

# Frontiers

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## EYES ON THE MARKET

A look at Integrated Defense Systems' achievements in 2006—and opportunities for 2007 and beyond.

**EAGLES RALLY 20**  
F-15K finishes 2006 on high note

**NOW YOU SEE IT 26**  
Inside the 787's virtual rollout

**MUTUAL LEARNING 30**  
A look at the value of mentoring



## A PROVEN TEAM IN ANY WEATHER.

The partnership between the National Oceanic and Atmospheric Administration and Boeing has created many vital weather satellite systems. Today, Boeing is ready to build on this shared success with GOES-R, a system that will provide the most accurate weather and environmental forecasting ever available. The Boeing-led team brings the full value of its extensive GOES satellite experience to support the ongoing mission of NOAA.

**HARRIS**



**CARR**  
Astronautics  
[www.carrastro.com](http://www.carrastro.com)



*This new Integrated Defense Systems ad has been developed to support Boeing's efforts on GOES-R, the latest in a series of GOES satellites (Geostationary Operational Environmental Satellite System). The ad is designed to leverage Boeing's recent success with GOES-N to position the Boeing-led team as best qualified to execute GOES-R with the lowest risk. The ad will run in targeted publications including Space News, Aviation Week and American Meteorological Society Magazine.*



**ON THE COVER:** Quality inspector Kevin Klein checks an F-15K in final assembly in St. Louis.

**Photo by Ron Bookout**

# Frontiers



AUSTRALIAN GOVERNMENT DEPARTMENT OF DEFENCE PHOTO

**COVER  
STORY**

## LOOK AROUND 12

How did Integrated Defense Systems fare in 2006? What are its opportunities for 2007 and beyond? Jim Albaugh, IDS president and CEO, offers his views. Possible growth areas include international markets: The Royal Australian Air Force last year received its first C-17 (above).

**PAIRS WITH  
A PURPOSE**

**30** Mentoring is helping Boeing prepare its current and future leaders—and is part of the company's efforts to identify, attract, retain and develop top talent in an increasingly competitive labor market.

**FEATURE  
STORY**

## INTEGRATED DEFENSE SYSTEMS

### Challenges met

**20** The acceptance of the 18th F-15K fighter in December 2006 closed a remarkable year for the F-15K program. The year saw the program making 14 scheduled deliveries to Korea—six more than the original contract required—while overcoming a two-month delay following a tragic crash.

### A big team effort

**24** Boeing, working with subcontractors on two continents, recently turned over to NATO the first production configuration of 17 Airborne Warning and Control System aircraft to be upgraded under the Mid-Term Modernisation Programme. The enhancements will transform NATO AWACS into the premier airborne surveillance and command-and-control system aircraft in the world.

## COMMERCIAL AIRPLANES

### On a roll(out)

**26** At a December gathering of 787 employees, customers, partners and media at the Boeing facility in Everett, Wash., the 787 program revealed how it's using the latest technology to prove its engineering designs and manufacturing methods are sound. The event culminated in the first virtual rollout of a commercial jetliner.

### Powerful improvements

**25** Employees at the Boeing site in Everett, Wash., took actions that cut the facility's energy usage by 31 million kilowatt-hours over six years. Their efforts helped the facility obtain a prestigious certification for its environmental management system.

### Go (con)figure

**28** The 787 Dreamliner program is breaking new ground in the ways it supports customers. Among its latest achievements: Creating a new facility that gives customers a single place to make all configuration decisions for their Dreamliners. The 787 Dreamliner Gallery simplifies and streamlines the configuration processes for 787 customers.



**24**

A great working-together spirit between Boeing and subcontractors across two continents helped make possible an upgrade to NATO AWACS aircraft.

BOEING PHOTO

## COMPANYWIDE

### Friends and partners

**10** A recent agreement between the United States and India should boost the momentum of the United States–India strategic relationship—and greatly enhance the business climate between the two nations. This month's New and Notable section looks at what this agreement could mean for Boeing.

### 'That's why we're here'

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# New ads reflect Boeing brand, tell ‘Why we’re here’

**Jim McNerney**  
Chairman, president and CEO  
The Boeing Company

The Boeing brand is a promise we make to our customers—and the reputation we earn over time for how well we keep that promise.

That promise centers on industry leadership and best-in-class performance. It is about

- Our long-standing commitment to defining the future of aerospace.
- The leadership we exercise and the precision and care we take in delivering superior-quality products and customer service.
- The innovation, ingenuity and enterprising spirit we demonstrate when we build our customer-focused solutions.
- Our ability to deliver world-class financial performance that matches the quality of our people and our technology.

At a fundamental level, promises are made and kept by people, not companies. By this way of understanding, the Boeing brand is a reflection of the actions and words of Boeing employees. You and I shape Boeing’s reputation every day as we meet and work side-by-side with our customers—or provide support to those who do. We bring the Boeing brand to life when we engineer new products and assemble them, when we procure the parts and services essential to production, when we support our customers in the field, when we answer the phone or send an e-mail, or when we contribute to the communities where we live and work.

All of us have the potential to influence the Boeing brand hundreds of times each day. Customers and others who have a vested interest in the performance of the company will often hold a favorable opinion of Boeing based on something that one or more employees have done to deliver a timely response, ex-

**“All of us have the potential to influence the Boeing brand hundreds of times each day.”**

—Jim McNerney, chairman, president and CEO,  
The Boeing Company

cellent service or a breakthrough idea. On the other hand, the actions of even one employee (anyone who acts in a way that is inconsistent with our values and our commitment to act with integrity) can devalue and degrade the Boeing brand.

I firmly believe our customers buy our products and services based just as much on Boeing people as on the basis of cost and quality. Our business requires long-term relationships with our customers, who must be able to count on us in many ways for many years. Customers trust Boeing because they have learned to trust, first, the Boeing people they have worked with, and second, the products and services that Boeing employees have delivered.

In late January we launched a new advertising campaign that communicates the vital connection between the Boeing brand and its people (see story on Page 34). Boeing has a long-standing, well-deserved reputation for doing amazing things that make a difference in the world. This campaign spotlights the passion and commitment of our people, who make the imaginable real for our customers on a global basis. It is the story of our brand, told by Boeing employees.

The 16 employees presented in these four new television commercials put a human face on the Boeing brand. They speak with one voice for all 154,000 Boeing employees. They send an important message outside the company about the quality of the people that stand behind the amazing products and services we deliver to and for our customers. And they represent the vast potential we bring to bear when smart, motivated and energetic people work together to achieve what many could not imagine or otherwise think possible.

It is this shared commitment to excellence, aerospace leadership and our customers that binds us together as a company and distinguishes the Boeing brand. This commitment is at the heart of the promise we make to our customers. We express that commitment at the close of each commercial when we sign off with the phrase, *That’s why we’re here.* ■

ANDY GOODWIN PHOTO

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## Great job, part I

Just letting you know that I enjoy your articles about Boeing employees. The best job at Boeing article in your December 2006/January 2007 issue (Page 14) is my favorite so far. What made it special is that employees from all walks of Boeing were featured. I enjoyed reading about the folks who have worked on phenomenal inventions. But it was also fun to read about the people working at the “floor level.” They may not have invented space-age products, but they seem very satisfied in their jobs.

*Boeing Frontiers* is an excellent vehicle for the “floor” person to be heard. I regret not submitting an entry: I have the coolest job (I’m an embedded software engineer), and I wanted my boss and everyone—especially my kids—to see my picture in an official Boeing magazine.

—Lucy Bernhardt  
 St. Louis

## Great job, part II

I loved the article regarding the people who believe they have the best jobs at Boeing. However, I have everyone beat hands down.

