

**AVIATIONWEEK**  
& SPACE TECHNOLOGY

Tap this icon in articles in the digital edition of AW&ST for exclusive features.

- 7 Feedback
- 8 Who's Where
- 10-11 First Take
- 12 Going Concerns
- 13 Up Front
- 14 Inside Business Aviation
- 15 Airline Intel
- 16 Leading Edge
- 18 In Orbit
- 19 Washington Outlook
- 55 Classified
- 56 Contact Us
- 57 Aerospace Calendar

**COMMERCIAL AVIATION**

- 20 **Air Berlin's** restructuring is the clearest sign of fundamental shift in German air transport market
- 22 **Long-haul services** from Chinese secondary cities expected to thrive after government subsidies expire
- 24 **Mitsubishi MRJ**, struggling with more technical difficulties, may be delayed again, past mid-2018 goal
- 32 **Zodiac Aerospace** CEO reflects on production problems and what it will take to transform the company
- 33 **Air Astana** of Kazakhstan will be able to link Western Europe and China with its new narrowbodies
- 52 **American Airlines** executives discuss the continuing work of US Airways integration

**44**

Among the aircraft on display at North Korea's first public air show were U.S.-made Hughes (now MD Helicopters) MD500 light helicopters operated by the Korean People's Army Air Force.



**DEFENSE**

- 25 **Air Education** and Training Command chief on U.S. Air Force's perspective on T-X competition



**41**

- 26 **Poland's defense** modernization plans for helicopters and missiles snarled by political maneuvering

- 44 **Smuggled U.S.-built** helicopters are among defense equipment on display at North Korean air show

- 46 **India's Rafale** buy, long-anticipated by Dassault, looms as part of escalating regional arms race

- 47 **Low-cost L-39NG** jet trainer revitalizes Aero Vodochody and Czech aerospace industry

**SPACE**

- 29 **Russia's S7** airline group aims to venture into space launches by modernizing Sea Launch project
- 30 **Europe's Rosetta** probe concludes long mission with intentional crash landing into Comet 67P
- 34 **Elon Musk** outlines plan to build transport system that will make humans a 'multiplanet species'

- 36 **India works** to engage private sector in satellite building so it can double its satellite launch rate

**TECHNOLOGY**

- 31 **German startup** E-volo pitches plan for 'multicopter' family to provide urban air services as early as 2020

**ON THE COVER**

Nearly three years after its merger with US Airways, American Airlines is generating robust profits, expanding its global network and refreshing its fleet with new state-of-the-art aircraft from Boeing and Airbus. Madhu Unnikrishnan reports on how CEO Doug Parker pulled off the complicated merger that created the world's biggest airline (page 52). Joe Pries photo. Also in this issue: SpaceX founder Elon Musk's bid to take humans to Mars for \$100,000 a seat (page 34), a report on hybrid-electric propulsion aircraft (page 48) and rare photos from a North Korean air show (page 44). Aviation Week publishes a digital edition every week. Read it at [www.aviationweek.com](http://www.aviationweek.com) and on our app.

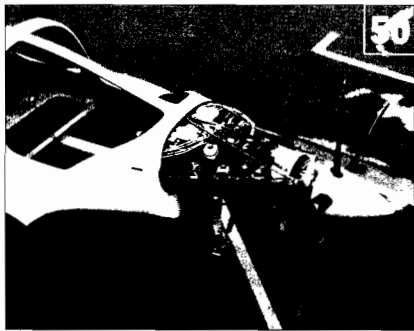


**37 Air-breathing booster** study by U.S. Air Force aims at multistage next-generation space launch vehicle

**38 Composite structures**, embedded propulsion define Aurora Flight Sciences/MIT D8 airliner concept

## CONNECTED AEROSPACE: BATTLEFIELD COMMUNICATIONS

**40 U.S. Air Force** seeks network to enable fifth- and fourth-gen fighters to share common picture



**41 Northrop Grumman** looks to supply 'airborne gateway' for Australian, UK battlespace network needs

**42 U.S. Navy** communications technology may be key to updating Air Force Link 16 architecture

## PROPULSION

**48 Short-haul** flights with small aircraft may make commercial hybrid-electric airplanes a reality

**50 Potential for** near-term energy and emissions savings fuel hybrid-electric propulsion projects

## VIEWPOINT

**58 Fast and flexible** smallsats offer resilience U.S. needs as potential adversaries advance in space

