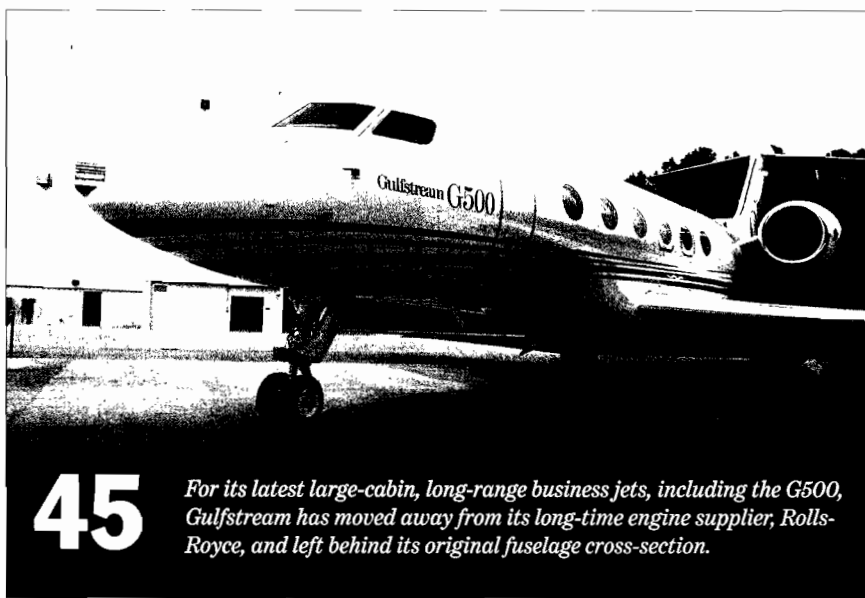


**AVIATION WEEK**  
& SPACE TECHNOLOGY

Tap this icon in articles in the digital edition of AW&ST for exclusive features. If you have not signed up to receive your digital subscription, go to [ow.ly/AkXJo](http://ow.ly/AkXJo)

- 10-12 Feedback
- 14 Who's Where
- 16-18 The World
- 19 Up Front
- 20 Leading Edge
- 22 Reality Check
- 23 Airline Intel
- 24 In Orbit
- 25 Washington Outlook
- 55 Classified
- 56 Contact Us
- 57 Aerospace Calendar



BILL GARVEY/AW&ST

**45**

*For its latest large-cabin, long-range business jets, including the G500, Gulfstream has moved away from its long-time engine supplier, Rolls-Royce, and left behind its original fuselage cross-section.*

**THE WORLD**

- 16 **Rolls-Royce begins** flight tests of composite carbon/titanium fan blade—key to two new engines
- 18 **First-light imagery** from Mars orbiter displays components of planet's upper atmosphere

**SPACE**

- 26 **Data-sharing deal** will help SpaceX land Falcon 9 on Earth and NASA put humans on Mars
- 28 **Technical hurdles** loom for Webb telescope program as NASA proceeds with instrument tests

**AIR TRANSPORT**

- 31 **Ebola outbreak** highlights aviation's lack of common approach; industry struggles for containment policies

- 33 **Russia's economic** situation, political tensions over Ukraine pose challenges for country's airlines
- 34 **Fresh assessment** of satellite data has shifted the hunt for MH370 to a new Indian Ocean search zone

**DEFENSE**

- 36 **Pressure mounting** on German defense minister to resolve issues surrounding country's armed forces
- 36 **France and U.K.** set to begin work next month on a two-year feasibility study of a future combat air system
- 38 **U.S. Army enhancing** the capabilities of its frontline Apache AH-64D/E attack helicopter

- 38 **Bell Helicopter** bulks up its tilt-rotor team as it pursues Army's JMR technology demonstrator

- 39 **USAF F-16 life** extension gathers pace as automatic ground collision avoidance system enters service

- 41 **Pratt & Whitney** continues to explore options for fixes to the F135 stator and polyimide rubbing problems

**TECHNOLOGY**

- 42 **Lockheed Martin** aims to develop compact reactor prototype in five years, production unit in 10

**BUSINESS AVIATION**

- 45 **New Gulfstream** G500 and G600 offer more speed, range, cabin volume and cockpit technology

**ON THE COVER**

42 Rings containing superconducting magnets are shown in an experimental container at a Lockheed Martin Skunk Works research lab. They are part of a previously secret initiative to develop a compact fusion reactor within a decade that could power 80,000 homes for a year on less than 50 lb. of fuel. Senior Propulsion Editor Guy Norris received exclusive access to the project and describes Skunk Works' ambitious goals and their aerospace applications. Elsewhere in this issue are previews of this week's National Business Aviation Association gathering (page 45) and an update on how airlines are responding to the Ebola outbreak (page 31). Skunk Works photo by Eric Schulzinger/Lockheed Martin. Gulfstream G500 photo by William Garvey/AW&ST.



31 **Concerns over the spread of Ebola** are causing operational trouble for airports and airlines around the world

48 **Dassault CEO** talks about the company's aim to roll out its new longer-range 8X aircraft before year-end



**50** China's crackdown on corruption linked to slump in sales of executive jets but not to operations

## FACE TO FACE

**48** Dassault CEO talks about aircraft market, why he is confident the company will gain ground in China



## FLYING THE CITATION SOVEREIGN+

**51** Improvements make Citation Sovereign+ even more of a solid performer in the midsize market

## VIEWPOINT

**58** USAF's RD-180 replacement program appears to be a poster child for a competitive procurement



# On the Web

## A roundup of what you're reading on AviationWeek.com

Our cover story on Lockheed Martin Skunk Works' bid to develop a Compact Fusion Reactor (page 42) generated intense interest when it was posted on AviationWeek.com on Oct. 15. [ow.ly/CNDEZ](http://ow.ly/CNDEZ)

Here are some of the varied reactions posted by readers.

Should I be surprised that I can laugh at you later, if I live longer?  
—dugsboat

For dugsboat—I've printed out your comment so I can laugh at you in a month or so. Remember that the Wright brothers built their plane for 1% of what Langley and Lillenthal spent failing for decades. Ya never know.  
—guy.higgins

We know the process works but haven't been able to put it in a bottle. This is like Edison looking for the incandescent light.  
—Systemsguy

Evidently "Fusion" is like buses. You wait forever and then two come along at the same time. The University of Washington has a proposal this week: [ow.ly/CRr9R](http://ow.ly/CRr9R)  
—observer

While I am extremely skeptical, this is the type of stuff that inspires new engineers to not only work for a company but become an engineer in the first place. Nice to know there is a company out there that still actively pursues R&D that may not pan out for decades or at all unlike say, Boeing and their "no more moonshots" idioy.  
—towellie

Small fusion reactors are the way to go, but I am hoping Lockheed is basing its predictions conservatively as many industrialists are crying the "Fusion" wolf call!  
—vstephenbar2001

**HUZZAH!!! FINALLY.** Now, let's get Tom McGuire (interesting that he shares names with one of the greatest LOCKHEED combat pilots EVER) fully funded and supported, to build THE proof-of-concept system and get this thing out of the lab, into production as a powerplant for spacecraft AND power station, and END the dependency on fissionables and fossil-fuels for electricity. And eventually, for transportation.  
—Mad Yank