As a flight attendant for Boeing Executive Flight Operations, every day is an adventure filled with new places and new faces. Never in my wildest dreams did I imagine having such an exciting job.

The best part is not only the people we fly, who are the best passengers any aviation department could wish for, but the people who make up the organization. There’s never a dull moment, and that’s what makes it great.

—Darla VanNoy  
 Gary, Indiana

**“There’s never a dull moment [at my job], and that’s what makes it great.”**

—Darla VanNoy, Gary, Ind.



tact one of the following chapters:

- Eastside Chapter (Eastside): 425-822-4884
- Heritage Chapter (Seattle): 206-544-5772
- Sno-King Chapter (Everett): 425-717-3755
- Olympic Chapter (Olympic Peninsula): 360-437-5052

You also can learn more by visiting our Web site at [www.bluebills.org](http://www.bluebills.org).

And if you’re a retiree who’s not in the Puget Sound area, here are two other Boeing retiree groups:

- St. Louis: SAGES. Call 636-928-1679.
- Mesa, Ariz.: Desert Sages. Call Don McGettigan, 480-964-9236.

—Penny Kahn  
 Kirkland, Wash.

## Corrections

An article on Nippon Cargo Airlines (December 2006/January 2007, Page 38) misstated the amount of freight carried and cities served by NCA in 2005. It also misstated the rankings of NCA and other airlines in industry surveys of annual cargo carried. In 2005, NCA carried 371,490 tons of freight to 19 cities. NCA is ranked 16th in the world on a freight-tonne kilometer basis, according to the International Air Transport Association. Also, according to *Air Cargo World* magazine, NCA ranked 21st, Japan Airlines 11th and All Nippon Airways 28th for 2005.

## Bluebills fill a need

After I retired from Boeing in March 2006, I looked for an easy way to stay in touch with my Boeing friends and continue to support my local community with some of those friends. I found the perfect solution: The Boeing Bluebills. This is a group of retired Boeing employees/spouses in the Puget Sound area of Washington state. The members socialize and volunteer as individuals and teams in their community.

In 2006 the Bluebills provided more than 85,000 hours of volunteer service. Some of the projects supported our own Boeing retirees who either had a physical or emotional need; other projects supported critical community needs.

If you’re a Boeing retiree in the Puget Sound region and would like to be a member of this great group—or if you have questions—please con-

## Letters guidelines

*Boeing Frontiers* provides its letters page for readers to state their opinions. The page is intended to encourage an exchange of ideas and information that stimulates dialogue on issues or events in the company or the aerospace industry.

The opinions may not necessarily reflect those of The Boeing Company. Letters must include name, organization and a telephone number for verification purposes. Letters may be edited for grammar, syntax and size.

# SNAPSHOT

**ANGLED AND AT ATTENTION** A line of Boeing-built C-17 Globemaster III's are parked on the tarmac in December at Charleston Air Force Base, S.C.

U.S. AIR FORCE PHOTO BY STAFF SGT. APRIL QUINTANILLA



## QUOTABLE

**B**oeing couldn't do anything wrong [in 2006]. But this year will be critical for them."

—Scott Hamilton, analyst for the aviation consultancy Leeham Co. in Issaquah, Wash., referring to the need for Boeing to execute its business programs in 2007, in the Jan. 11 *USA Today*

**I** say Airbus emerges from [its current issues] stronger than they've ever been, and we better be ready for it."

—Scott Carson, Commercial Airplanes president and CEO, at the Credit Suisse Aerospace and Defense Conference in New York, on Dec. 6

**I**t has the latest technology. It's full of electronic digital displays and automation rather than dials and switches."

—Royal Australian Air Force Wing Commander Linda Corbould, about the C-17 Globemaster III, in the Dec. 10 *Sydney Morning Herald*. The RAAF took delivery of its first C-17 in November.

## IAM PROMOTIONS

No promotions listed for periods ending Dec. 1, 8, 15, 22 and 29, and Jan. 5, 12 and 19.

## ETHICS QUESTIONS?

You can reach the Office of Ethics & Business Conduct at 1-888-970-7171; Mail Code: 14-14; Fax: 1-888-970-5330; TDD/TTY: 1-800-617-3384; e-mail: [ethicsLine.ethics@boeing.com](mailto:ethicsLine.ethics@boeing.com); Web site: <http://ethics.whq.boeing.com>



BOEING ARCHIVES PHOTO

Correspondent Bernard Eisman anchored CBS-TV coverage of the 1962 *Friendship 7* flight from the Project Mercury mock-up room at the McDonnell facility in St. Louis. His crew used some of the very first portable TV cameras. The full-size Mercury model shown here is now on display in Boeing's Prologue Room air and space history exhibit in St. Louis.

# Stars of the show

McDonnell employees helped explain mission of *Friendship 7* as it orbited Earth in 1962

By LARRY MERRITT

On Feb. 20, 1962—45 years ago this month—the eyes of the world were on John Glenn and his *Friendship 7* Mercury spacecraft as he became the first American to orbit the earth.

Glenn circled the globe three times, traveling 75,679 miles (121,794 kilometers) in four hours, 55 minutes and 23 seconds, before making a successful splashdown in the Atlantic Ocean some 800 miles (1,300 km) southeast of Bermuda.

Nobody was more excited about the flight than the men and women of the McDonnell Aircraft Corporation, now part of Boeing. They participated in an unprecedented live broadcast—and helped to give the U.S. space program a badly needed boost.

After two spectacular orbital flights by Russian cosmonauts in 1961, Glenn's flight put the United States back in the space race and restored NASA morale. Not only was

it a technological triumph, but millions of people were able to share in the adventure. The flight of *Friendship 7* was one of the first events to be televised live and uninterrupted. The coverage of the flight reached an estimated audience of more than 100 million in the United States and Canada.

A key part of the telecast involved live “remotes” originating from the McDonnell plant near St. Louis. The company designed and built Glenn's spacecraft, along with 19 others used in all the manned and unmanned phases of Project Mercury.

Television network correspondents interviewed engineers and factory workers about the features and operation of the spacecraft.



Launch of *Friendship 7* came at 9:47 a.m. on Feb. 20, 1962, from Pad 14 at Cape Canaveral, Fla. John Glenn later said that the liftoff felt slow and ponderous, “like an elephant trying to become a ballerina.”

For the McDonnell people, the flight represented a triumph. It had been only 37 months from contract award to this point, a technological effort of a magnitude not seen in the American aviation industry since the end of World War II in 1945.

