

# Aviation Exploring Post 107

Personal and Aerospace  
Career Development

Somerset Air Service, Inc.  
**SMQ**



# FLIGHT LOG DECEMBER 2009

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P.O. Pox 1007, Bedminster, NJ 07921  
908 722 2444 / [info@somersetairport.com](mailto:info@somersetairport.com) /  
<http://www.somersetairport.com/>

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Aviation Exploring Post 107 has taken off and is on an exciting journey in aerospace. Our journey is documented in our AEP107 FLIGHT LOGS. Our experiences, activities, member information are recorded and published to our membership, alumni, recruits, partners and friends of AEP107, monthly.

Please send all **FLIGHT LOG** information / comments / updates to the Editor: [tfteel@optonline.net](mailto:tfteel@optonline.net).

## YOUTH PROTECTION NOTES:

- ➔ AEP107 Flight Logs do not publish the last names of Aviation Explorers ages 17 and under.
- ➔ AEP107 Flight Logs are distributed individually via Bcc:

## WHAT IS EXPLORING?

<http://www.youtube.com/watch?v=GXLGEMwnqSg>

## WHAT IS AVIATION EXPLORING?

<http://www.youtube.com/watch?v=xZHUI-ZhI8w>

## UP AND COMING EVENTS

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### AEP107 PROGRAM (under development)

- ➔ AgustaWestland Helicopter Mfg. Visit
- ➔ Patriots Path Council, BSA- Aviation Merit Badge Event 2010, SAT, MAY 1

### EAA CHAPTER CALANDER OF EVENTS:

<http://www.eaa.org/calendar/Default.aspx>

### AERODYNAMICS 101

ASEP 7, Lincoln Park Airport, JAN 10, 2PM-4PM  
Guest: Cathy Vajtay, certified flight instructor candidate with Aero Safety Training.  
Join us and bring a friend. This meeting will introduce basic aerodynamics of flight. We will have some fun learning and experimenting ourselves with the theories Cathy will examine with us.

### ANNUAL 4H WINTER TRAIN SHOW

<http://somerset.rce.rutgers.edu>

Sponsored by: The Somerset County 4-H Trainmasters  
Jan 30 & 31, 2010, 10AM to 5 PM  
4-H Center, 310 Milltown Road, Bridgewater, NJ  
Admission: \$3.00 – Adult, \$1.00 Children under 12

## AEROSPACE PROGRAM – COMPLETED ACTIVITIES

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Well here is a slide show of the Turkey Fly. Enjoy  
Tony Rossi, Somerset Signal Senders

- <http://www.photoshow.com/watch/pZ2fn2YP>
- <http://www.somersetsignalsenders.org/dnn/>

### Field Report, 12-06-09

Marshall Hayward, 4H-Broken Props Club  
Field was snow covered and wet, but we had a good day with Gliders, 4 pilots and 3 planes all made good flights in breezy and challenging conditions.  
We were also able to field test some of Mr. Modrowsky's power pod motor test data, and field trials confirmed his bench analysis. He will be posting results to the web site.

### AEP107 ANNUAL DINNER 2009 – 12-28-09

WOW!! What a wonderful evening. We told socialized, networked, caught up with each other, told stories, and had a wonderful dinner at the Sky Manor Airport Restaurant.



James Alaggio, Dan, Justin, Douglas Teel, Julian



Brian Wey and stepson David



Bob Holtaway, Doug Nelson, Tom Teel



Allan Macdonald, Chairman Emeritus  
Al's wife Edith can be seen just behind him.

## CLASSIFIEDS

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### AEP107 INVITES NEW MEMBERS TO JOIN,

[www.aep107.org](http://www.aep107.org), Aviation Exploring Post 107 always welcomes new members! We are coed, ages 14 through 20 and focused on "Personal and Aerospace Career Development". We have a very active aerospace program that networks our members within the aerospace community. For additional information, please contact: Tom Teel, 908 581 6876, [tfteel@optonline.net](mailto:tfteel@optonline.net)

## AEP107 MEMBER AND ALUMNI NEWS

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**AEP107 Members & Alumni**, please keep in touch with the AEP107 Flight Log. We would love to share your **program activities**. Please send program reports and pictures for our news letter to Tom Teel / [tfteel@optonline.net](mailto:tfteel@optonline.net).

