



# THE GRAPEVINE



*There is a very fine line between "hobby" and "mental illness."*

Vol. XXXIV,



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## Meeting And Program

**NOTICE:** Our March meeting will take place at 7:30 P.M. on the 5th of February. The meeting will be at the FBO/Main Terminal Building on the grounds at KLVK.

### Calendar:

Month	Date	Speaker	Topic
January	8 <sup>th</sup>	Rich Perkins	Air Force pilot and flight school operator
February	5 <sup>th</sup>	Allen Silver	All about Parachutes
March	5 <sup>th</sup>	Larry Fish/Dave Dent	Mt Flying into his Montana strip/X31 crash at Edwards

**For Our March program:** In response to people asking about his private strip in Montana, Larry Fish will show a 7 minute video and discuss mountain flying. After that, Dave Dent will show a video and discuss the accident investigation into the crash of the x32 at Edwards on January 19, 1993.

**It is membership renewal time again! The annual dues are \$30.**

**You can pay by sending a check made out to EAA 663 and give it to me the chapter meeting or by mailing it to my address: Mark Palajac, 25 Jacaranda Dr. Fremont CA 94539.**

### **Mailbag: Top Gun in the 21<sup>st</sup> century.**

Really interesting progress by the military and the future of fighter plane drones.

The U.S. Navy launched an unmanned, autonomous aircraft the size of a fighter jet from a warship for the first time, a development that could herald the end of Top Gun-style piloted air combat missions.

The X-47B drone is the first designed to operate off an aircraft carrier, which allows it to be used around the world without needing permission to take off from airfields in other countries.

But there are concerns about the legality of what has been dubbed America's 'covert drone war'. Strikes cause widespread civilian deaths and operate with only limited oversight, critics say.



*Controllers: Northrop Grumman test pilots, Dave Lorenz, centre, and Bruce McFadden, left, prepare to launch the new X-47B off the nuclear aircraft carrier USS George H.W. Bush off the coast of Virginia this morning. They issue orders to the autonomous drone using their forearm-mounted Control Display Units seen in this picture.*

*Ready to go: Flight crews give the X-47B's controllers a signal to launch. The drone is the first to operate from an aircraft carrier, which allows it to be deployed around the world with no need for permission to use airfields in other countries - increasingly difficult given the condemnation of the U.S. governments use of drone strikes*



*Lift off: The drone takes off from the end of the George H.W. Bush's flight deck. The X-47B is able to operate totally using artificial intelligence in its on-board computers which merely need to be set objectives by the drone's human operators. Critics have warned the technology is a step towards the development of 'killer robots'.*

Aside from its ability to operate from aircraft carriers, another big difference between the X-47B and previous drones is that it does not need to be piloted by remote control.

Instead, it is controlled by a forearm-mounted box called the Control Display Unit which sends orders to an on-board computer which is able to use artificial intelligence to think for itself, plotting course corrections and charting new directions.

The unmanned drone will be set an objective by a human operator, for example a target to look at or bomb, and then it will navigate its way there using technology such as GPS, autopilot and collision avoidance sensors.

Critics have warned the introduction of such AI into military weapons systems is a step towards the development of autonomous 'killer robots'. Navy officials say the drone will give them around-the-clock intelligence, surveillance and targeting capabilities.



Success: The prototype X-47B took off successfully this morning and made two low approaches to the ship before heading back toward land.



*Prototype: The test aircraft isn't intended for operational use; instead, the military is using the information it gathers to develop the drone program*  
*The prototype X-47B took off successfully this morning from the nuclear-powered aircraft carrier USS George H. W. Bush in the Atlantic Ocean off Virginia and made two low approaches to the ship before heading back toward land.*

The test aircraft, which has been designed and built by the weapons maker Northrop Grumman, isn't intended for operational use; instead, the military is using the information it gathers during these demonstrations to develop the drone program.



The Navy already operates two other unmanned aircraft: the small, low cost ScanEagle, which does not carry weapons; and the Fire Scout, which is armed but built more like a helicopter.

*Awesome: Reporters wearing U.S. Navy-issued protective gear peer up as the X-47B makes a pass over the deck of the George H. W. Bush in the clear morning skies*



Advanced: The X-47B can reach an altitude of more than 40,000ft, has a range of more than 2,100 nautical miles and can reach high subsonic speeds, claims the navy.



Fully autonomous: Mr Lorenz, Northrop Grumman's deck operator, drives an X-47B using his arm-mounted controller. It is fully autonomous in flight, relying on computer programs to tell it where it to go unless a mission operator needs to step in. The Pentagon has promised that it needs human intervention in order to open fire.