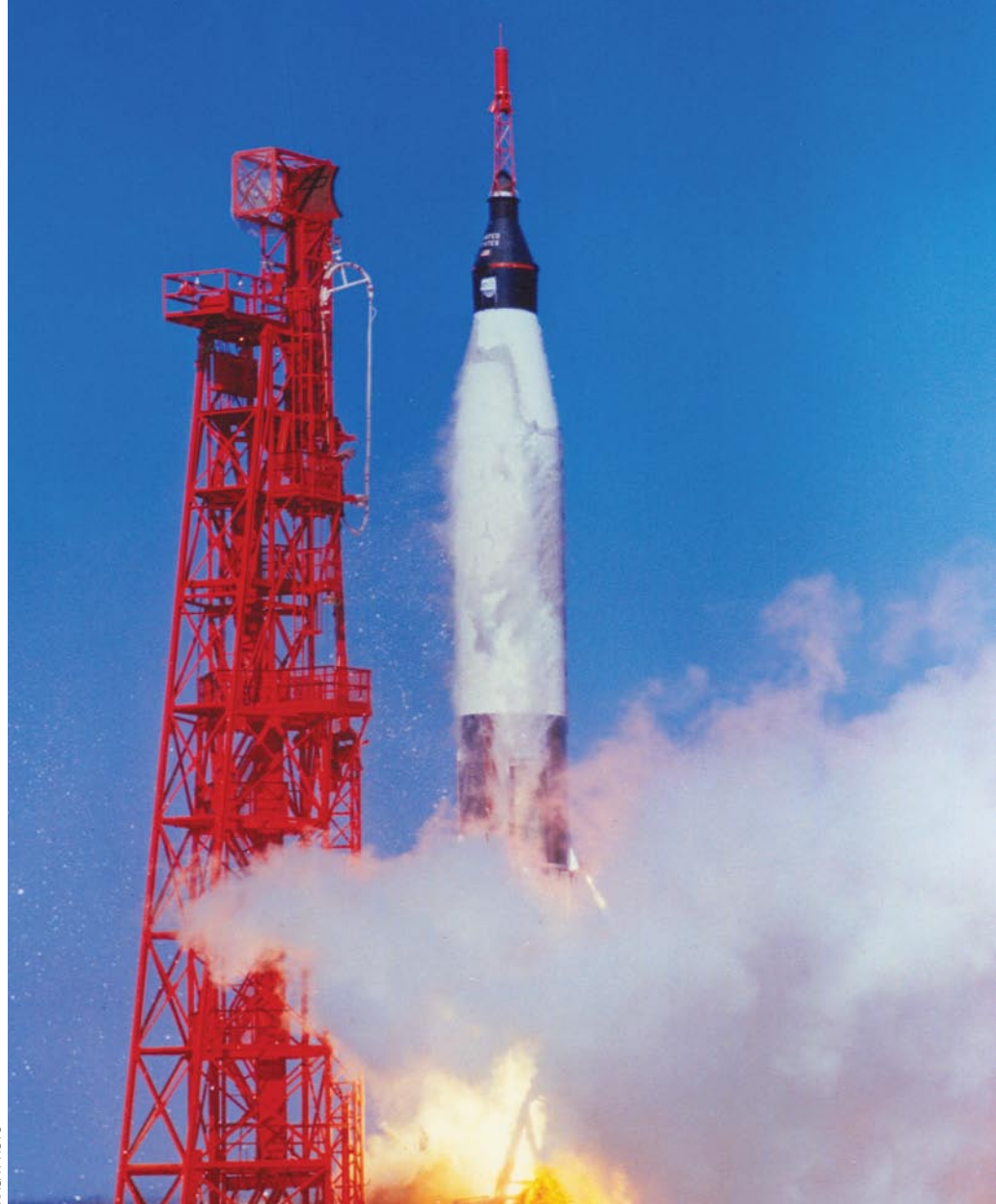
The McDonnell team had worked long hours under great pressure to solve all the new problems involved in launching a person into space and returning safely. The team had devised new manufacturing techniques needed to construct a spacecraft capable of withstanding the fiery reentry through the atmosphere. The two suborbital Mercury flights of astronauts Alan Shepard and Gus Grissom in 1961 were now seen as merely rehearsals. The real drama was getting into and out of orbit. With the launch of *Friendship 7*, the original goal of Project Mercury had been attained.

Viewers watched as workers cheered “go, go, go!” when Glenn’s spacecraft lifted off the launch pad. What the McDonnell people knew that the viewers didn’t was that Glenn’s spacecraft was number 13 off the production line. If they were superstitious, they didn’t reveal it to the TV audience. They were anxious but confident.

At key points during the flight, viewers were taken inside the Project Mercury mock-up room. There a full-size model of Glenn’s spacecraft, including a complete instrument panel, was used to help the audience understand what was happening during the mission.

The telecasts themselves involved some new technology. Most TV cameras at the time where large and cumbersome, mounted on a tripod dolly that literally weighed a ton. The CBS-TV crew used an experimental miniature camera called “PortaPak,” developed by Sony. The Japanese company sent three of its top engineers halfway around the world to ensure there were no problems with the new equipment. Microwave relay antennas were used to reflect the signals from the McDonnell plant near the airport some 13 miles (21 km) to a network relay point in downtown St. Louis.

All across North America, from the time Glenn rode the elevator to the top of the 10-story launch gantry until his splash-down and recovery, people watched the drama unfold. In New York City, a crowd



NASA PHOTO

John Glenn and the *Friendship 7* spacecraft are shown before his historic three-orbit flight, which took place 45 years ago this month. All Mercury spacecraft carried the number 7 in honor of the seven original astronauts. Glenn’s children suggested this spacecraft bear the name “Friendship.”

of more than 9,000 gathered in front of a huge television screen set up in the Grand Central Station railroad terminal. In Grand Rapids, Iowa, a judge halted the trial of a suspect charged with receiving a stolen television and had the main piece of evidence plugged in so everyone in the courtroom could watch the historic event.

Because millions were allowed to share in it, the flight of *Friendship 7* proved to be one of the great moments of history. ■

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BOEING ARCHIVES PHOTO



# A big-impact bill

## Why an agreement between India and the United States could be important for Boeing

In December, U.S. President George W. Bush signed into law a bill that could have a significant impact for Boeing.

The United States–India Peaceful Atomic Energy Cooperation Act opens the door to sharing U.S. nuclear technology with India for its civilian nuclear reactors. The agreement should boost the momentum of the United States–India strategic relationship—and greatly enhance the business climate between the two nations.

Stanley Roth, vice president for International Government Relations with Boeing International, offered *Boeing Frontiers* an analysis of how this bill could affect Boeing.

### Q: Why is India important to the United States and to Boeing?

**A:** Let me slightly amend the question by suggesting that India has long been important to both the United States and to Boeing. As the world’s most populous democracy and the largest country in South Asia, India has been important to U.S. national interests for decades. Similarly, on the commercial side, Commercial Airplanes has been doing business with a number of Indian airlines for decades. So it’s not as if either the United States or Boeing is just discovering India.

But two important changes have taken place that open up significant new opportunities for the United States and Boeing.

First, the decision taken by the Bush and [Indian Prime Minister Manmohan] Singh administrations to forge a strategic relationship between our two countries has put behind us the policy and ideological differences that had impeded closer cooperation.

With an exchange of state visits by President Bush and Prime Minister Singh,

as well as the passage of the civilian nuclear agreement, the relationship has now been put on a “win-win” path that holds exciting promise for the future.

From a Boeing perspective, one of the most relevant dimensions of this new strategic relationship is the removal of sanctions that had barred the sale of U.S. military equipment to the Indian government. To give a sense of the magnitude of the defense opportunity, I’d emphasize the statement from [Integrated Defense Systems President and CEO] Jim Albaugh during his December 2006 trip to India, that Boeing would bid on up to \$15 billion of Indian defense opportunities over the next decade, leading with multirole combat fighters, maritime aircraft and heavy-lift helicopters.

Second, the decision by the Indian government to adopt far-reaching economic reforms has led to an explosion of economic growth. The Confederation of Indian Industry estimates growth this fiscal year will reach a staggering 8.6 percent and forecasts only a slight decline for next year. You can’t travel to India now without being impressed by the economic dynamism, by the sense of more than a billion people on the move. The impact of this growth is certainly reflected in the commercial aviation sector. Boeing’s market forecast for India is 856 aircraft over the next 20 years valued at nearly \$73 billion. The recent delivery of the first of 68 Boeing airplanes ordered by Air India demonstrates this growth.

### Q: Why does Boeing support the United States–India Peaceful Atomic Energy Cooperation Act?

**A:** Boeing has actively supported the passage of this legislation, not because we have any economic stake in the sale of civilian nuclear equipment to India—we don’t, but rather because this agreement is, from an Indian perspective, the cornerstone of the new strategic relationship between our two countries.

