# **Contents**

# AVIATIONWEEK & SPACE TECHNOLOGY

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

- 9 Feedback
- 11 Who's Where
- **12-14** First Take
  - 15 Up Front
  - 16 Going Concerns
  - 18 Inside Business Aviation
  - 20 Airline Intel
  - 21 Leading Edge
  - 22 Commander's Intent
  - 23 In Orbit
  - 24 Washington Outlook
  - 71 Classified
  - 72 Contact Us
  - **73** Aerospace Calendar

### DEFENSE

- **26** France resets military posture and defense spending following terrorist attacks on Paris
- **27 Protest of bomber** contract by Boeing-Lockheed team could be aimed more at Congress than GAO

## **BUSINESS AVIATION**

29 Textron moves Cessna toward large-cabin jet market with cleansheet Citation Hemisphere

# ROTORCRAFT

**32** Airbus Helicopters aims to compete better against Mi-17 with Super Puma production in Romania

# COMMERCIAL AVIATION

**33** Major cabin developments are occurring at both ends of spectrum: premium and budget



France triples air capacity over Syria and Iraq, sends an aircraft carrier to the Persian Gulf to bolster it further, and asks allies to increase their participation in the fight against the Islamic State group following terrorist attacks on Paris.

- **34 Gogo seeks** customers worldwide for 'groundlike experience' of new satellite-based Internet service
- **36 Mitsubishi Aircraft's MRJ** takes to the air at last, but its late first flight has shortened the flight-test phase
- **37 Despite improving** profits, cargo weakness and other issues temper outlook for Asia-Pacific airlines
- **40 IAG appoints** Vueling CEO Cruz to head British Airways in a bid to revamp the legacy structure

### **DUBAI AIRSHOW 2015**

- **43** Airbus gives Emirates some assurance about A380neo and says it may build larger A350
- **44 Clues emerge** about the forces shaping Boeing's 757-replacement new midsize airplane

- **46** AgustaWestland gets a boost of confidence from UAE interest after losing tiltrotor prototype
- 47 UAE challenges Saab to develop single platform for maritime, air and land surveillance missions

## **SPACE**

48 ViaSat is developing a constellation of GEO satellites to provide faster, cheaper global broadband

# **TECHNOLOGY**

- 49 Hypersonic airliner escape-capsule concepts are devised by European Union-funded Hypmoces program
- **69** Darpa program demonstrates mathematically exact software can reduce aircraft cybervulnerabilities



# ON THE COVER

Two versions of CFM's Leap engine, the Leap-1A for the Airbus A320neo (foreground) and the -1B for Boeing's 737 MAX, fly beneath the wings of General Electric's two 747 flying testbeds over California's Mojave Desert. Guy Norris reports on the test campaign for the engines (page 60). CFM International photo. Also in this issue: a special report on simulation and training (page 54) and the first flight of Mitsubishi's regional jet (page 36). Aviation Week publishes a digital edition every week. Read it at and on our app.



# **64** NASA takes a deeper

look at how it will use the big new Saturn V-class Space Launch System in the 2020s and beyond



56 Military and civilian aviation worlds update methods of teaching a new generation to fly, crew and maintain aircraft

### **100 YEARS OF AVIATION WEEK**

**50 Airplane speeds** rocketed ahead in the first 60 years of flight, then leveled off—how did it happen?



# **SIMULATION AND TRAINING**

**54 Industry embraces** 'blended' training of educational and simulator technologies

**55** Canada's hard lessons in



Afghanistan spurred state-of-theart Chinook training center

- **56 'Fused Reality'** concept brings the simulator into the aircraft for training of complex, risky tasks
- **58** New private-pilot curriculum will include a virtual instructor in an immersive environment

### **PROPULSION**

- **30 GE launches** family of advanced turboprop engines to challenge dominance of Pratt PT6
- **60 CFM reveals** details of test effort for Leap engines that will power A320neo, C919 and 737 MAX
- **62 Pratt & Whitney** geared turbofan nears certification, service entry in 'historic quarter' for company

### **HUMAN SPACEFLIGHT**

- **64** Exploration engineers, scientists have ambitious plans for Space Launch System applications
- **68** NASA bets search for signatures of life can be enhanced by throw weight of Space Launch System

# VIEWPOINT/EDITORIAL

**74 History indicates** next U.S. bomber cost and purchase numbers will not match those announced





Free to subscribers. Get new content daily and read the weekly digital edition of Aviation Week online or in our app.

#### DESKTOP/LAPTOP

Go to AviationWeek.com. awst

#### APPLE APP

Go to the Apple App Store, search for "Aviation Week" and download the Aviation Week & Space Technology app to your iPad or iPhone.

### ANDROID APP

Go to Google Play, search for "Aviation Week" and download the *Aviation Week & Space Technology* app for your Android phone or tablet.

### LOGIN

Tap on any locked article to get to the login screen OR on the menu icon in the upper right corner of the app screen (image with three parallel lines) and tap "Login." Log in using the email address associated with your subscription.

Forgot Password? Tap the "forgot password" link on the login screen and follow the reset instructions emailed to you (this password may not be the same as your digital edition password).

**Customer Service** If you don't have a registered email or password, or are having problems with the download or login, contact our customer care team for assistance:

> Toll-free (North America) 800-525-5003

Outside North America (+1) 847-763-9147

Email: awstcustserv@halldata.com Web: AviationWeek.com/awstcustomers