



Lockheed Martin Management Association Retirees Newsletter

Looking Forward Towards A Wonderful Retiree Future!

DECEMBER 2015

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Needed: Staff Help

LMMAR needs volunteers to help keep LMMAR going. We have several vacancies on the Board and we particularly need a secretary and a newsletter editor. If you think you can help please contact:

Norm Dhom, Membership Chair – (408) 732-2742

Jerry Vaughan, Treasurer – (408) 985-2708

Your Story We need your input. Have you done anything exciting lately? Do you have any news that might be of interest



to our members? Your story and photo is welcome! Email it to:
jerry.allan.vaughan@gmailcom

Sunshine If a member knows of anyone ill or grieving, please send an email to Karen Stayrook at: karenstayrook@comcast.net or call (408) 622-5539

Trident II D5 Missile Test Flight

SUNNYVALE, Calif., Nov. 10, 2015 -

The U.S. Navy conducted successful test flights Nov. 7 and 9 of two Trident II D5 Fleet Ballistic Missiles built by Lockheed Martin (NYSE: LMT). The world's most reliable large ballistic missile, the D5 missile has achieved a total of 157 successful test flights since design completion in 1989. The D5 is the sixth in a series of missile generations deployed since the sea-based deterrent program began 60 years ago.

The Navy launched the unarmed missiles in the Pacific Ocean from a submerged Ohio-class submarine. The missiles were converted into test configurations using kits produced by Lockheed Martin that contain range safety devices and flight telemetry

instrumentation. The test flights were part of a demonstration and shake-down operation, which the Navy uses to certify a submarine for deployment following an overhaul.



"This reliability record is a testament to the unwavering dedication to the deterrence mission by the Navy pro-

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gram office, the submarine crews and the industry team," said Mat Joyce, vice president of Fleet Ballistic Missile programs and deputy for Strategic and Missile Defense Systems, Lockheed Martin Space Systems. "Building on a six-decade history of success, we're moving into the future by implementing new engineering methods that will pave the way for continued innovation and performance."

To support the U.S. Navy Strategic Systems Programs, Lockheed Martin is incorporating modernized electronics technology to cost effectively prolong the service life of the D5 missile design on current and next-generation submarine platforms. These two missile flights formally qualify the new flight control and interlocks electronics packages for deployment in 2017. The modernized avionics subsystems, which control key missile functions during flight, enable missile life extension through 2042.

The company also is transitioning to designing components in a digital environment and using 3-D printing to efficiently produce prototypes.

"This is an example of how Lockheed Martin continually moves forward in advancing our ballistic missile systems to ensure that we are employing the latest technologies to meet our customers' mission and budget requirements," said Joyce.

The Trident II D5 missile is deployed aboard U.S. Navy Ohio-class and U.K. Royal Navy Vanguard-class submarines to deter nuclear aggression. The

three-stage ballistic missile can travel a nominal range of 4,000 nautical miles and carry multiple independently targeted reentry bodies.

Lockheed Martin has been the Navy's strategic missile prime contractor since Dec. 27, 1955 - one of the longest government and industry partnerships for a major U.S. weapon system. The company also performs program management and engineering services for the Royal Navy under the Polaris Sales Agreement.

Hybrid Airship

Palmdale, Calif., Nov. 17, 2015 – The Federal Aviation Administration (Seattle Aircraft Certification Office) recently approved Lockheed Martin's (NYSE: LMT) project specific certification plan for the Hybrid Airship.



Given that Hybrid Airships did not fit within existing FAA regulations, the team worked to create a new set of criteria allowing non rigid hybrid airships to safely operate in a commercial capacity. Transport Canada was also involved in the development of this criteria to ensure it included safety concerns unique to Canada.

Lockheed Martin and the FAA have been working together for more than a decade to define the criteria to certify Hybrid Airships for the Transport Category. This criteria was approved by the

FAA in April 2013. Following that approval, the team has been developing the project specific certification plan over the past two years, which details how it will accomplish everything outlined in the Hybrid Certification Criteria.

"The approval of the certification plan represents an important risk reduction milestone for our customers," said program manager. Dr. Robert Boyd. "Completing this step took dedication from both the Lockheed Martin system experts and the FAA, who worked meticulously through thousands of detailed items to achieve consistent and accurate verification statements covering the entire aircraft."