### Q: Will the warming of relations between the United States and India have any impact on Boeing?

**A:** I’m very optimistic in this regard. Needless to say, whether it’s in the commercial or the defense sector, Boeing will face stiff competition from other companies in India. But a strong bilateral relationship helps ensure that Boeing is not at a disadvantage when it competes against non-American companies whose countries also have positive relationships with India.



CORBIS PHOTO

Shaking hands are U.S. President George W. Bush (left) and Indian Ambassador Raminder Jassal after the signing ceremony for the United States–India Peaceful Atomic Energy Cooperation Act. The agreement could lead the way to increased business for Boeing in India.

One final point. When you combine the improving United States–India relationship with the impressive, sustained economic growth in India, it seems clear that India has the potential to emerge as one of Boeing’s most important overseas customers and partners. It’s no accident one of the first countries Chairman, President and CEO Jim McNerney visited in a Boeing capacity was India; the same for Laurette Koellner when she became president of Boeing International. And why Jim Albaugh has made two visits. There’s no doubt in my mind that as Boeing looks to the future, it will be increasingly looking at India. ■

**Pact’s architect discusses effects**

For more perspective on the United States–India Peaceful Atomic Energy Cooperation Act, *Boeing Frontiers* talked to Nick Burns, U.S. Under Secretary of State and the key State Department architect of this agreement.

**Q: What will be the impact of this agreement on United States–India relations?**

**A:** The United States–India Civil Nuclear Cooperation Initiative, as advanced by the recent legislation, is the cornerstone of our growing strategic partnership with India. It will help make India one of our most valuable global partners and help make possible significant achievements in many other areas of cooperation. We will not fully realize this vision of partnership, however, unless the impediments associated with civil nuclear cooperation are resolved once and for all. This initiative will unlock the progress of our expanding relationship.

**Q: How will this relationship affect U.S. businesses?**

**A:** This initiative and the growing bilateral relationship are not simply government-to-government efforts. They are being crafted with the private sector firmly in mind.

We hope the warming of relations will break down some of the barriers that currently exist in India to outside private investment. India is in the midst of major economic reforms. With these reforms, the climate in India is becoming much more conducive to foreign direct investment. We are already seeing the fruits of this through the United States–India CEO Forum. The recommendations being made by major corporations of both India and the United States are actively being implemented by both governments to ensure that economic engagement is as robust as it possibly can be.

# Now that’s (a) grand!

## In 2006, Boeing topped 1,000 net jetliner orders for the second consecutive year

2006 marked a second straight record-setting year for Boeing Commercial Airplanes. The business unit tallied 1,044 net commercial airplane orders for the year, topping its previous single-year record of 1,002 net orders, set in 2005.

“The strong orders for the past two years are a validation of our strategy of focusing on our customers, simplifying our product and services offerings and transforming our production system,” said Commercial Airplanes President and CEO Scott Carson. “We’re bringing the right products and services to the market at the right time, and we remain intensely focused on our customers, on delivering on our promises and on addressing the needs of the marketplace.”

Here’s a look inside the 2006 order book’s numbers.



**729**

Net orders recorded for the Boeing Next-Generation 737 airplane. For the second consecutive year, the 737 program set a record for most orders in a year; its previous record was 569 in 2005.

**157**

Net orders for the 787 Dreamliner program, including a December order from Mumbai-based Jet Airways for 10 787-8s. Through 2006, 38 airlines have logged 471 orders and commitments for the 787 since its launch in April 2004, making the Dreamliner the most successful commercial airplane launch in history.



**76**

Number of different customers that ordered Boeing airplanes, including passenger airlines, cargo carriers, leasing companies and private customers.

**72**

Net orders for the 747. Among the high-lights: Lufthansa became the first airline to order the passenger version of the 747-8 Intercontinental jetliners, with its order for 20 airplanes in December. The 2006 tally marked the highest total for the 747 program since 1990 and is the fifth-highest in the history of the program.



**25**

Number of airplanes involved in an order Korean Air and Boeing finalized in late December. The order includes 10 777-300ERs, five 747-8 Freighters, five 777 Freighters and five Next-Generation 737s.



**AEW&C**

Under a \$1.59 billion contract awarded in November, Boeing will provide four 737 Airborne Early Warning & Control systems for the Republic of Korea's EX program. The system gives Korea powerful capability for airborne surveillance, communications and battle management.

# Emerging markets in sight



## Jim Albaugh

Executive Vice President, Boeing  
President and CEO, Integrated Defense Systems

BOB FERGUSON PHOTO

### IDS' Jim Albaugh reflects on 2006, discusses outlook for '07 and beyond

From his Washington, D.C., office, Jim Albaugh quite literally never loses sight of the Pentagon, his primary customer. As president and CEO of Integrated Defense Systems, Albaugh knows he must consider several significant factors that will shape the defense industry in the coming years: forecasts of a flattening U.S. defense budget, continuing U.S. military involvement in Iraq, and new Pentagon and congressional leadership.

*Boeing Frontiers* recently spoke with Albaugh about how IDS fared in 2006 and what's in store for 2007 and beyond. "What excites me more than anything is what the collective knowledge of this company is capable of," he said.

#### Q: IDS marked the first anniversary of a major reorganization in January. How has the reorganization measured up to your expectations? And how well is IDS positioned as a result to move forward?

A: I'm very pleased with the results of the reorganization. First, I think you organize around where your customers are going. As our customer moved toward a joint-portfolio management approach to capabilities, we needed to do the same. By having all of our domain knowledge and intellectual property in a more focused organization, it has allowed us to do several key things: improve the execution on programs, reduce organizational complexity and improve competitiveness. The result has been wins on some significant programs for IDS, including the Secure Border Initiative network (SBI-net) and Combat Search and Rescue (HH-47 CSAR) programs. As our customer moves more towards jointness, interoperability and capabilities, we are well positioned to support them.

#### Q: What IDS achievement were you proudest of in 2006?

A: There were so many good things that happened. Certainly all the production programs executed in a terrific fashion. Space programs that a year ago I would have said were troubled were fixed, and we regained the confidence of the customer. Programs like Family of Advanced Beyond line-of-sight Terminals, Joint Tactical Radio System and Global Positioning System—we did a great job there. In Missile Defense, we had three successful launches last year, we regained the confidence of the customer, and we earned one of our highest award fees from the Missile Defense Agency. And we had flawless execution in the launches of satellites and the space shuttle. I can almost go down program by program and, with just a couple of exceptions, we had superb performance.

I was also very pleased with some of the captures we had: the SBI-net win, where I think we really understood what the customer wanted; and the same thing on the HH-47 CSAR. On C-17, we captured 10 additional orders from the U.S. Air Force along with international orders and commitments, which will likely extend the C-17 production line into mid 2009. This is very significant. And the AEW&C (Airborne Early Warning & Control) win that we had in Korea was something that pleased me very much.

#### Q: If you were to name any one disappointment in 2006, what was it, and what steps have been taken to ensure IDS has moved beyond it in 2007?

A: Certainly the biggest disappointment in 2006 had to do with the AEW&C program. The good news is that the new organization structure helped identify the issues and, as a result, we are fixing the problems. Regardless, it was disappointing that a problem of this magnitude hadn't surfaced earlier.

If I step back and ask myself why, it really comes down to leadership at all levels of the organization. It comes down to making sure that we're open and honest with ourselves about how programs are performing; that we have solid, executable plans in place; and that we have program-management best practices not just in words but in actual practice that will give us the early indications that we have issues on programs.

