

## Waking up to harsh realities

WITH SPRING ENDING AND SUMMER AT hand, Washington is debating the future of human spaceflight, problems in the civil aviation arena, and the seemingly endless issue of government spending, deficits, and debt. After reaching a last-minute deal containing \$38.5 billion in cuts from 2010 funding levels, on April 15 Congress finally enacted a budget for FY11.

### Bolden testimony

NASA's handling of the human spaceflight program drew barbs from lawmakers when Administrator Charles Bolden testified on Capitol Hill on April 11.

Bolden told legislators his agency is attempting to comply with a congressional mandate that bars NASA from canceling contracts in the Constellation next-generation spaceflight program, which the Obama administration wants to terminate. Bolden said NASA can comply with legislation requiring it to develop a 'multipurpose crew vehicle' (MPCV) at reasonable cost by exploiting shuttle infrastructure. He said the Orion crew exploration vehicle (CEV)—part of Constellation—and the MPCV are similar, and that NASA can develop the capsule Congress wants under existing Orion contracts with Lockheed Martin. He cautioned, however, that the scope of work may have to be revised because

of lowered funding prospects.

Impatient with the pace of MPCV work, Sen. Kay Bailey Hutchison (R-Texas) told Bolden that President Obama "wanted Orion continued, and your staff and managers agree that Orion is the reference vehicle and easily falls within the scope of the authorization law that you have said you are following. Yet it doesn't seem that the contract modifications to achieve this result are happening."

Any delays with MPCV, Bolden said, are about money: "I will tell you that in any of the contracts that we have today, we cannot pay the amount of money that was contracted x-number of years ago. So there will be negotiations among us and all our contractors, because we have got to get our costs down." He added, "We may have to descope the vehicle in some manner," referring to potential changes in the configuration and capabilities of the MPCV.

In early 2010, Obama proposed canceling Constellation, including the then-planned version of the CEV being built by Lockheed Martin Space Systems of Denver. Hutchison asked Bolden whether he intends to proceed with the scaled-back Orion or, "is it just going to be strung out, so that eventually it just can't be revived?" Bolden replied that "the existing Orion contract, as a deep-space exploration vehicle, easily maps to the scope of what we call a multipurpose crew vehicle."

Though it is not clear that Congress and the executive branch will be able to agree on a federal budget for FY12, Hutchison told Bolden the \$1 billion in the administration's FY12 spending plan for NASA falls short of the \$1.4 billion lawmakers insist is necessary to field an operational MPCV by 2016. She pressed the administrator to seek more money next year for Orion—a prospect few in Washington view as realistic in today's constricted

and contentious budget climate.

Under the original plan for Orion, initial models were to carry astronauts to the ISS; later versions would take them to lunar orbit. In April 2010 Obama announced that Orion would be spared Constellation's fate, but only to be scaled back to serve as an emergency lifeboat at the space station—meaning it would launch without a crew. Since then, Congress has enacted the MPCV requirement into law. Bolden will now be under pressure to produce the lifeboat/MPCV without any increase in funding.

### Asleep at the FAA

Transportation Secretary Ray LaHood and FAA Administrator Randy Babbitt are conducting damage control—including a nationwide tour of control tower facilities by Babbitt—after eight separate incidents in which air traffic controllers were found sleeping on the job. In a ninth incident, a controller mishandled a landing by a C-40B carrying first lady Michelle Obama.

Although no one has been hurt in an aircraft mishap as a result of con-



Sen. Kay Bailey Hutchison



The Orion crew module ground test structure is inspected prior to integration with an encapsulating aeroshell. The NASA administrator believes work on the Orion CEV can be integrated with development of an MPCV.



FAA Administrator Randy Babbitt

trollers succumbing to drowsiness, professional associations and lawmakers say the FAA must make a greater effort to ensure that controllers are awake and alert.