Hybrid Airships can affordably transport heavy cargo to and from remote locations thanks to their unique shape and air cushion landing system. They require little to no fixed ground infrastructure and burn significantly less fuel compared to conventional aircraft making them an environmentally friendly solution to remote cargo delivery.

Earlier this year Lockheed Martin along with Hybrid Enterprises LLC kicked off sales for the 20 ton variety of the Hybrid Airship. They are on track to deliver operational airships as early as 2018.

USS Milwaukee (LCS 5)

The littoral combat ship (LCS) is a class of relatively small surface vessels intended for operations in the littoral zone (close to shore) by the United States Navy. It was "envisioned to

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be a networked, agile, stealthy surface combatant capable of defeating anti-access and asymmetric threats in the littorals."

The Freedom class and the Independence class are the first two LCS variants. Both are slightly smaller than the U.S. Navy's guided missile frigates and have been likened to corvettes. They have the capabilities of a small assault transport, including a flight deck and hangar for housing two SH-60 or MH-60 Seahawk helicopters, a stern ramp for operating small boats, and the cargo volume and payload to deliver a small assault force with fighting vehicles to a roll-on/roll-off port facility. Standard armaments include Mk 110 57 mm guns and RIM-116 Rolling Airframe Missiles. They are also equipped with autonomous air, surface, and underwater vehicles. Possessing lower air defense and surface warfare capabilities than destroyers, the LCS concept emphasizes speed, flexible mission modules and a shallow draft.

MILWAUKEE, Wis., Nov. 21, 2015 – The U.S. Navy commissioned the nation's fifth Littoral Combat Ship (LCS) – USS Milwaukee (LCS 5) – in Milwaukee today, officially placing the ship designed and constructed by a Lockheed Martin (NYSE: LMT)-led industry team into active service.

Milwaukee, the third Freedom-variant in the LCS class, successfully passed Acceptance Trials in September and was delivered to the U.S. Navy on October 16.

"The USS Milwaukee is a warship with

capabilities unlike any others," said Stephanie C. Hill, vice president of Ship & Aviation Systems for Lockheed Martin Mission Systems and Training business. "The entire Lockheed Martin-led LCS industry team is proud to deliver USS Milwaukee to the crew who will bring this great ship to life to participate in the defense of our great nation."



The fifth U.S. Navy vessel bearing the name, Milwaukee will transit to its homeport in San Diego, California, where it will be integrated into the fleet and the industry-Navy team will conduct additional program testing and crew training.

The Lockheed Martin-led industry team, which includes shipbuilder Fincantieri Marinette Marine and naval architect Gibbs & Cox, has already delivered two Freedom-variant littoral combat ships to the U.S. Navy. USS Freedom conducted a successful deployment to Southeast Asia in 2013 and is currently operating out of her homeport in San Diego. USS Fort Worth is currently deployed in Southeast Asia, serving in the U.S. 7th Fleet.

Detroit (LCS 7) is scheduled to be delivered in early 2016. Sioux City (LCS 11), Wichita (LCS 13), Billings (LCS 15), and Indianapolis (LCS 17) are in construction. St. Louis (LCS 19) and

Minneapolis/St. Paul (LCS 21) are in long-lead material procurement.

The commissioning is the final act that marks entrance of a ship into the naval forces of her nation. It is the final of three events that bring a ship to life: keel laying, launching and christening, and commissioning.

Chroma Airport Suite

London, Nov. 19, 2015 – Swedish Airport Operator Swedavia has selected Lockheed Martin (NYSE:LMT) to deliver a new generation of multi-airport operational systems that will transform the way critical information is shared with stakeholders across their network.



Stockholm Arlanda Airport

Swedavia is responsible for 10 state-owned airports in Sweden. A world leader in developing airports with the least environmental impact, Swedavia's role is to create the access Sweden needs to facilitate travel, business and meetings nationally and internationally.

With passenger figures and flight movements forecast to grow by 50 percent in 2035, Swedavia identified Lockheed Martin's Chroma Airport Suite as the technology platform that will enable strategic initiatives to manage this growth and deliver operational

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excellence for years to come.