Both the military and the CIA use armed Predator and Reaper drones in surveillance and strike operations around the world. But while the military uses them routinely alongside troops in Afghanistan and other warzones, the spy agency has conducted frequent strikes in countries in which the U.S. is not officially at war.

Over the past 11 years in Yemen, 333 people have been reported killed, including 47 civilians, among them two children, in confirmed U.S. drone strikes, according to figures collated by the Bureau of Investigative Journalism.

A suspected 96 further drone attacks in the Middle East country have killed as many as 445, including 50 civilians and ten children. In Somalia over the past six years, as many as 27 have been reported killed by drones, with up to 15 of those reported as being civilian bystanders.

And in the border regions of Pakistan, where the U.S. has carried out the most covert drone strikes, as many as 3,533 people, including 884 civilians (197 of whom were children), have been reported killed by CIA drone strikes over the past nine years - triggering sharp criticism from the government there.



Although the drone attacks were started under the Bush administration in 2004, they have been stepped up enormously under President Obama. Obama's top counter-terrorism adviser, John Brennan, has argued the U.S. has the right to unilaterally strike terrorists anywhere in the world. 'Because we are engaged in an armed conflict with al-Qaeda, the United States takes the legal position that, in accordance with international law, we have the authority to take action against al-Qaeda and its associated forces,' he told a conference at Harvard Law School last year.

'The United States does not view our authority to use military force against al-Qaeda as being restricted solely to "hot" battlefields like Afghanistan.'

Rise of the machines: Critics like the pressure group Human Rights Watch have warned the introduction of AI into military weapons systems is a step towards the development of autonomous 'killer robots'. Navy officials say the drone will give them around-the-clock intelligence, surveillance and targeting capabilities.



Human Rights Watch has called for a pre-emptive ban on the development and use of any unmanned systems that carry weapons and are able to select and engage targets with no human intervention. There are increasing fears that human scientists could one day lose control of computer-based artificial intelligence systems.

The X-47B can reach an altitude of more than 40,000ft, has a range of more than 2,100 nautical miles and can reach high subsonic speeds, according to the navy.

It is fully autonomous in flight, relying on computer programs to tell it where it to go unless a mission operator needs to step in. That differs from other drones used by the military, which are more often piloted from remote locations.

It is not yet clear whether the drone will be able to open fire without explicit authorization from its controller. The Pentagon last November vowed that no robot weapon would be able to decide when to attack humans.

That promise came as Human Rights Watch issued a warning that autonomous 'killer robots' could find their way onto battlefields within 20 years, or even sooner.



The group has called for a pre-emptive ban on the development and use of any unmanned systems that carry weapons and are able to select and engage targets with no human intervention. That possibility is particularly alarming in light of increasing fears that human scientists could one day lose control of computer-based artificial intelligence systems. Cambridge University has even opened a centre where leading academics will study the existential threat that out-of-control robots could

potentially pose to humanity.

Today's tests show the trend toward greater autonomy 'is not one that is going to be stopped,' said Steve Goose, director of the arms division at Human Rights Watch.

'For us, the question is where do you draw line? We're saying you need to draw the line when you have a fully autonomous system that is weaponised,' he said.

'We're saying you must have meaningful human control over key battlefield decisions of who lives and who dies. That should not be left up to the weapons system itself.'

*An X-47B drone taxis in front of an F/A18 fighter plane as it is prepared for take off: The aircraft is as yet not equipped with military hardware, but is designed for ample space to accommodate bombs and surveillance equipment. Eliminating the need for life-support equipment frees up the room for two 2,000lb bomb bays.*



*Space saver: The X-47B has a wingspan of more than 62 feet - wider than that of an F/A-18 Super Hornet - so they must be folded up to conserve space at sea*

Sailors move the X-47B into position on the George H. W. Bush's flight deck prior to its test flight today: Before the drones can become commonplace the military has to prove they can operate in the harsh conditions aboard a sea-borne aircraft carrier. The aircraft used a steam catapult to launch, just like a traditional Navy war plane.

The aircraft is as yet not equipped with military hardware, but is designed for ample space to accommodate bombs and surveillance equipment. Not having a pilot eliminated the need for much of the life support equipment and other essentials that humans need to survive at high altitudes, giving it the space for up to two 2,000lb bombs.

Before the drones can become commonplace, however, the military has to prove they can operate in the harsh conditions aboard an aircraft carrier at sea.