With lawmakers looking over their shoulders, officials of the FAA and other agencies are confronting other civil aviation issues as well. Rep. John Mica (R-Fla.) is concerned that the FAA has missed a deadline to develop pilot identity documents that meet a standard set by Congress. In addition, an aerial mishap aboard a Southwest Airlines jet raised questions about government officials' monitoring of the structural condition of the nation's aging airliners.

Babbitt's whirlwind tour of FAA facilities to talk to employees about work practices was accompanied by an order that at least two controllers will be on duty at every facility whenever that facility is in operation. This brings an end to the practice of having a single controller at work during the midnight shift at 29 controlled airports around the country.

Said Babbitt, "We absolutely cannot and will not tolerate controllers sleeping on the job when they're supposed to be controlling airplanes. We're working with controllers to take a good hard look at some of the scheduling practices. Some of the things we've done will provide a better sleep opportunity, rest opportunities for the controllers, so that they can in fact arrive to work rested and ready to go to work."

In the incident involving the first lady, a C-40B (a military derivative of

the 737-800) was approaching for a landing at Joint Base Andrews outside Washington, D.C.—where air traffic control is provided by the FAA—when a controller noticed that the plane was following too closely behind a C-17 Globemaster III, a huge airlifter that can create blasts of wake turbulence. The controller ordered the C-40B to make a routine go-around, after which it landed without incident. The controller on duty was not a supervisor.

The agency has since changed its rules to require a supervisor on duty whenever the first lady or vice president is flying, a requirement already in effect when the president is flying.

Rep. Mica, who follows the FAA most closely, so far has not followed through on an earlier pledge to hold hearings about air traffic controller problems. However, he told reporters he is "miffed" about the executive branch's performance in introducing a new pilot ID card using embedded biometric data that Congress first mandated in 2004.

On April 14, in a rare snub of Congress, TSA officials declined to attend a hearing by Mica's Transportation and Infrastructure Committee, leaving the FAA unable to answer legislators' questions on progress, or lack of it, in producing secure pilot ID. "They are not building a good strong fuzzy relationship in working with us," Mica said of TSA. A symbolic empty chair for TSA director John Pistole left Peggy Gilligan, FAA associate administrator for aviation security, on her own and un-



Transportation Secretary Ray LaHood

able to tell lawmakers the status of stalled efforts to issue biometric IDs.

Mica says he might convene a joint hearing with the House Homeland Security Committee. The TSA comes under that department and would be likely to participate without lawmakers having to take the extreme step of issuing a subpoena.

All these issues were percolating when a 5-ft hole was ripped out of the roof of a Southwest Airlines Boeing 737-300 on April 1 en route from Phoenix to Sacramento. In a public gaffe, the FAA first called it "a purely random occurrence." That did not prevent several legislators from calling for a review of FAA policy on aging airliners. There were lingering memories of an April 1988 mishap in which the cabin roof was torn off an Aloha Airlines 737-200 and a flight attendant was swept to her death.

Despite serious efforts to upgrade and inspect airliners that might be vul-



On April 1 a 5-ft hole opened in the roof of a Southwest Airlines Boeing 737-300 on its way to Sacramento.

nerable, experts say structural cracks from metal fatigue remain a persistent problem on older planes.

The 737 is by far the most widely used airliner in the world. According to Boeing, over 6,000 have been built or ordered. Many flying today are recently built or even fresh out of the factory door. Boeing says, however, that some 570 older models may be at risk for the same kind of fuselage cracks that disrupted the Southwest flight. No one was injured in that incident, and the stress cracks were anticipated, but they were expected to occur only after the plane had made at least 50,000 flights. Acknowledging that a particular joint failed much earlier than expected on the Southwest flight, Boeing said checks were now advisable after just 30,000 flights. Solons on the Hill are expected to insist the FAA make this a requirement.