## PERSONAL & AEROSPACE CAREER DEVELOPMENT

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PERSONAL DEVELOPMENT / CAREER ASSESSMENT / CAREER IDENTIFICATION / CAREER DEVELOPMENT / CAREER DEVELOPMENT SUPPORT  
**FOR ADDITIONAL INFORMATION CONTACT: TOM TEEL, [tfteel@optonline.net](mailto:tfteel@optonline.net)**

### PUBLICATIONS WORTH LOOKING AT:

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Coed 14 through 20 readers of this Flight Log please send me your aerospace publications worth looking at:

#### SMITHSONIAN NATIONAL AIR AND SPACE MUSEUM:

<http://www.nasm.si.edu>

#### AIR & SPACE MAGAZINE:

[WWW.AirSpaceMag.com](http://WWW.AirSpaceMag.com)

#### AvSCHOLARS™ – Student Gateway to Aviation™:

<http://www.avscholars.com>

- **NOTE:** This is an excellent Aerospace Career Development Website.

#### NASA TV:

<http://www.nasa.gov/multimedia/nasatv/index.html>

#### PICTURES FROM: Udvar-Hazy Center, National Air and Space Museum

<http://www.cdsg.org/forums/viewtopic.php?t=320>

Submitted by: Scott, AEP898, Enjoy

#### AIRSHOWBUZZ.COM

<http://www.asb.tv>

#### GREENWOOD AIRPORT 2009 AIRSHOW

<http://www.greenwoodlakeairshow.com>

Includes Dan Dameo

**A380 Panorama Pictures**<http://ow.ly/KnQ7>**NASA Mission Science**<http://missionscience.nasa.gov>**BOEING 787 – EVERYTHING YOU WANT TO KNOW**<http://787firstflight.newairplane.com/ffindex.html>

Submitted By: Douglas Teel, AEP107

**ZEPPLIN PICTURES**<http://home.comcast.net/~bzee1b/Zeppelin/Zepelin.html>

Submitted By: Kurt Stofko, AEP898

**[NASA Program Offers Community College Scholars Chance to Design Space Rovers, Visit Houston's Johnson Space Center](#)**

Dec 03, 09, NASA is offering community and junior college students from across the country an opportunity to participate in a semester-long scholars program, culminating in a three-day visit to NASA's Johnson Space Center in Houston.

**ST Aerospace hiring 250. Submit your resume**

KENS 5 Staff

<http://www.kens5.com/on-tv/ST-Aerospace-hiring-250-Submit-your-resume-78539597.html>

Dec 4, 09, If you're qualified, you could give yourself a big holiday gift with a good-paying job as an aircraft mechanic.

ST Aerospace San Antonio is looking to hire 250-290 aircraft mechanics in San Antonio. The company is expanding its facilities at the San Antonio International Airport and needs qualified mechanics.

**[NASA Launches Web Site for Teenagers That Want More Class](#)**

Dec 14, 09, NASA has launched a new Web site created specifically for teenagers that provides teens access to current NASA spacecraft data for use in school science projects, allows them to conduct real experiments with NASA scientists, and helps them locate space-related summer internships.

**[Aero-TV: Doorway to Aviation – Academy of Model Aeronautics at AOPA](#)**

December 28, 09, The **AMA** Joins the **AOPA** for the Promotion of General Aviation During the "Golden Age of Aviation," the nation's youth idolized such industry leaders as Charles Lindbergh and Amelia Earhart. As enthusiasm for aviation grew, small-scale aircraft building boomed in popularity, becoming both a fashionable hobby as well as an educational tool for the expanding career field.

**[NASA and Arab Youth Venture Foundation Launch Student Program](#)**

Dec 07, 09, NASA and the Arab Youth Venture Foundation in Dubai, United Arab Emirates (UAE) have partnered to provide three to 12 UAE engineering students each year the opportunity to work with U.S. students, scientists, and engineers on NASA missions.

