Est. 1955

AVIATIONWEEK & SPACE TECHNOLOGY

Grand Neal Winner 2017

Access exclusive online features from articles accompanied by this icon.

- 7 Feedback
- 8 Who's Where
- 9-10 First Take
 - 11 Up Front
 - 12 Going Concerns
 - 14 Inside Business Aviation
 - 15 Airline Intel
 - 16 Leading Edge
 - **18** Washington Outlook
 - **64** Classified
 - 65 Contact Us
 - 65 Aerospace Calendar

SPACE

- **20 Cassini's epic journey** of discovery at Saturn draws to a close, leaving mysteries for future explorers
- **22** Flying between Saturn and its inner ring is a surprisingly easy ride, but Cassini proceeded with caution
- **48 U.S. NGA considers** tapping the commercial sector to help it keep pace with Earth-imagery deluge

COMMERCIAL AVIATION

- **24** Lufthansa, EasyJet, Condor and others line up to bid for all or parts of bankrupt Air Berlin
- **25** Boeing X-plane demonstrator could lead the way to a new generation of Boeing commuter aircraft



- **27 United Airlines** addresses issues with thousands of iPads its pilots are using as electronic flight bags
- **54** Taiwanese aerospace manufacturer seeks to work on new programs such as Boeing's next airliner
- **56 Tighter regulations** provide an opportunity for manufacturers of carry-on baggage scanners
- **58 Malaysia Airlines** looks to add more new and used aircraft to its fleet to match its reshaped network
- **59** European charter carriers see fast long-haul growth as a way to counter low-cost operators

- **60 Long-haul, low-cost** carriers remain profitable in Asia, but most are not looking to move beyond the region
- **61 Major Asia-Pacific** low-cost players have massive narrowbody aircraft orders, but will demand hold up?
- **62** Spring Airlines' model should promote budget aviation in China despite the difficult environment
- **63** Regional aviation's long-standing problems in China push Chinese operators to aim for larger aircraft

DEFENSE

- **28** Launch and recovery feasibility will make or break small unmanned air vehicle plan
- **29 Predator C Avenger** program may be close to a turnaround after failing to attract notable sales
- **29** U.S. Air Force's next-generation air-to-air platform begins to emerge from the shadows
- **30** A light-attack fleet would provide another track for new fighter pilots, U.S. Air Force leaders say



ON THE COVER

One of the big surprises of the Cassini mission is the discovery of water-ice plumes jetting from the south polar region of Saturn's moon Enceladus, pictured in this NASA Jet Propulsion Laboratory image. Irene Klotz reports on the spacecraft's epic journey of discovery beginning on page 20. Also in this issue: Taiwan's fighter development plans (page 33), cockpits of the future (page 36), developing agile electronic warfare technologies (page 41) and the fallout from Air Berlin's bankruptcy (page 24). Aviation Week publishes a digital edition every week. Read it at and on our app.

Contents

Pentagon Editor Lara Seligman joined Air Mobility Command chief Gen. Carlton Everhart and his crew for a Boeing C-17 Globemaster III flight as part of Exercise

Mobility Guardian. Hundreds of airmen participated in the international exercise at Joint



Base Lewis-McChord near Tacoma. Washington, the first of its kind to focus solely on mobility and logistics. The airmen, along with soldiers from the U.S. Army's 82nd Airborne Division, practiced joint forcible entry, airdrop, aeromedical evacuation, combat search and rescue and more.

- **32** Planning for the first F-35 landings on UK's new HMS Queen Elizabeth carrier progresses
- **33** Full-scale development of a new Taiwanese fighter probably will begin by the mid-2020s
- **34** Taiwan's AIDC Advanced Jet Trainer only looks like its F-CK-1 fighter predecessor
- **51** Lockheed and Boeing receive debriefs after USAF announces winners for next nuke programs
- **52** Romania proceeds with plans to modernize its armed forces, meet NATO defense spending targets
- **53** U.S. Air Force explores ways to use advances in automation and AI to ease intel gatherers' workload

COCKPITS OF THE FUTURE

36 Thales lays groundwork to be able to embrace 'open world' digital applications in its flight decks

38 A camera-based augmented reality system is part of a looming technology renaissance for controllers

ELECTRONIC WARFARE

- **40** Expendable decoys are becoming viable with advances in miniature electronics and anntenas
- **41** Funding paces efforts to restore a lead the U.S. formerly held in electronic warfare systems

TECHNOLOGY

- 44 Nano-drones carried by individual soldiers promise to dramatically change urban operations
- **45** Wind-tunnel and engine evaluations pave the way for the world's first commercial hypersonic testbed
- **50** Hybrid gasoline-electric propulsion provides more endurance for new multicopter drones

A FAREWELL

66 Exective Editor James R. Asker reflects on his great three-decade ride as an aerospace journalist



Senior Propulsion Editor Guy Norris (left) and Editor-in-Chief Joe Anselmo were among a group of aerospace journalists on hand Aug. 16 at Gray Butte, California, for the arrival of a General Atomics Aeronautical Systems MQ-9B SkyGuardian after a 275-mi. trip from Yuma Proving Ground in Arizona. The unmanned aircraft, which had to receive FAA approval to fly through nonrestricted airspace, is designed to meet NATO airworthiness requirements for unmanned systems.