**Announcement of the New Book:**  
"Theoretical and Computational Aeroelasticity"  
by William P. Rodden, Ph.D.

The book is intended as a text for students and a basic reference for the aerospace industry, and is based on Dr Rodden's experience since 1948 in structures, structural dynamics, aerodynamics, and aeroelasticity, and teaching since 1958. He has been a consulting engineer for aerospace, civil engineering, insurance, and law firms throughout the United States, on a wide range of topics in applied mechanics, as well as investigation of aircraft accidents. Over the years he has taught several Aerospace Engineering courses in night school at USC and UCLA as well as the MSC.Nastran Aeroelasticity training course worldwide for The MacNeal-Schwendler Corp. He is the author of numerous journal articles and industrial reports. He holds B.S. and M.S. degrees in Civil Engineering from the University of California, Berkeley, and a Ph.D. in Engineering from the University of California, Los Angeles. He is also a Fellow of the American Institute of Aeronautics and Astronautics (AIAA). Publication is by Casa Graphics, Inc, in Burbank, CA, and Sales by Advance Book Exchange (AbeBooks.com). The book has 830 pages and the price is \$250 + S&H (+9.75% sales tax to California residents).

Contact: billrodden@aol.com

### Defense budget

Secretary of Defense Robert Gates has been telling lawmakers for months that the Pentagon will have to get by with fewer dollars in the near term, and that he "accepts" small defense reductions in the FY11 legislation. In the context of the president's April 13 announcement of a government-wide plan to reduce the federal deficit—the White House's response to larger cuts proposed by deficit hawks like Rep. Paul Ryan (R-Wisc.)—Gates says he is launching a "comprehensive review" to find \$400 billion in spending cuts by 2023. In the context of a target date eight years away, that is not a huge sum, but it may prove difficult to attain.

When Gates' acquisition chief Ashton Carter spoke to reporters about the secretary's cost-cutting program in an April 20 speech, he had little to offer that was new. He cited the Navy's Zumwalt-class destroyers and the Marine Corps' proposed new presidential helicopter and expeditionary fighting vehicle (EFV) as examples of high-tech systems the nation might well dispense with.

But the Zumwalt-class ships were already facing criticism, almost nothing is being spent currently on a new presidential helicopter, and Gates had already announced cancellation of the EFV months ago. Rep. Duncan Hunter (R-Calif.) and others say they will try to keep EFV alive, but most in the nation's capital believe Gates' decision to cancel the costly, long-delayed ship-to-shore Marine vehicle will stick.

The armed forces today are largely dependent on weapons that date to the 1970s, such as the M1 Abrams main battle tank, F-15C Eagle fighter, and Los Angeles-class submarine. Thus Obama, Gates, and other administration leaders will not easily find a big military program they can cut.

The F-35 Lightning II program has suffered from technical and fiscal concerns and has been restructured—meaning delayed—several times, but leaders in both parties acknowledge that it is needed too badly to be canceled outright. The Air Force's KC-46A air refueling tanker program will have a tab of over \$35 billion, but it has

been in gestation for a decade, and no one argues it is not needed.

The Navy littoral combat ship program may be costlier than necessary, because the service chose two designs and is developing them along parallel tracks, but experts say the technology is so advanced there is no other way to proceed. It is unclear whether in the current spending climate the Navy will be able to move ahead with its plan to order 20 of the ships, to be built between now and 2012.

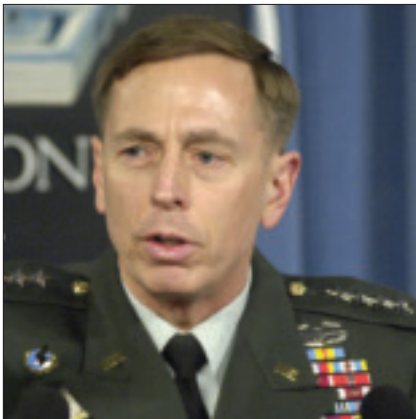
Defense spending makes up about one-fifth of the federal budget. Even



Capitol Hill's most ardent proponents of spending cuts have mostly steered clear of the Pentagon budget for fear of appearing unsupportive of U.S. troops. That may change this spring and summer if Congress follows the traditional pattern of debating the administration's proposed FY12 budget before FY12 actually arrives on Octo-



CIA Director Leon Panetta



Gen. David H. Petraeus

ber 1. A range of congressional voices, from Sen. John McCain (R-Ariz.) to Sen. John Kerry (D-Mass.), argue that the time has come to include the DOD in any new cuts—to a greater extent than Obama and Gates are proposing.