**[Lockheed Martin Launches IT Apprenticeship Program In Northern Virginia](#)**

HERNDON, Va., Dec 9, 09 -- This fall, 21 Northern Virginia high school students joined Lockheed Martin [NYSE: LMT] experts to learn about information technology. The students are part of the first class of Lockheed Martin IT Apprentices in the Washington Metro Area.

The IT Apprenticeship Program partners with local high schools and provides technical training opportunities and mentoring to help develop local students into highly-skilled IT talent. This unique program, started in the Valley Forge, Pa. area in 2002, has been recognized with multiple local, state and national awards as a flagship science, technology, engineering and math (STEM) initiative.

**AEROSPACE HUMOR**[Return to Contents](#)

**UURP!!** Somebody was not watching the "NORAD Santa Tracker".

**AEROSPACE BUSINESS**[Return to Contents](#)

As a leading indicator of aerospace business health the Flight Log is using an Exchange Traded Fund (ETF) which currently contains fifty eight Aerospace – Defence company stocks. We are not trying to represent or sell this fund. This chart will appear monthly as a leading indicator of the business health of the Aerospace Sector.

**Please help.** If you have another aerospace business leading indicator, please let me know.



### PowerShares Aerospace & Defense Portfolio ETF

(NYSE: PPA) 6 month view: 113009

For additional fund information please go to the funds URL:

<http://www.invescopowershares.com/products/overview.aspx?ticker=ppa>

### Aerospace Industry To Grow About Eight Per Cent Next Year, Says MIGHT

<http://www.bernama.com/bernama/v5/newsbusiness.php?id=459652>

LANGKAWI, Dec 3 (Bernama) -- The aerospace industry is expected to grow at comfortable rate of about eight per cent next year due to the expansion of the aero-manufacturing and maintenance, repair and overhaul (MRO) sub-sectors.

### Aviation stocks fly high, deliver over 30% returns in 1 month

[http://www.moneycontrol.com/news/business/aviation-stks-fly-high-deliver-over-30-returns1-month\\_429141.html](http://www.moneycontrol.com/news/business/aviation-stks-fly-high-deliver-over-30-returns1-month_429141.html)

Dec 04, 09, CNBC-TV18

Aviation stocks have been flying high for the past one-month. Had you invested in SpiceJet, Jet Airways, or Kingfisher than in the Sensex one month before your portfolio would be up 61%, 50%, and 36%.

### Outlook bright for Russia's aircraft industry - Putin

<http://en.rian.ru/russia/20091203/157088548.html>

The Russian prime minister on Thursday pledged a steady flow of contracts for the domestic aircraft industry, and said it was facing a bright future.

Vladimir Putin said during his [annual TV and radio phone-in](#) that Russia's United Aircraft Corporation (UAC) will receive additional financial support and have its 46 billion ruble (\$1.6 bln) debt restructured.

"I am confident that the domestic aircraft-making industry has a good future, and [aircraft making plants] will have enough contracts to operate at full capacity in the next few years," he said.

### Mahindra Aims to Enter Aerospace Business; In Talks with Boeing

<http://www.bloomberg.com/apps/news?pid=20601091&sid=az.ZHb26G1yA>

Vipin Nair, Dec. 8 (Bloomberg) --Mahindra & Mahindra Ltd. aims to enter aviation components production business, Hemant Luthra, head of the company's autoparts division said today.

Mahindra has held discussions with Boeing Co. and Airbus SAS seeking orders, Luthra said in Mumbai.

Mahindra is spending \$10 million to set up a facility in Bangalore to produce aviation parts, he said.

### United Technologies to spend \$3B on M&A in 2010

<http://www.google.com/hostednews/ap/article/ALeqM5gcY6Egb3pRfsQaJUoiq2RM93TUgAD9CGP4001>

(AP), HARTFORD, Conn. — United Technologies Corp., parent of jet engine maker Pratt & Whitney, aerospace manufacturer Hamilton Sundstrand and other businesses, said Thursday it expects to spend roughly \$3 billion on mergers and acquisitions next year and \$1.5 billion to buy back company stock in a move to boost its bottom line.