In a multi-million dollar deal initially spanning five years, Lockheed Martin will install their Chroma Suite which includes a centralised Multi-airport Operational Database, Resource Management System and Flight Information Displays.

“This project will improve data quality, operational predictability and allow us to optimize resources and capacity across our entire network,” said Lena Rökaas, Head of Operations at Stockholm Arlanda Airport. “In other words, the systems will provide important support for us in the work to achieve our ambitious targets for operative excellence.”

Chroma is a consolidated suite of modules that have been specifically engineered for the multi-airport environment and has been successfully proven within airport networks globally.

“We have been at the forefront of aviation technology for over 100 years,” said Mark Cooper, managing director of Transportation and Energy at Lockheed Martin. “Having worked already with Norway’s Airport Operator Avinor and the Finnish operator Finavia, our partnership with Swedavia is another innovative example of our work to improve information sharing and collaboration in multi-airport environments.”

LMMAR Bridge

Nov 3 - Individual Duplicate – 1st Place – Dave Himmelblau, 2nd Place – Doug Gordon, 3rd Place – Chuck

Schmidt, and 4th Place – Dave Topka.

Nov 5 – Pairs Duplicate -1st Place – (tie) Roger Abegg & Doug Gordon, Dave Himmelblau & Dave Topka, and Gary Bea & Chuck Schmidt.

Nov 10 – Individual Duplicate – 1st Place – (tie) Gary Bea , Ted Hinshaw, and Dave Himmelblau, and 4th Place - Alex Fucile

Nov 12 – Pairs Duplicate - 1st Place – Gary Bea & Chuck Schmidt and 2nd Place -. Dave Himmelblau & Dave Topka.

Nov 17 – Individual Duplicate – 1st Place – Alex Fucile, 2nd Place – Ted Hinshaw, 3rd Place – Roger Abegg, and 4th Place - Gary Bea.

Nov 19 – Pairs Duplicate - 1st Place – Dave Himmelblau & Dave Topka and 2nd Place Gary Bea & Chuck Schmidt.

Nov 24 – Pairs Duplicate - 1st Place – Gary Bea & Chuck Schmidt. and 2nd Place - Alex Fucile & Wilma Tringaly.

Nov 26 – No Game – Thanksgiving

Long Range Strike Bomber (LRS-B)

WASHINGTON – Northrop Grumman has won the contract to build the US Air Force’s next-generation Long Range Strike Bomber (LRS-B), an industry-shaping award that breathes new life into the world's sixth-largest defense company.

After US financial markets closed Tuesday evening, Defense Secretary Ash Carter and Air Force leadership announced that Northrop beat out the team of Boeing and Lockheed Martin for the contract, which is expected to top \$55 billion over the life of the

program. It's the largest military aircraft contract since Lockheed Martin won the Joint Strike Fighter (JSF) more than a decade ago.

Northrop now has the Pentagon's blessing to build a new fleet of aircraft to replace the Air Force's aging B-52s and B-1s. As builder of the B-2 stealth bomber, Northrop beat out a joint Lockheed Martin-Boeing team in a closely watched competition that has lasted months longer than anticipated.

Speaking at the announcement, Air Force Secretary Deborah Lee James said the bomber would "allow the Air Force to operate in tomorrow's high-end threat environment" and praised the work that went into the selection, in a move that sounded like a preemptive shot to any attempt by Boeing and Lockheed to challenge the award decision.

James said service acquisition officials “carefully considered” the offers from both teams, with the entire process carried out “with a high level of transparency with our industrial partners... we believe our decision represents the best value for our nation.”

The contract is broken up into two parts — the cost-plus incentive fee development contract awarded today, and a separate agreement on the first five low-rate initial production lots that will be fixed-price incentive fee. Those first five lots will cover the production of 21 bombers.

The service requested that two independent government cost estimators look at the program. The two

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groups projected that each bomber will cost \$511 million in 2010 dollars on average if 100 planes are built, Air Force officials told reporters on Tuesday — substantially less than the original \$550 million target cost set by then Secretary of Defense Robert Gates. This translates to \$564 million per plane in fiscal year 2016 dollars.