These cuts will not be Gates' problem much longer. As the secretary's planned retirement date nears, the president has nominated current CIA Director Leon Panetta to step into that office. Other nominees announced were Afghanistan commander Gen. David H. Petraeus as the new head of the CIA; Lt. Gen. John R. Allen, deputy chief of the Central Command, to take over in Afghanistan; and Ryan C. Crocker as ambassador to Afghanistan.

### Debt ceiling

With the battle over the current year's budget temporarily out of the way, Congress began to debate raising the statutory \$14.3-trillion federal debt ceiling in the near future.

Nothing in the Constitution limits the government's ability to borrow, but Congress established a ceiling in 1917 in response to the fiscal needs of the Great War. In fact, the overall federal debt has been increasing since 1835. Lawmakers will be searching for ways to rein in government excess without allowing the federal government to default. Despite much talk on both sides of the aisle, Congress is expected to raise the cap on government spending because, in the end, it really has very little choice.

**Robert F. Dorr**  
Robert.f.dorr@cox.net

## Events Calendar

### JUNE 2

Aerospace Today...and Tomorrow: An Executive Symposium, Williamsburg, Virginia.

**Contact: 703/264-7500**

### JUNE 5-8

Seventeenth AIAA/CEAS Aeroacoustics Conference, Portland, Oregon.

**Contact: 703/264-7500**

### JUNE 6-8

The Space Shuttle: An Engineering Milestone, Atlanta, Georgia.

**Contact: Cindy Pendley, cindy.pendley@ae.gatech.edu**

### JUNE 9-11

Fifth International Conference on Recent Advances in Space Technologies, Istanbul, Turkey.

**Contact: 703/264-7500**

### JUNE 13-17

International Conference on Aircraft and Engine Icing and Ground Deicing, Chicago, Illinois.

**Contact: Frank Bokulich, fbokulich@sae.org**

### JUNE 26-30

International Forum on Aeroelasticity and Structural Dynamics 2011, Paris, France.

**Contact: Anne Venables, secr.exec@aaaf.asso.fr**

### JUNE 27-30

Twenty-ninth AIAA Applied Aerodynamics Conference; 41st AIAA Fluid Dynamics Conference and Exhibit; 20th AIAA Computational Fluid Dynamics Conference; 42nd AIAA Thermophysics Conference; Sixth AIAA Theoretical Fluid Mechanics Conference; 42nd AIAA Plasmadynamics and Lasers Conference in conjunction with the 18th International Conference on MHD Energy Conversion; and Third AIAA Atmospheric and Space Environments Conference. Honolulu, Hawaii.

**Contact: 703/264-7500**

### JULY 17-21

Forty-first International Conference on Environmental Systems, Portland, Oregon.

**Contact: 703/264-7500**

### JULY 31-AUG. 3

Ninth Annual International Energy Conversion Engineering Conference, San Diego, California.

**Contact: 703/264-7500**

### JULY 31-AUG. 3

Forty-seventh AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, San Diego, California.

**Contact: 703/264-7500**

### JULY 31-AUG. 4

2011 AAS/AIAA Astrodynamics Specialist Conference, Girdwood, Alaska.

**Contact: William T. Cerven, 571/307-4208, william.t.cerven@aero.org**

### AUG. 8-11

AIAA Conferences on Guidance, Navigation, and Control; Atmospheric Flight Mechanics; and Modeling and Simulation Technologies. Portland, Oregon.

**Contact: 703/264-7500**