### Aerospace Profits To Climb

<http://www.forbes.com/2009/12/10/whittington-united-technologies-intelligent-investing-aerospace.html>

**Rick Whittington, 12.11.09, Commercial air travel bottomed this past summer. The sky's the limit.**

Investors are sniffing out the likelihood that natural resources won't be as tight this cycle. This spells higher operating margins across commercial aerospace and its industrial derivatives. Manageable fuel costs and raw materials prices mean higher profits for finished-goods producers and aids strapped consumers and final demand across-the-board. This shift in the terms of trade most benefits net energy and raw materials importers encompassing not just most developed economies but also China and India. Both where GDP already is and where it's going. This promises higher top- and bottom-line growth, boosting market valuations, a win-win all around.

### Boeing's Bell: 787 will deliver on promises, make money

Seattle Post Intelligencer - Dec 8, 2009

Boeing's 787 Dreamliner will deliver on its promises and make money, Boeing Corporate President and Chief Financial Officer James Bell said Tuesday.

### GE looks to expand

[http://cincinnati.bizjournals.com/cincinnati/stories/2009/11/30/daily45.html?jst=b\\_In\\_hl](http://cincinnati.bizjournals.com/cincinnati/stories/2009/11/30/daily45.html?jst=b_In_hl)

Dec 4, 09, **Business Courier of Cincinnati**

**General Electric** Co.'s chairman and CEO, said the company will be looking for deals next year, and **GE Aviation** is one of its businesses that might expand. Cincinnati native Jeff Immelt spoke during a conference call with Wall Street analysts to discuss a deal to merge GE's NBC Universal with Comcast cable channels

### Commercial aerospace firms expect rebound soon

WASHINGTON (Reuters) - Commercial aerospace executives say the industry is poised for better times over the next few years after seeing profits battered.

### Boeing 787 Byproduct, Dreamliner Supplier Jobs

Dec 21, 09, Following the Dreamliners successful Dec. 15 first flight, at least 100 local parts suppliers are waiting for production to ramp up for Boeing's 787 so they can start putting people to work, and there are more outside of the state. Boeing's 840 orders for the 787 represent a record backlog and while testing is ongoing and first deliveries

aren't expected until the end of 2010, that doesn't mean the company isn't already building the jets. Boeing has already sent 10 of its 787 Dreamliners down the production line and is shooting for 10 per month by 2012.

### [US Aerospace Sales Up, But Momentum Expected to Slow](#)

DefenseNews.com (subscription)

By ANTONIE BOESSENKOOL **Aerospace** sales for US companies grew to \$214.1 billion this year and will edge up next year to \$214.4 billion.

## AEROSPACE NEWS

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Spaceport supporters tout project in Washington, D.C.

<http://www.sheboyganpress.com/article/20091203/SH E0101/912030471/1973/SHE0205/Spaceport-supporters-tout-project-in-Washington-D.C.>

Sheboygan Press staff • December 3, 2009

Advocates for making Sheboygan the Midwest's hub for aerospace development made their case Wednesday before the House Aviation Subcommittee in Washington, D.C., arguing that the city's location and industrial base make it uniquely suited for that role.

### [GA Reacts To FAA's Proposed Changes In Pilot Training](#)

Dec 03, 09, The time to respond to the FAA's latest proposed changes to flight-training rules closed on Monday, and nearly 400 comments were logged. The National Association of Flight Instructors said that while overall the 16 proposals are on the right track, they still had issues. "Some of [the proposed changes] lack the detail needed to fully allow their implementation," said NAFI Executive Director Jason Blair. "Others, instead of enhancing safety, actually decrease the level of flight proficiency and experience students will gain through their training activities. We also believe that further research on a number of these proposals is needed before final rules can be finalized."

### [Virgin Galactic unveils SpaceShipTwo](#)

Dec 07, 2009

<http://www.virgin.com/travel/inside-virgin-travel/virgin-galactic-unveils-spaceshiptwo-1>



[Virgin Galactic](#) is set to unveil SpaceShipTwo (SS2), the world's first commercial manned spaceship. Sir Richard Branson and Burt Rutan, the designer of SpaceShipOne (SS1)

will reveal the spaceship for the first time tonight.