The aircraft used a steam catapult to launch, just like a traditional Navy warplane does.

While the tailless plane has not yet landed on the aircraft carrier, the Navy plans to conduct those tests soon.



Landing on a moving aircraft carrier is considered one of the most difficult challenges Navy pilots face.

*An X-47B is lifted on an aircraft elevator to the carrier's deck: While the tailless plane has not yet landed on the aircraft carrier, the Navy plans to conduct those tests soon. Landing on a moving aircraft carrier is considered one of the most difficult challenges Navy pilots face.*



Nearly there: Earlier this month, the Navy successfully conducted a landing at Naval Air Station Patuxent River in

Maryland where the X-47B used a tailhook on the aircraft to catch a cable and suddenly stop, just as planes landing on carriers have to do.

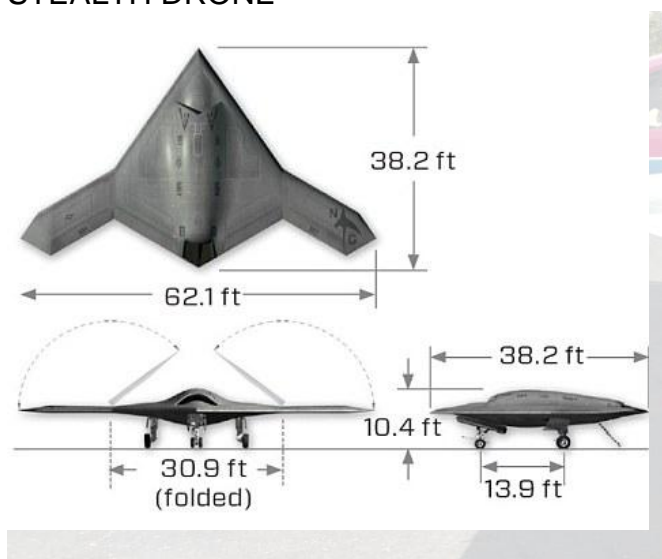
'These are exciting times for the Navy as we are truly doing something that has never been done before - something I never imagined could be done during my 29-year naval career,' said Rear Admiral Mat Winter, the Navy's program executive officer for unmanned aviation and strike weapons, in blog post published yesterday.

Following the test launch, the plane made a series of approaches toward the aircraft carrier before landing at Naval Air Station Patuxent River in Maryland.

Earlier this month, the Navy successfully conducted a landing at that air station where the X-47B used a tailhook on the aircraft to catch a cable and suddenly stop, just as planes landing on carriers have to do.

In the 2014 fiscal year, the Navy plans to demonstrate that the X-47B can be refueled in flight. The program cost is \$1.4 billion over eight years. A planned variant of the craft, the X-47C will have a larger payload provision of 10,000lbs and a wingspan of 172ft.

#### DEATH FROM ABOVE: THE TECHNICAL SPECIFICATIONS OF THE U.S. NAVY'S LATEST STEALTH DRONE



- Design: Tailless, cranked-kite
- Wingspan: 62ft
- Length: 32ft
- Max Altitude: >40,000ft
- Speed: High subsonic
- Max Unrefuelled Range: >2,100 nautical miles
- Max Unrefuelled Flight Time: >6 hours
- Take-off Weight: 44,000lbs
- Powerplant: Pratt & Whitney F100-PW-220U]
- Twin Weapons Bays: 4,500lbs payload

MINUTES: GENERAL MEETING, EAA CHAPTER 663, 2/5/2015, 7:31 PM, TERMINAL BUILDING KLVK.

Chapter president John Goldsmith called the meeting to order.

Two guests introduced themselves, Doug Web from Modesto and Dave Walters from the Placerville chapter who flies a Challenger II.

The minutes of the January meetings were accepted as they appeared in "The Grapevine".

John brought up the topic of the new contest proposed by newsletter editor Jeffrey Larson about chapter members visiting paved public use airports in California. A lively discussion followed. Ralph suggested the faster airplanes to only get credit for airports 160 miles away; Ralph's Kitfox cruises at 80 mph.

I suggested that one must set foot on the ground to get credit, maybe a picture. There is a timing thing; who gets to an airport first to claim credit. How is this to be scored, and presented on our website. Chris Uhlik volunteered to help Jeffrey develop the activity.

Treasurer Mark reported that 64 have paid dues for the year. The chapter has \$4,794.40 in funds plus the soon to be returned \$500 deposit from the Robert Livermore Community Center. His report was approved.