In terms of what we've done as a result, we have reconfigured how we do our nonadvocate reviews. Steve Goo (vice president,

# Looking back to see the future

In 2006, Integrated Defense Systems recorded numerous contract wins and successful program executions. These achievements—and many other successes across Advanced Systems, Network & Space Systems, Precision Engagement & Mobility Systems, and Support Systems—position IDS to pursue opportunities for future growth:

## IDS contract wins in 2006

**C-17 Globemaster III**—In September, the U.S. Congress added \$2.1 billion for 10 additional C-17 Globemaster IIIs for the U.S. Air Force. These, along with recently announced international C-17 orders and commitments, likely have extended the C-17 production line into mid 2009.

**SBlnet**—In September, the U.S. Department of Homeland Security awarded Boeing a contract—potentially valued at up to \$7.6 billion—for the technology component of its Secure Border Initiative effort. SBlnet will significantly improve the availability of information and tools to Border Patrol agents so they can better detect, identify, classify and resolve illegal activity along the northern and southern United States borders.

**HH-47 CSAR**—In November, the U.S. Air Force awarded Boeing Rotorcraft the Combat Search and Rescue aircraft contract—potentially valued at up to \$13 billion—to build 141 HH-47 CSAR helicopters.

**AEW&C**—In November, Boeing signed a \$1.59 billion contract to provide four 737 Airborne Early Warning and Control systems for the Republic of Korea's EX program. The 737 AEW&C gives Korea powerful capability for airborne surveillance, communications and battle management.

## Successful IDS execution in 2006

**FCS review**—Future Combat Systems passed its Initial Preliminary Design Review in August, achieving 100 percent of performance, cost and schedule criteria. The completion of the review marked the beginning of the build, test, integrate phase of the program.


**Missile Defense tests**—In June, Boeing, industry teammates and the U.S. Missile Defense Agency successfully conducted an Airborne Laser ground test, demonstrating the weapon's ability to track and target a ballistic missile. In October, the Patriot Advanced Capability-3 missile successfully intercepted its target during a flight test. Boeing designs and builds the PAC-3 seeker, which guides the missile toward an enemy target for destruction on impact. In September, Boeing, again working with industry teammates and the U.S. Missile Defense Agency, successfully completed a flight test of the Ground-based Midcourse Defense system. For the first time, an operationally configured interceptor was fired from an operational GMD site, tracked a ballistic missile, and intercepted and destroyed the warhead.

**EA-18G Growler first flight**—In August, the U.S. Navy's newest and the world's most advanced electronic attack aircraft, the Boeing-built EA-18G Growler, completed its first flight. The plane enables warfighters to perform an array of advanced electronic attack missions, operating from either the deck of an aircraft carrier or land-based airfields.

**Upgraded C-130 first flight**—In November, a U.S. Air Force C-130 aircraft made its first flight following upgrades Boeing performed under the C-130 Avionics Modernization Program. Boeing is upgrading more than 400 of these military transport aircraft to common avionics.

MICHAEL GAIL PHOTO

GMD



Boeing, working with industry teammates and the U.S. Missile Defense Agency, successfully completed a flight test of the Ground-based Midcourse Defense system. For the first time, an operationally configured interceptor was fired from an operational GMD site, tracked a ballistic missile, and intercepted and destroyed the warhead.

Program Management and Business Excellence) and his organization are much more involved, not just in looking at technical issues, but also considering programmatic and leadership issues. We have done a lot of soul searching and conducted reviews, and strongly believe we don't have any of those kinds of issues in the other programs in our portfolio. Not that we're not going to have problems on development programs. We do the hard stuff at Boeing, and we know we can't predict all the unknowns. But we must have good processes in place that will allow us to see issues early on so that we can bring all the resources of Boeing to address concerns.

### Q: Keeping in mind the challenges of the defense budget, the continuing war in Iraq, changes in leadership at the Pentagon—what does all of this mean to IDS in 2007 and over the next few years?

**A:** The Department of Defense (DOD) budget, including supplemental spending, is one that we think will moderate over the next five years. In fact, in the long-range planning that we put together, we think that the actual budget will decline at a rate of about 1 percent a year compounded annually.

So, again what we have to do is keep the programs that we won sold—and that means execution. We need to provide low-risk, best-value proposals to our customers on new programs, and make very



## EA-18G Growler

The EA-18G Growler completed its first flight in August. The plane enables warfighters to perform an array of advanced electronic attack missions, operating from either the deck of an aircraft carrier or land-based airfields.

sure that what we propose is relevant near-term to the warfighter. Those are the things we have to focus on in this new budget environment that we're facing. The good news is, based on our Long-Range Business Plan, despite the fact that in real dollars the procurement opportunities go down, we expect to grow at a compound annual growth rate of about 5 percent over the next five years.

### **Q: Looking ahead at 2007 and beyond, where do you see the greatest potential for growth?**

**A:** There are four markets that we need to focus on that we believe will provide solid growth opportunities.

The first is international. There are more international opportunities today than I have seen in the last decade in places like Asia, Europe and Canada. As a result, we've put together international strategies that leverage the entire Boeing enterprise that I think will set us apart from the competition.

The second area is services. As the airplanes we have provided to our customers continue to stay in service, and as new platforms like V-22, AEW&C and P-8 are deployed, we'll have opportunities to propose performance-based logistics solutions. That will allow Support Services to grow business by close to a double-digit compound annual growth rate.

The third area is moving into adjacencies—areas that take the capabilities we've developed supporting our DOD and NASA cus-

tomers—and taking those to new markets. A great example of that is SBInet with the Department of Homeland Security.

The fourth area is continuing to add value to products in the field by network-enabling them, making them more capable and increasing their useful life. We're doing that now in support of the Army—integrating into the current forces some of the technologies that we've developed as part of Future Combat Systems.

### **Q: How do you strike a balance when our competitors are often our partners? How can we compete with them when at times we also partner with them?**

**A:** We work in a very different environment than most industries. We compete with the likes of Lockheed Martin, Raytheon and Northrop Grumman, and they're also our trusted partners on many programs. The reason for that is that there's no company in the defense industry that has all of the capabilities to support the integrated programs or the systems-of-systems kinds of programs that our customer requires. I have the utmost respect for all of our partners/competitors. We have great relationships with all of them, and they trust us. That trust is based on the ethics and integrity of The Boeing Company—doing things right from a conflict-of-interest standpoint, doing things right from a proprietary-document standpoint, being trusted not just as a company but as individuals by partners/competitors. What will set us apart is our



BOEING GRAPHIC

# GPS IIF

The Global Positioning System IIF satellites will upgrade the original GPS worldwide timing and navigation system, which utilizes 24 satellites positioned in orbit approximately 12,000 miles (19,300 kilometers) above the Earth's surface.

ability to pull together the collective thoughts of all 73,000 people in IDS better than the competition. If we can do that, we will satisfy our customer.

The other thing we have to do is make sure that we are as cost-competitive as we can be, which means good, robust Lean processes and working only on those things that add value to our customer. If we can do that, if we can be more cost-effective than the competition, if we can pull all the knowledge that we have as an integrated organization to bear on a program for our customer—we'll win.

And there are a number of important competitions coming up in the next year or two, and I will tell you that I want to win them.

## Q: How do you see the four companywide growth and productivity initiatives translating into work that's being done at IDS?

A: We have a customer today who is trying to do more for less. In the '90s, when we got a request for proposal, what our customer was looking for was innovation. Today, what our customer is looking for is low-risk, time-certain deployment of capability, and also lower costs. The initiatives will help us provide our customer with the lower-cost solution. They should also allow us to do our work more effectively and efficiently, which should help with that time-certain capability deployment.