Daily space tourism flights are set to begin in New Mexico from Spaceport America following the completion of test programming and US government licensing.

### [United Airlines Places Major Boeing and Airbus Order.](#)

Dec 08, 09, The US's third-largest carrier, United Airlines, has agreed a deal to buy 50 new aircraft. The company

said it will buy 25 planes from each of the two major aircraft manufacturers, Boeing and Airbus.

### [Korean Air To Buy Five New 747-8's](#)

Yesterday, December 08, 2009, 7:12:41 AM

Deal For The Intercontinental Reportedly Worth \$1.5 Billion Boeing and Korean Air announced Friday that the Asian carrier has ordered five 747-8 Intercontinental jetliners. Korean Air is the first Asian airline to order the passenger version of the 747-8.

### **FACTBOX: Five facts about the Boeing Dreamliner**

<http://www.reuters.com/article/idUSN1021143720091210?type=marketsNews>

CHICAGO, Dec 10 (Reuters)

- The craft promises greater efficiency through the use of durable, light-weight composite materials.
- Planes in the 787 family have list prices between \$150 million and \$205.5 million.
- Boeing has taken orders for 840 Dreamliners.
- The most recent delay resulted from a structural problem within the side-of-body joint of the aircraft -- the connection of the wing to the fuselage.
- The craft will use 20 percent less fuel for comparable missions in similarly sized airplanes. (Reporting by Kyle Peterson; editing by John Wallace)

### [FAA to Propose New Commercial-Pilot License.](#)

Dec 10, 09, gil, WASHINGTON: The top U.S. aviation regulator reiterated his commitment Thursday to enhance pilot-training and fatigue-prevention rules, but the anticipated changes aren't likely to go as far as some lawmakers have proposed.

### [Aero-TV: Van's Aircraft Factory - Where the RV SportPlanes Begin](#)

Mon, 14 Dec '09

### [Join ANN on a Tour of the Van's Aircraft Facility in Aurora, Oregon](#)

The 60,000 square foot Van's Aircraft facility, located in Aurora Oregon, is a far cry from the company's beginnings. Over 30 years ago, in a small shop behind his house in Reedville, Oregon, Richard VanGrunsven pursued his love of aviation.



### [BREAKING: VIDEO & PICTURES: Boeing 787 Dreamliner lifts off on maiden flight](#)

Dec 15, 09, After more than two years, Boeing's 787 Dreamliner has taken to the sky, marking the maiden sortie of the world's first majority-composite jetliner.

#### [Long-term FAA Bill Deferred to 2010.](#)

Dec 15, 09, The House and Senate have passed another three-month funding extension for the FAA.

#### [ESA Member States give green light to ExoMars Programme](#)

Dec 18, 09, ESA's Council yesterday gave the go-ahead to proceed with the implementation of the ExoMars Programme. This decision paves the way for two Mars exploration missions in cooperation with NASA in 2016 and 2018.

#### [Bill Lear, Jr. Dead At 81](#)

Dec 19, 09, Bill Lear, son of William P. Lear, legendary designer and developer of the Learjet business jet, died at the age of 81 Dec. 14, reports the East Volusia News. Lear Jr.'s life is detailed in his autobiography, "Fly Fast...Sin Boldly -- Flying, Spying and Surviving." Spanning a lifetime of aviation, Lear began flying at age 15. In 1946, then 17-year-old Lear Jr. borrowed \$1250 from his father, purchased a brand new Lockheed P-38 from the War Assets Administration and soon became the youngest pilot to race the aircraft in the Bendix Trophy races.

#### [Eclipse to start selling upgraded jets in 2010](#)

<http://www.newswest9.com/Global/story.asp?S=11743175>

Dec 29, 09, ALBUQUERQUE, N.M. (AP) - Eclipse Aerospace officials say the aircraft service company expects to deliver 28 upgraded very light jets to new customers by spring.

The company says the first two upgraded aircraft will be delivered in mid-January.

