** is responsible to the Secretary and Chief of Staff of the Air Force for focus on Nuclear Deterrence Operations. Weinstein is scheduled to keynote the third day of PSTS-16 to address Strategic Challenges to Meet Great-Power Competition. He provides direction, guidance, integration, and advocacy regarding the nuclear deterrence mission of the USAF and engages with joint and interagency partners for nuclear enterprise solutions.

- **Major General Fortney** focuses on organizing, training, equipping and maintaining all U.S. intercontinental ballistic missile and bomber forces to provide strategic deterrence, global strike and combat support to meet the command's mission. The command's nine wings control the nation's entire inventory of Minuteman III intercontinental ballistic missiles—B-1, B-2 and B-52 bomber aircraft. Maj Gen Fortney will discuss Long-Range Strike in the 21st Century.

Numerous riveting technologies and challenges that are the focus of today's national security concerns on Capitol Hill, at the Pentagon, in the Middle East and elsewhere will be topics of discussion at PSTS-16 that definitely should include your engagement if you represent the U.S. Government (Civilian and Active Duty), Industry, Small Business or Academia.

You are guaranteed to gain valuable insights that will prove very beneficial as we move forward. The precision strike community values your participation and looks forward to having you and your cleared colleagues join us to share in this crucial and timely symposium.

The precision strike community is again honored to be host to numerous Midshipmen from the U.S. Naval Academy's Weapons & Systems Engineering Department and other departments for a great educational experience.

And, remember that the Eighth Richard H. Johnson Technical Achievement Award will be presented to a worthy precision strike recipient during PSTS-16. ■



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PRECISION STRIKE TECHNOLOGY SYMPOSIUM (PSTS-16)

Precision Strike Priorities to Meet New Great-Power Competition

25-27 October 2016

*The Johns Hopkins University Applied Physics Lab
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Focus Areas

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Strategic Challenges/Emerging Capabilities/Evolution of Nuclear Enterprise

Showcasing

- Intelligence Assessment—Middle East & North Africa Challenges
- Targeting Support for Future Warfare Engagement
- Third Offset Framing & Technology Investment
- Navy's Next Generation Strike Capability & LRASM
- Overview of Hot Spots & Trends Around the African Continent
- Air Force Precision Weapons
- Precision Engagement in the Asia-Pacific AOR
- Development of Breakthrough Technologies for National Security
- Army Precision Weapons—Long-Range Precision Fires
- Naval Strategic S&T Investments & Importance of R&D
- Joint Concepts & Precision Engagement Initiatives
- Unique Challenges—Innovative Solutions—Maximum Impact
- U.S. Global Presence—Precision Strike Priorities
- Global Megatrends and Challenges to Precision Strike
- Insights into the Kill Chain & Lessons Learned from Iraq & Syria
- Special Tactics to Achieve Precision Strike Effects
- Technologies Needed for Future Strike Warfare Engagement
- Technologies Ahead—National Labs
- Strategic Challenges to Meet Great-Power Competition
- Autonomy-Enabled Systems to Support Counter-WMD Mission
- Russia's New Strategic Doctrine & Capabilities
- Standoff Munitions Applications Center (SMAC) Update
- Industry's Views on Closing the Great-Power Capability Gap
- Long-Range Strike in the 21st Century
- Strategic Challenges of Cyber Operations

Special Award Ceremony

8th Richard H. Johnson Technical Achievement Award

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If your company name is missing, please email: PSAchair@precisionstrike.org

The Precision Strike Digest is an important vehicle for the Precision Strike Association to share information and to engage in discussion. You have an opportunity to share your passion about a particular Precision Strike topic. The Precision Digest is published three times a year. Please contact PSA Chair for Communication John Sordyl (jsordyl@williams-int.com), if you would like to have an article included in The Precision Strike Digest.

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Annual membership dues are based on your organization's defense-related revenue. This includes both prime and subcontracts for products and services. Please select your dues category below.

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\$15 per annum of dues is for a one-year subscription to National Defense magazine for the paid memberships. The government membership includes a free subscription to National Defense magazine.

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Tax deductibility, membership activation Members are entitled to deduct all of their dues, either as a business expense or as a charitable contribution if the dues are not business related. Members are encouraged to rely on the advice of their tax advisers. PSA is an integral part of NDIA, which is a 501(c)3 association, federal ID 53-0196547. No amount of dues goes toward lobbying. Membership status is conferred only upon receipt of payment.

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Join online now or print an application. For benefits or any questions, please contact Zoila Martinez 703-247-2565 or zmartinez@ndia.org.



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