We've identified significant cost reductions over the next several years that you'll see reflected in our guidance and in our actual performance. Some of that will translate into improved profit, but more importantly, it will all translate into improving our competitiveness, and it will make cost a strategic advantage for IDS—which is something that I don't think has been an advantage in the past.

## Q: What do you want employees to focus on in 2007? And are there some specific, tangible actions that you think they can take?

A: It begins and ends with the customer. When people ask me what they can do to ensure that they have jobs now and in the future, I always give them the same answer: Satisfy the customer better than the competition, and the customer will come back time and time again. More specifically, employee involvement is all about people who understand processes, making those processes better: What processes are you using? Are you using common processes,

*Continued on Page 18*

# HH-47 CSAR

The U.S. Air Force awarded Boeing a contract in November—potentially valued at up to \$13 billion—to build 141 HH-47 Combat Search and Rescue helicopters.



BOEING GRAPHIC



**“In the current environment, there are fewer large new competitive procurements out there—and we need to win.”**

—Chris Raymond, vice president of Business Development for Integrated Defense Systems

BOB FERGUSON PHOTO

## Prospects abound

### Meet IDS' business development leader

Chris Raymond, vice president of Business Development for Integrated Defense Systems, is responsible for the development, integration and implementation of IDS customer and business strategies. Following are Raymond's thoughts on domestic and international markets and the overall prospects for IDS.

#### On the U.S. government and domestic market:

“As the domestic budget faces increasing pressures, our U.S. customer's focus will shift to operations and support. Our Support Systems team is well-positioned to take advantage of that trend. In the current environment, there are also fewer large new competitive procurements out there—programs like tankers, TSAT (Transformational Communications Satellite) and others in our space business—and we need to win. In addition, our recent SBLnet (Secure Border Initiative network) win represents a deliberate move into an important adjacent market.”

#### On international opportunities:

“Let's look at India as an example. Certainly, the U.S. policy toward India and the emergence of the nuclear treaty opened up the environment for improved military relations (see story on Page 10). We're putting a lot of enterprise emphasis on India—not just at the IDS level, but also by working together with Commercial Airplanes, Boeing International, Shared

Services and Phantom Works. And, we're moving beyond our traditional means of selling internationally by approaching the emerging opportunities there in a way that truly leverages the best of Boeing.

“Prosperity tied primarily to higher oil prices has enabled the Middle East region to experience an upturn in the investment cycle. We see opportunities there across a broad spectrum of products and services. Applying the lessons we're learning in India will allow us to capture more opportunities as one enterprise.”

#### On growth in new and adjacent markets:

“The Combat Search and Rescue (HH-47 CSAR) win, to some degree, is an example of how we've moved into an adjacent market—the search-and-rescue rotorcraft market—which is a testament to the team really understanding what the customer values and requires. So, there are areas where we're moving some of our existing products into agencies by keeping them relevant to our customers' missions.

“The Homeland Security market, both domestically and internationally, is an area where we can apply our program-management and large-scale integration experience—as well as our supplier-management competencies, as we are now starting to demonstrate with SBLnet.

“The international market also represents areas for growth. When I say international, I mean more than just selling a product in another country. Our investment in Alsalam in Saudi Arabia, or the equity investment we made last year in Huneed Technologies, a Korean electronics company, are areas where we're taking more than a traditional position in offshore markets.”

Continued from Page 16

and are those processes as effective as they can be? Are you applying the Lean tools to streamline and improve those processes?

Another question that I think we all need to ask is: In the time that we spend at work, is everything we're doing adding value to the customer? It should be. If we're doing things that don't add value, we shouldn't do them.

**Q: What are you most excited about at IDS?**

**A:** It's very difficult for me to say there's any one program that excites me more than another. They're all very important and challenging, and they all contribute to U.S. security or to the space-exploration efforts of the U.S. I think what excites me more than anything is what the collective knowledge of this company is capable of. I don't think there is any other company that can do the hard things that we do, whether that's putting a person into space, changing the way people communicate, enabling our customer to execute their responsibilities to safeguard the United States, or designing a new way of collecting intelligence information. What we do is so complex that I'm not sure that there's any other company in the world that can do what we do. And that's what excites me about Boeing. ■

**U.S. Air Force Airman 1st Class Nicholas Shoenhair marshals a KC-10 Extender to its parking spot at a deployed location in Southwest Asia. In 2006, Boeing Support Systems with its U.S. Air Force customer commemorated the 25th anniversary of the KC-10 refueling aircraft, along with the 50th anniversary of the KC-135 Stratotanker. Boeing employees provide a multitude of services for the Air Force's KC-10A fleet including ground-support equipment maintenance—as well as parts and field service representatives who supply technical expertise and training.**

**KC-10**



U.S. AIR FORCE PHOTO BY STAFF SGT. JASON WEBB

ELAINE BRABANT PHOTO

KELLIE MASTERS/TYBURN CORP. PHOTO

# 'Opportunities and people'

Boeing Frontiers asked some IDS employees: What is it that excites you about working for Boeing? Here's what they had to say.



DAVE MARTIN PHOTO

**Cecilia Perez**  
Business Development, T-45 program  
St. Louis

We're in a very exciting and challenging period for the T-45. We're going to deliver the 200th aircraft in 2007, and we're actively pursuing potential sales to several international customers. My job allows me to work with a lot of diverse people, travel to countries I never thought to visit, and represent IDS and Boeing. It's very satisfying, if a little intimidating at times, to know that the future of this program rests, in part, in my hands.



**Steve Nishikawa**  
Specialist, IDS program management  
Kent, Wash.

IDS offers something for everyone. From air and space vehicles to state-of-the-art simulation and cutting-edge research and development, IDS has diverse products and services. We work on complex components as well as large-scale-integration programs such as Future Combat Systems.



**Kristine Lim**  
Structural analysis engineer,  
Airborne Laser program  
Edwards Air Force Base, Calif.

The Airborne Laser program is just one of many exciting programs and opportunities within IDS. The technology is new and complex, and the team includes multiple companies with diverse backgrounds. The work is challenging and stressful at times; the rewards, however, are tremendous. When first light was achieved at the SIL (Systems Integration Lab), it proved we could do what many thought was unachievable.



JAROD CANTU PHOTO

**Mark Shelly**

**Associate Technical Fellow, Aerial Refueling and Fuel Systems  
Wichita, Kan.**

When I started working for Boeing on the KC-135 and the B-52, I found my dream working in aerial refueling. I now have a son flying in the U.S. Air Force, and part of his mission will require aerial refueling. Nothing motivates me more to make aerial refueling as safe as possible than the thought of my son on the receiving end of a Boeing tanker.



RICHARD FAU PHOTO

**Bridget Davenport**

**Supply chain procurement agent  
St. Louis**

In Training Systems, I have the opportunity to make a difference in our military as well as helping foreign customers meet their needs. And I know that even beyond my current assignment, IDS provides a wealth of other opportunities for my personal and professional development.



MICHAEL GAIL PHOTO

**Chris Harlambakis**

**Business Development lead, Family of Advanced Beyond line-of-sight Terminals & Integrated Command and Control  
Anaheim, Calif.**

Three things excite me about working within Integrated Defense Systems: environment, opportunity and people. Boeing has reinvented itself in providing an environment to grow wherever one is located, whatever one's skills or aspira-

tions. The organization also provides ample opportunities for employees because of its broad involvement in government, civil and commercial business. Most important is the people aspect of working at IDS. Boeing attracts the best of the best; and in turn the environment and abundant opportunities at Boeing bring out the best in people.