#### [Unmanned flight tests to advance airline reduced-crew concepts](#)

Dec 28, 09, - GE Aviation is participating in a series of unmanned flight tests with the FAA that the company says could eventually yield reduced-crew options.

#### [Man Sets Paper Airplane World Record.](#)

Dec 28, 09, gil, Usually an airplane flight that lasts just over 26 seconds isn't the kind of thing you'd jump for joy about.

## AEROSPACE TECHNOLOGY NEWS

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#### Websites worth visiting:

##### NASA - TechGate Wire:

[http://technologygateway.nasa.gov/TechGate\\_Wire.html](http://technologygateway.nasa.gov/TechGate_Wire.html)

##### C-5 Galaxy

<http://www.lockheedmartin.com/products/c5/>

## SIGHTED: A SECRET US AIRCRAFT IN AFGHANISTAN

### [Air Force Reveals Identity of Mysterious Skunkworks Stealth Drone](#)

Dec 07, 09, Jeremy Hsu, A U.S. Air Force official provides details on the mysterious aircraft spotted in Afghanistan. A mysterious, unidentified drone that has been spotted in multiple photos from Afghanistan resembling previous stealth aircraft has finally been officially revealed. The U.S. Air Force confirmed the new craft, designated the



RQ-170 Sentinel, to [Aviation Week](#) last Friday, after [photos](#) circulating online had caused much speculation among defense buffs.

Informally dubbed the "Beast of Kandahar," the tailless flying wing apparently is an RQ-170 Sentinel designed to provide recon and surveillance for warfighters on the frontlines. Online photos had shown the drone at a General Atomics Aeronautical System's hangar in Kandahar, Afghanistan.

The 30th Reconnaissance Squadron also operates the RQ-170 at Tonopah Test Range -- a location perhaps better known as Area 52 -- under the aegis of Creech Air Force Base in Nevada.

### [GE: Remote diagnostics helped find cracked CF34 fan blades](#)

Dec 01, 09, GE Aviation says its remote diagnostics services "contributed substantially" to finding three cracked fan blades among the thousands of engines it analyzed.

### [High-Tech Canine Flak Jacket Lets Tactical Dogs Operate Far from Handlers](#)

Dec 02, 09, Clay Dillow

He is man's best friend after all, so doesn't he deserve the tactical body armor commensurate with that title? [K9 Storm](#), a Canadian body armor specialist, pulls in millions a year manufacturing [body armor for dogs](#) serving in the line of duty on police forces and in militaries around the world. In 2010, their newest line of doggie defense, the K9 Storm Intruder, will pull Fido into the digital age.

### [Paper screens could provide depth to computer display](#)

Dec 03, 09, a video projector, infrared camera and a special sheet of paper are all that's needed to explore graphical data in three dimensions.

**United Technologies claims fuel cell helicopter first**  
<http://www.flightglobal.com/articles/2009/12/07/335861/picture-united-technologies-claims-fuel-cell-helicopter-first.html>



**Rob Coppinger**, A hydrogen fuel cell-powered 10kg (22lb) helicopter model with a 2m (6.55ft) rotorspan has been flown for 20min by United Technologies' research

centre at the company's East Hartford campus in Connecticut, USA

### [California gives green light to space solar power](#)

Dec 07, 09, The state has approved a deal in which the Pacific Gas and Electric Company will buy power beamed down from satellites beginning in 2016

### [Americans Consume 34 Gigabytes Daily Per Person](#)

Dec 09, 09, Jeremy Hsu, A new report calculates that Americans ingest an enormous info diet Let's face it, Americans are info hogs. We feast our eyes and ears on TV, computers, video game consoles, handheld consoles, smart phones, radio, movies, and music -- not to mention print media. Now a new report finds that the info diet adds up to about 34 gigabytes per day for each person, or the equivalent of 11.8 hours per day.

### [Aero-TV: The Farnborough Kestrel – All Carbon-Fibre Business Aircraft](#)

Dec 11, 09, Farnborough Director Adrian Norris Updates ANN on the Kestrel Aircraft Conceived as a new chapter in business aircraft, the Kestrel represents the application of advanced aerodynamics combined with state-of-the-art carbon-fibre composite construction. Developed by the British company, Farnborough Aircraft, the Kestrel made its first flight in July of 2006.