Young Eagles coordinator Trina Anderson is working on the schedule for this year's rallies. She encouraged individual YE flights, but the original EAA Young Eagle form must be filled out and signed by parent/guardian before takeoff.

Business: Tool man Bob Farnam has repaired the chapter's compression tester and it is ready for use.

Announcements: The board meeting this month will be 2/19 at John's place, the next general meeting 3/5. Livermore Airport now has a TAF! We've gone big time!

John mentioned that the #1 topic in the aviation press lately has been the coming ADS-B OUT requirement for Mode C required airspace.

John showed the contents of the "mail bag" on the screen. Among other things it was noted that the Golden West Flyin will be later in the year, Saturday October 17th at the Marysville Airport, now a one day event.

Members Forum: Dave Dent's maintenance tip: When timing a Lycoming engine, be sure it has the correct flywheel. Flywheels from the left turning models have different timing marks.

Ralph Cloud reported on the progress of the airport office moving into its new digs. He also said he was going the inventory the chapter library.

Dave Walters visiting from the Placerville EAA Chapter 512, promoted the fly out lunch to the Runway Restaurant (think Jonesy's) at the Napa Airport on Saturday the 21st. He also mentioned the Placerville Pancake Breakfast will start up again on the first Saturday of months May through September.

Break and then Program: Chuck Ray introduced Allen Silver, of Silver Parachutes Sales and Service, now located at Columbia Airport. Allen showed a video of his days as a wing walker on top of Eddie Andreini's Stearman. He followed up with an extended question and answer period covering wing walking, sky diving, the different types of parachutes, parachute safety, and exiting an aircraft in an emergency.

Thank you Allen Silver.

Meeting adjourned for pie.

MINUTES: BOARD OF DIRECTORS MEETING, EAA CHAPTER 663, 2/19/2015, 7:42 PM, JOHN'S PLACE.

John Goldsmith, Mark Palajac, Dave Anderson, Ralph Cloud, Bob Farnam, Dave Dent and Bruce Cruikshank were present.

Treasurer Mark reported the paid member count is 70 with \$4,974.40 in chapter funds; we're still waiting for the \$500 refund from the Robert Livermore Community Center. John was going to roll it over for a deposit for next year's dinner, which we tentatively set for 1/23/2016.

The chapter was in the red \$613 on the annual dinner. There was a discussion about why, and to what level the dinner should be supported by the chapter fund. Some that said they were coming, didn't! Catering: There was some grumbling about cold food. A search is on for a new caterer. It was decided to get quotes from various caterers for the following menu: Chicken, Beef brisket by ration of 1:2, two vegetables, and rolls. A search is also on for a speaker with a better draw.

Young Eagles: Dave said the rallies will start in May, dates, none yet.

Tools: Tool man Bob Farnam passed out lists of the frequency of use of the various chapter tools; Most use was seen by the electronic scales 26, followed by the bore scope 23, prop balancer 19, both heavy wire crimper and panel punch 17. The other tools ranged from 7 times to zero.

Dave Dent will be the speaker for the next general meeting. Topic: Broken Link in Flight Testing, the Crash of the X-31.

Ralph the barbecue man has set the dates for this year's barbecues: Sun. 5/17, Sun. 6/14, Sun. 7/12, Sat. 8/8, and Sat. 9/19.

Next general will be meeting 3/5 followed by the board 3/19.

Around the group: I offered the idea that for those that have one, the ASOS/AWOS frequency at uncontrolled airports should be used as the CTAF. Transmit the WX information once a minute and use the dead time for traffic control. The response was sort of "meh".

Meeting adjourned for pie.

Respectfully submitted, Bruce Cruikshank, Secretary.

### **Feedback/Questions/Suggestions**

**Any and all feedback is welcome. Please take a few minutes to send suggestions, tips, corrections or any other feedback to: [jeffrylite@comcast.net](mailto:jeffrylite@comcast.net).**

Cool videos found on the internet.

[Joy around the world.](#) Turn your sound on and sit back – Thanks to Bruce Cruikshank.

[Flutter, what is it?](#) – Thanks to Ralph Cloud

[A giant sucking sound, no it's not oil](#)

[Who doesn't love their mother in law, especially the Italians.](#)

[How many water balloons does it take to stop a 44 Magnum?](#) Write your answer 1st – Bruce Cruikshank



**CONTEST NEWS:**

I've emailed our speaker from the Chapter Dinner as well as the West Valley Flying Club. Hope to have some news on this soon.



Approaches are a better measure of a pilots ability than touchdowns.





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