LRS-B's projected unit cost is higher compared to the B-1, but significantly lower relative to the \$1.5 billion price tag of Northrop's B-2, according to an Air Force handout. The expected development cost overall for LRS-B is also lower than for the B-2, at \$23.5 billion.

For the Pentagon, the hard part is about to begin. A bid protest seems inevitable given that LRS-B is the first major military aircraft acquisition program since the JSF award in 2001, and likely the last until the sixth-generation fighter next decade. A lengthy protest period could not only delay the program's start, but also set up a nasty public relations fight.

Space Debris Tracking

CANBERRA, Australia Dec. 1, 2015 – Lockheed Martin (NYSE: LMT) and Electro Optic Systems Pty Ltd (ASX: EOS) have broken ground on a new space object tracking facility in Australia that aims to provide commercial and government customers an unprecedented view of orbital space debris fields.

It is estimated that there are hundreds of thousands of debris objects in orbit, ranging from spent rocket parts to

pieces of defunct satellites. These objects pose a major threat to satellites in orbit that power everything from smartphones and weather prediction to national security and global financial markets. The new space object tracking site will give satellite operators a clearer picture of the debris that could damage their networks, and how they can avoid potential collisions.

"The expansion of space debris tracking by EOS and Lockheed Martin is expected to make a significant contribution to the preservation of the space environment, by providing data which will enable cost-effective debris manoeuvre for satellites," said Mark Valerio, Lockheed Martin vice president and general manager of Military Space. "The accuracy of our optical sensor network, combined with an ability to reschedule tracking operations according to commercial priorities, will provide a trusted source of critical space data to commercial and government operators."

The network developed by EOS and Lockheed Martin, called Optical Space Services (OSSTM), was formed in August 2014. Sensor systems like OSSTM serve as a complement to radar-based systems like the U.S. Air Force's Space Fence, which will sweep the sky tracking 200,000 objects.

"The strategic collaboration with Lockheed Martin has allowed a critical mass of sensors, data and services to be assembled, enabling OSSTM to deliver the suite of asset protection services requested by customers," said Dr. Ben Greene, EOS Chief Executive Officer. "This new tracking capacity will

provide unique data which is exclusively available to EOS and Lockheed Martin, enabling each organisation to offer both data and services to meet global market needs. Based on current contracts and active negotiations, EOS expects to commence the delivery of data and services by late 2016."



Sensors, lasers and optic systems will be fused together by software enabling OSSTM to hone-in on, characterise and track human-made objects orbiting the depths of space. That data will then be quickly and accurately delivered to customers allowing them to manoeuvre satellites and prevent collisions. The system can also predict the paths of debris, giving operators advance warning of potential collisions.



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Activity Calendar

- **LMMAR Executive Board Meeting.** First Monday of each month unless holiday conflict, then second Monday. 9:30 a.m. Bldg. 157-Satellite Room (off the cafeteria).
- **LMMAR Newsletter Mailing Session.** Volunteers needed. Second Thursday of each month. 9:30 a.m. Bldg. 157-Litrium. Contact Norm Dhom (408) 732-2742.
- **LMMAR Bridge Card Players.** Join the fun! Every Tuesday and Thursday, 11:30 a.m. at the Willow Park Condominiums located at the NE corner of Moffet Blvd. and Middlefield Road in Mountain View. Entrance is from Moffet Blvd. Contact Dave Himmelblau, 'phone No. 650 968-1121.
- **Lockheed Martin Blood Bank Drive.** Second Wednesday of each month. 8:00 a.m.- 3:00 p.m. Bldg. 163. LMMAR Contact Norm Dhom (408) 732-2742.
- **Lockheed Martin Retirees Investment Group (LMRIG).** Meets last Thursday of each month, 1:00-2:00 p.m. in B163 at the corner of J Street and 1st Ave. (Employee Connection Building). Dues are \$2. Contact Don Kinell (650) 948-1520 or Martin Abelow (408) 253-6924. Join us for lunch in the B-157 cafeteria prior to the meeting between 11:40-12:40.

For your financial needs, please contact Star One Credit Union at www.starone.org or (866) 543-5202 toll free.

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