### [VIDEO: NASA DROPS A HELICOPTER FROM MIDAIR TO TEST NEW ANTI-CRASH TECH](#)

By Clay Dillow Posted 12.09.09



No stranger to rough landings, NASA just engineered a crash of its own design to test a new [crash countermeasure](#) for helicopters. NASA dropped a donated Army MD-500 carrying four crash test dummies from 35 feet, to determine whether a new honeycomb cushion made of

Kevlar strapped to the bottom of the copter could absorb the brunt of the impact. The result: a more or less intact MD-500, and the cool impact video below.

### [Swiss Team Achieves First-Ever Manned Solar Plane Flight](#)



Dec 03, 09, Stuart Fox, Considering the massive carbon emissions that come from burning jet fuel, air travel is in serious need of a green makeover. To that end, the folks over

at the École Polytechnique Fédérale de Lausanne, Switzerland, have been working on a solar-powered plane since 2003. Now, after six years of testing, they have finally managed to [get the plane off the ground](#).

### [Google Demonstrates Quantum Algorithm Promising Superfast Search](#)

Dec 11, 09, Jeremy Hsu, Quantum computing has long dangled the possibility of superfast, super-efficient processing, and now search giant Google has jumped on board that future. [New Scientist](#) reports that Google has spent the past three years developing a quantum algorithm that can automatically recognize and sort objects from still images or video.

### [Aero-TV: Trace Engines - Re-Engineered Turbocharged Power](#)

<http://www.aero-news.net/index.cfm?contentBlockId=191f2d4b-9647-489d-8163-7d052e328fbb>

Thu, 17 Dec '09, [C.E.O. David Czarnecki Profiles the 600 Horsepower Trace Engine](#)

Until recently, general aviation manufacturers had only one option, the turboprop, for powering market aircraft. Trace Engines LP spent years developing and designing an alternative solution to meet the aviation industries need for a modern, cost effective reciprocating engine. Fully certified and ready for production, the Trace V-8 engine represents an evolution in engine selection.

### [Insurgents Hack Predator Video Feed With \\$26 Software](#)

Dec 17, 09, Stuart Fox, The use of drone aircraft for surveillance and bombing has transformed how the US wages war -- a fact not lost on our cunning adversaries. Rather than just sit around, waiting for the next Predator missile strike, insurgents in Iraq have [devised a way to intercept the video feed](#) from drone sensors, giving them the same view as the drone's operator. And they did it with a \$26 piece of software.

### [Space Station Fly-Around](#)

The sheer size and complexity of the International Space Station comes across in this detailed animation produced by the Virtual Reality lab at NASA's Johnson Space Center for use in astronaut training. Our narrated tour gives a quick once-around of the station, pointing out the main elements, from the sleeping quarters to the cylindrical laboratory modules.



## Spaceships may speed consumer air travel A commercial two-hour flight to anywhere on Earth may soon be possible

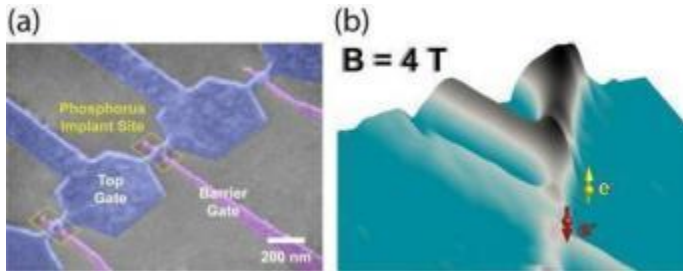
[http://www.msnbc.msn.com/id/34313934/ns/technology\\_and\\_science-science](http://www.msnbc.msn.com/id/34313934/ns/technology_and_science-science)

By Irene Klotz, DiscoveryNew

Want to fly anywhere on Earth in less than two hours? Today, Virgin Galactic is scheduled to unveil [SpaceShipTwo](#) in California's Mojave Desert, the first spacecraft for private passenger travel. With several firms working on commercial suborbital spaceships, a two-hour flight to anywhere on Earth may soon be possible, says an advocacy group laying the groundwork for global high-speed air and space travel.