JOE OLMOS PHOTO

**Wendy Leung**

**Embedded software engineer  
Huntington Beach, Calif.**

What excites me most about working for IDS? It's the excitement of working on big projects that will have a tremendous impact on society. I know that my work is valued and understand how it plays a role in the project. This gives me the feeling my work will create benefits to people and the overall society, in due time, since I realize many IDS projects

take years to complete. I have just finished my assignment for Advanced Systems Orbital Express, and boy, when I first learned of the potential impact of this program, it was motivating to me to make sure it gets completed successfully.



JAROD CANTU PHOTO

**Tiffany Harrison**

**Special Air Mission Finance Manager  
Wichita, Kan.**

I am constantly excited about the latest advanced concepts, product-support services and cost-effective mission readiness that IDS is able to provide to our customers. I wholeheartedly believe that IDS' greatest competitive advantage is its people. I am motivated daily by the passionate and intelligent leaders and nonleaders I have the honor to work with.



The first two F-15Ks delivered to Korea fly over the Pacific Ocean on their way to Guam before making the final leg of the 8,600-mile journey to Daegu Air Base in South Korea.

KEVIN FLYNN PHOTO

# Year of the Eagle

## F-15K recovers strongly from midyear setback

By CHRIS HADDOX

As easily as he can recall his children's birthdays, Steve Winkler can rattle off milestones associated with the F-15K, the all-weather aerial combat tactical fighter being built by Boeing for the Republic of Korea. F-15K flight

evaluations began Oct. 2, 2000. Korea selected the F-15K as its F-X fighter on April 19, 2002. The first F-15K was delivered to Korea on Oct. 10, 2005.

For Winkler, current F-15 production programs director and former F-15K program manager, the date Dec. 19, 2006, when the 18th F-15K was accepted in Korea, is the most memorable. Not because it's the most recent, but because it closed a remarkable year. It was a year highlighted by meeting the 14 scheduled deliveries (six more than the original contract required) to

Korea, while overcoming a two-month delay following the tragic June 2006 crash of an F-15K that killed two Korean pilots.

"To say it was a challenge would be an understatement," Winkler said. "Getting 14 aircraft to Korea even without a two-month delay was daunting enough, because that's the most we've delivered in one year since the late 1990s. It took many extra efforts and personal sacrifices to pull it off, but the whole team came together and made it happen. We learned a lot during this experience, and now the program

**Strike Eagle reaching its stride**

The F-15K is in full production for the Republic of Korea Air Force, and the F-15SG for Singapore is in the initial phases of production. But they aren't the only F-15s making news.

In September, the F-15E Strike Eagle became the first aircraft to carry the Small Diameter Bomb (SDB) into combat. The Strike Eagle now has nine smart-attack-weapon stations, allowing it to carry up to 28 SDBs or seven Joint Direct Attack Munitions.

"The Strike Eagle's unique ability to carry an array of precision weapons a long way and then remain on station for hours in hostile territory makes it the jet of choice for planners and warfighters in the global war on terror," said Bob Martyn, with F-15 business development for Israel and Saudi Arabia and an F-15 Weapons Officer with the Missouri Air National Guard.

Deploying the SDB is just the latest enhancement to the venerable aircraft to help maintain its title as the world's leading multirole fighter.

The U.S. Air Force is pursuing a modernization program for the Strike Eagle through programs such as high-bandwidth data links, the Active Electronically Scanned Array radar, digital Radar Warning Receiver, and the Joint Helmet Mounted Cueing System

A new Advanced Display Core Processor currently is being introduced to the fleet. The ADCP supports the continued growth in precision-weapon delivery and continued expansion of network-centric warfare capabilities. The F-15E also has demonstrated advanced network and targeting technologies, wide-band data link/IP networks, and precision image registration. That's resulted in the F-15 Integrated Product Team creating an evolutionary upgrade of the architecture for 2012 and beyond.

Equipped with a Fighter Data Link terminal, which connects to the military's Link 16 network (a secure, high-capacity, jam-resistant data link for all U.S. military forces), the F-15E has been the Air Force's leader in developing network tactics and aircrew interface network operations. The newest

software capability release (in the ADCP) includes receipt of imagery through Link 16.

From its first flight in 1986 to its most recent flight to support the global war on terror, the Strike Eagle has outperformed every fighter aircraft on the battlefield. How? "Through continuous improvement of an already outstanding multirole fighter," said Dick Banholzer, director, Business Development, Fighters and Weapons. "The Strike Eagle best satisfies the warfighters' needs when it comes to range, persistence, payload, survivability and rapid response."

In December 2005, Singapore selected the F-15SG, the most advanced Strike Eagle to date. It will receive the first of up to 20 aircraft in 2009.

"The Strike Eagle and its derivatives are the premier multirole fighters in the world, and they will remain the best for decades to come," Banholzer said. "You don't do that by resting on your laurels and relying on your reputation. That is not our plan."

—Chris Haddox

is well-established to continue to meet the customer's expectations with on-time, high-quality jets."

At the time of the crash, four F-15Ks had been delivered to Korea, all in 2005. Ironically, the first two deliveries of 2006 arrived on the same day as the crash.

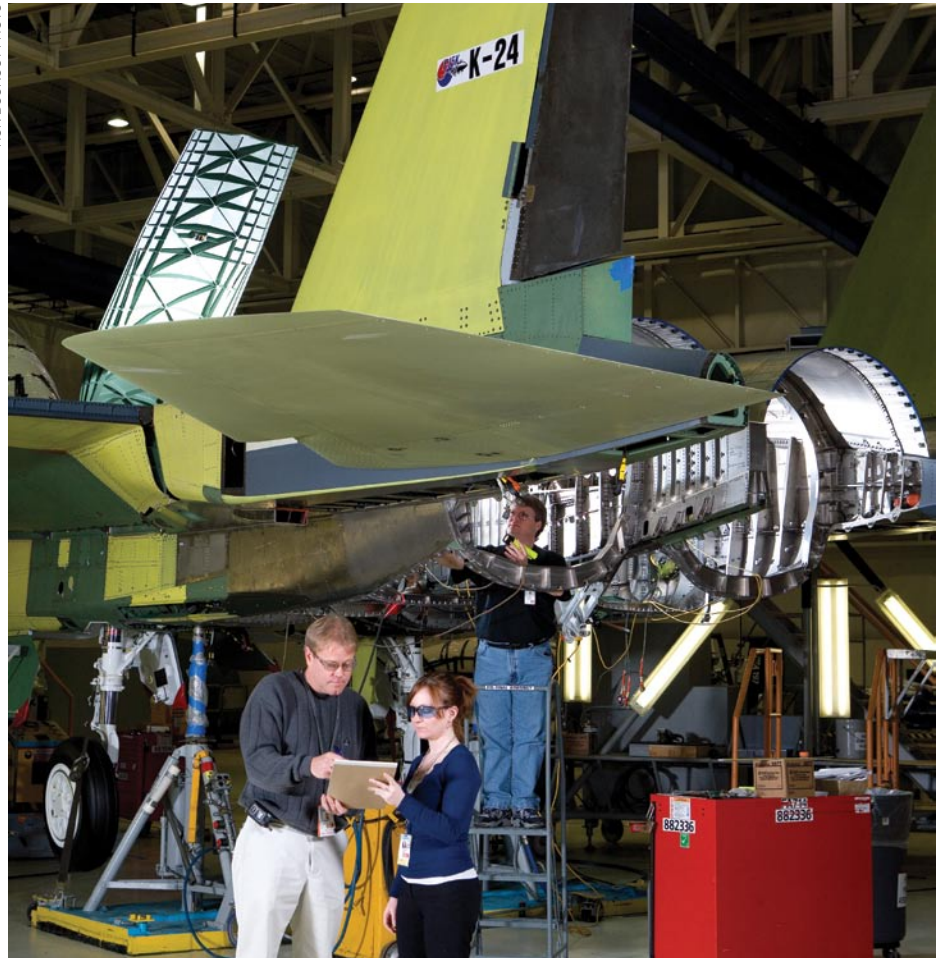
"We were shocked when we heard the news of the crash," recalled Winkler. "The pilots were like members of our family, especially Lt. Col. Kim Sung-dae, whom we knew very well from the time he spent training in St. Louis" (where the F-15 is produced).

