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**AVIATION WEEK**  
& SPACE TECHNOLOGY

Winner 2013



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**THE WORLD**

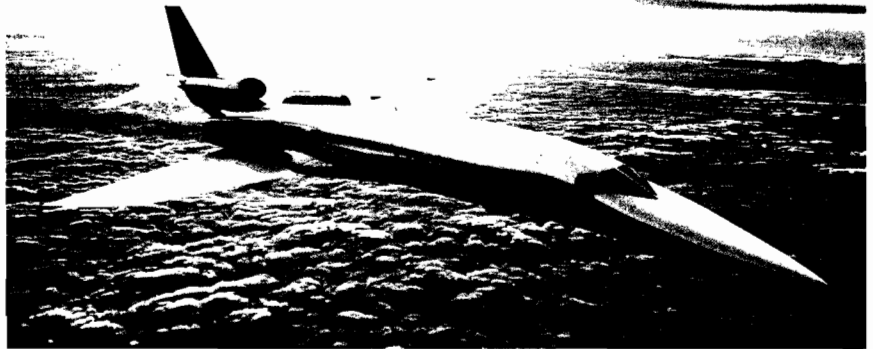
- 10 ATK offers concept** for solid-fuel rocket to replace the Russian-built RD-180 as Atlas V power
- 10 Embraer establishes** U.S. foothold for production of defense systems stateside with rollout of the A-29
- 10 First flight** for Airbus A320neo opens flight-test campaign with first deliveries slated for mid-2016
- 11 Oleg Ivanovsky dies**, was Soviet space-technology pioneer who helped design Sputnik 1

**BUSINESS AVIATION**

- 20 Airbus engineering** expertise to help accelerate Aeron supersonic bizjet design toward production

**20**

*Aeron possessed the technology and the vision to develop its supersonic business jet concept, all that was lacking were the resources and some skills—and that's where the Airbus Group comes into the picture. Some of its senior engineers from the military aircraft division will be sent to Reno, Nevada, to work with the Aeron team.*



**AIR TRANSPORT**

- 21 Aircraft financiers**, other business leaders voicing concerns that the industry could be in for an awakening
- 23 Air France's** acquiescence to key demands of striking pilots could seal the carrier's fate
- 24 Wall Street sends** message to JetBlue along with new CEO: Start acting more like competitors
- 25 Growing number** of avionics providers working to keep data flowing to ATC despite passengers or crew
- 32 Upset recovery** flight training takes on new importance as more comprehensive rules come into force

**DEFENSE**

- 26 Stealthy, twin-engine F-22** finally has destroyed its first target in a conflict, after nearly 10 years of use
- 27 Given regional** tensions, many European nations hope to shore up supply of cruise missiles
- 28 Latest vision** for data-sharing across ships, aircraft and satellites is now being dubbed the 'combat cloud'
- 29 U.S. Army ponders** whether to develop a new advanced rotorcraft or put UH-60 through another upgrade
- 44 Japanese requirement** for four more AEW&C aircraft is offering export sales opportunity
- 45 Denmark bolsters** its Arctic claims by strengthening defenses in Greenland, exerting its sovereignty

**ON THE COVER**

When Expedition 40 returned to Earth on Sept. 11 after 169 days on the International Space Station, Russian technicians were on hand, as always, to recover the two cosmonauts and a U.S. astronaut from their Soyuz capsule. NASA photo by Bill Ingalls. Today, the U.S. and Russia rely on each other to keep their human spaceflight programs going. But geopolitical conflicts and funding constraints present space agencies with new obstacles to cooperation that require innovative solutions. As the 65th International Astronautical Congress convenes in Toronto this week, special reports starting on page 36 and an editorial on page 50 examine the future of space cooperation.



**32 Props, simulators and jets** are vehicles in the battle for customers at world's largest upset recovery training providers



29

### SPACE

**31 FAA space** transportation office publishes 'recommended practices for human spaceflight occupant safety'



45

### SPACE COOPERATION

**36 Tensions related** to the Ukraine situation and other matters have left space alliances relatively unscathed

**38 Competition for** public funds worldwide and export controls complicate space cooperation

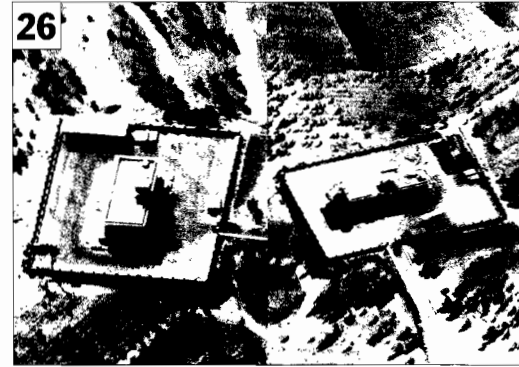
**40 Following the ISS** model, civil agencies tap private partners for spaceflight developments

**42 Chinese space** station offering a range of opportunities for international cooperation

### EDITORIALS

**50 Chinese are intent** on being a space power on par with U.S. and Russia, so bring them into the tent

**50 Pilots will have** to share the blame if Air France folds because it can no longer be competitive



26

## On the Web \*

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

The Sept. 25 inaugural flight of the Pratt & Whitney PW1100G-powered Airbus A320neo is "the most significant milestone in the history of the single-aisle twin since the original CFM56-5-powered prototype flew for the first time in February 1987," writes Senior Propulsion Editor Guy Norris. [Read more about the flight on page 10](#) then take a peek inside Aviation Week's archives to see how we covered the A320's debut 27 years ago. [ow.ly/BV25P](http://ow.ly/BV25P) [AviationWeek.com](http://AviationWeek.com)



## RAPTOR ATTACK

The F-22 made its first combat stake out in the Middle East. Read our story (page 26) and two blogs inspired by the event. Senior International Military Editor Bill Sweetman asks whether an unmanned aircraft could have done the job just as well: [ow.ly/BUUqX](http://ow.ly/BUUqX) And Senior Pentagon Editor Amy Butler ponders whether there was a "red line" crossed: [ow.ly/BUUBE](http://ow.ly/BUUBE) [AviationWeek.com](http://AviationWeek.com)



On last week's column by Pierre Sparaco on the Air France-KLM pilot strike, Stephane wrote, "The main problem is not the Air France pilots, whose productivity is the same as their European peers. The real problem is the European pilots' productivity." [ow.ly/BUXlh](http://ow.ly/BUXlh)



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