## Tiniest Transistor Ever Runs Electric Current through a Single Atom

Yesterday, December 07, 2009, 5:22:09 PM | Jeremy Hsu



A tiny working transistor provides a glimpse of the future in quantum computing. Ever-faster computers face a slowdown because of upcoming physical limits on the size of transistors, the small switches that control electronic processes. Now researchers have demonstrated the [world's tiniest transistor](#), which passes electric current through a single phosphorus atom -- an achievement that goes beyond classical computing and hints at the [future of quantum computing](#).

## Classified Bomber Under Consideration



Dec 22, 09, Sources have reported that Northrop Grumman did win a secret demonstrator program for a large stealthy platform.

## Engage the x drive: Ten ways to traverse deep space

<http://www.newscientist.com/article/dn18283-engage-the-x-drive-ten-ways-to-traverse-deep-space.html?page=1>

21 Dec 09 by [Michael Marshall](#), The technologies range widely in their plausibility. Some, we could more or less build tomorrow if we wanted to, while others may well be [fundamentally impossible](#).

1. Ion thruster
2. Nuclear pulse propulsion
3. Fusion rocket
4. Bussard ramjet
5. Solar sail

6. Magnetic sail
7. Beam-powered propulsion
8. Alcubierre drive
9. Wormholes
10. Bonus technology: Hyperspace

## To Increase Passenger Jet Fuel Efficiency, Airlines Look to Nature's Flying Formations

Dec 08, 09, Clay Dillow, Your next flight could be in a convoy. It turns out the lumbering Spruce Goose could've learned something from its namesake. Researchers at Stanford suggest that airliners flying in [formations](#) akin to the "flying V" employed by migrating geese could trim double digits from fuel consumption and emissions, improving overall range efficiency and saving on fuel costs.

Aeronautics experts at Stanford found in previous research that a formation of 25 birds flying in formation -- an echelon, V-shape, etc. -- can improve their range efficiency by a whopping 71 percent over solo flight. This is due to an aerodynamic phenomenon known as up wash that causes the air flowing over a bird's wings to curl upwards as it passes the wingtips. Birds flying in its wake experience reduced drag, expending less energy to fly a given distance.

## Nanocrystals Create an Insulator Better Than Pure Vacuum



Dec 14, 09, Jeremy Hsu  
Photonic crystal insulation could have exciting applications. Vacuum's emptiness doesn't just pose a problem for space travelers -- a vacuum lining is also one of the best known insulators on Earth, and may help

keep those holiday drinks and soups warm in your thermos. Now scientists have found that [layering photonic crystals](#) within the vacuum lining can even prevent heat loss from invisible infrared radiation.

## Sky Snake

[WWW.AirSpaceMag.com](http://WWW.AirSpaceMag.com), <http://www.tao-group.de/intro.html>



Flexible blimps are bending the rules on UAV design. Leave it to the Germans to think, *we can do a better blimp*. **TAO (Trans-Atmospheric Operations) Technologies GmbH**, of Stuttgart, Germany, partnered a few years ago with the University of Stuttgart, and more recently with Ft. Lauderdale, Florida-based Sanswire Corporation (from the French "sans" for

"without" paired with the English "wires") to develop and market a new kind of airship, the Stratellite—a smaller, more flexible, unmanned, autonomous blimp that may rewrite the books on the value of lighter-than-air vehicles.

## PICTURE(S) THE MONTH

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### [Darpa's Cyborg Insect Spies, Now Nuclear-Powered](#)

Dec 10, 09, Stuart Fox, when you write for *Popular Science*, it's easy to become desensitized to wild and crazy future tech. To wit: When I [first heard](#) that Darpa wanted to develop cyborg insects to carry surveillance equipment, I thought "ok, cyborg insect spies are pretty cool, but not blowing me away."

Then today, Cornell researchers working on the program [unveiled a prototype transmitter](#) for the cyborg bugs that runs on radioactive isotopes. Nuclear powered cyborg insect spies? Ok, now you have my attention.