Immediately after the crash, Winkler flew to Korea to meet with Republic of Korea Air Force (ROKAF) officials. The crash was a major media story in Korea, and Winkler became the face of Boeing, meeting with reporters at Seoul's Incheon International Airport soon after landing.

"It was my duty to represent Boeing and the F-15 program during this time of crisis and to show the ROKAF and the Korean people that we were committed to fully supporting the investigation," he said.

**Bobby Deadmond (from left), F-15 final assembly foreman, and quality engineer Lauren Bay discuss the progress on an F-15K in final assembly in St. Louis. In the background, quality inspector Kevin Klein makes a final inspection.**

RON BOOKOUT PHOTO



### A seat with a view

When Ed Wilson flies to Korea, he gets the best seat on the airplane.

It's not that he has a lot of frequent flier miles. Instead, Wilson is one of Boeing's F-15K test pilots responsible for delivering the newest Eagle from St. Louis to its final destination at Daegu Air Base in South Korea.

"It's better than first class," said Wilson of piloting the F-15K on this long-haul flight. "I've got a window seat on every flight, the view is always spectacular, the box lunch isn't bad, and I'm in total control of the airplane."

But flying the F-15K to Korea may be the easiest part of Wilson's job. Prior to every delivery flight, Wilson and the other F-15 pilots and weapon systems officers making the trip put the aircraft through multiple tests in St. Louis and do flight planning with the U.S. Air Force on the route, air-refueling plan and emergency procedures. There's also extensive paperwork to be completed to ensure the aircraft and the pilots have all the required export and quality documents on board as they make the 8,600-mile (13,800-kilometer) trip.

Wilson led the first delivery flight to Korea in October 2005 and has made five of the six F-15K delivery flights since then. He described every minute in the cockpit as an "event." Weather is always a challenge, as is fatigue. On a typical ferry flight, Wilson and his team depart St. Louis for an 8.5-hour, nonstop flight to Hickam Air Force Base, Hawaii. After a day of rest for the crew, the aircraft take off on a 7.5-hour flight to Andersen Air Force Base, Guam—where the only view out of the cockpit is a two-mile stretch of land called Wake Island, and a lot of water. The following day the F-15 crew makes the final leg, a four-hour flight to Daegu.

After landing safely at Daegu, Wilson is often required to spend another one to two weeks in Korea assisting the Republic of Korea Air Force with the final acceptance of the airplanes. This involves meeting with senior ROKAF members in addition to putting the airplane through a final round of ground and flight tests to ensure the customer is totally satisfied with the airplane.

"The camaraderie we've developed with the ROKAF and the time we spend with the squadrons understanding their needs and talking about their requirements is one of the best parts of the job," said Wilson. "It makes the long flight worthwhile."

—Mary Ann Brett

RON BOOKOUT PHOTO



RON BOOKOUT PHOTO



**Top:** Major Joo-II Kim (left) of the Republic of Korea Air Force and Boeing F-15 test pilot Ed Wilson stand at attention as the first F-15K is presented to the Republic of Korea at Daegu Air Base.

**Above:** In Seoul, members of the Republic of Korea Air Force celebrate the arrival of the first F-15Ks in October 2005. So far, 18 F-15Ks have been delivered. The remaining 22 will be delivered through 2008.



Michael Barber (from left), Ron Jones and Lesa Dirden work on the center fuselage of F-15K25 in the F-15 production facility in St. Louis. K25 is one of 12 F-15Ks scheduled for delivery to the Republic of Korea Air Force in 2007.

Even though the aircraft that arrived in June stayed in Korea, deliveries and the work toward final acceptance activities ceased during the subsequent investigation. The ROKAF searched the crash site in the East Sea more than 40 times but was unable to locate the enhanced crash-survivable memory unit, more commonly known as the “black box.” However, enough evidence was gathered by early August for the ROKAF to determine the cause of the crash to be gravity-induced loss of consciousness, or g-loc.

Meanwhile, F-15K production and flight testing continued in St. Louis. When deliveries resumed, the F-15K delivery schedule included two three-aircraft ferries to Korea, instead of the usual two-aircraft ferries.

Boeing contracts with the U.S. Air Force to provide tanker support for the ferry flights. Once the aircraft arrive in country, the ROKAF puts the aircraft through their paces with a series of ground inspections and two acceptance test flights before final acceptance. The F-15K is the first Boeing combat aircraft to go through final acceptance in another country. Usually, all customer acceptance testing is completed

in the United States and then the aircraft are delivered to the customer.

“It’s definitely more challenging to conduct final acceptance operations in Korea, said John Heilmann, F-15K program manager. “But aircraft acceptance in Korea was a key customer requirement during contract negotiations, and we are meeting this requirement. One of the more challenging aspects is supporting the aircraft with spare parts or other maintenance operations during the ferry to Korea. We pre-position some key spares in Korea and express ship or hand carry other parts when necessary.”

So far, 18 F-15Ks have been delivered to Korea. The ROKAF is under contract for 40 F-15Ks; the remaining 22 will be delivered through 2008.

On Jan. 17, the Korean Defense Acquisition Program Administration said it would conduct an open competition for 20 high-end multirole fighters to be delivered in the 2010-2012 timeframe. Winkler said he believes that together with Boeing’s many Korean industry partners, Boeing will make a strong bid with the F-15K to fulfill the ROKAF’s needs. ■

*chris.d.haddox@boeing.com*

## Strong F-15K support—everywhere

John Heilmann loves watching F-15s take off from St. Louis, especially when they are F-15Ks making the 8,600-mile (13,800-kilometer) journey to Daegu Air Base, Korea. But Heilmann, the F-15K program manager, knows getting the F-15 in the air is only half the job. The other half takes place after they reach Korea.

Before the F-15Ks depart for Korea, Boeing maintenance teams are en route to support the aircraft during crew rest stops in Hawaii and Guam and upon arrival in Korea. These rotating teams, headed by Don Rogers, Jeff Bonomo and Dan Bement, stay in Korea and lead maintenance support of the final acceptance process. From the F-15K program office in St. Louis, Tim Williams, Brad Jones and Kim Dabner have rotated to lead the final acceptance process and sign the final acceptance paperwork.

Once the aircraft are accepted, Jerry VanDeursen and his team in Korea take over. VanDeursen is the Boeing site manager in Daegu and heads the Contract Engineering Technical Services team. The six-person team is responsible for supporting the Republic of Korea Air Force in the maintenance of the aircraft and the training of the ROKAF pilots and crew.

“I’ve been around F-15s for all my 23 years with McDonnell Douglas and Boeing, and it still makes me proud to be part of one of the best fighter programs in the world,” VanDeursen said. ■



# A true alliance

Upgrade effort for NATO AWACS unites capabilities of transoceanic team

A NATO AWACS aircraft flies over Mount Rainier, Wash. Boeing recently turned over to NATO the first production configuration of 17 upgraded AWACS aircraft.

By DAVE SLOAN

Delivering an extraordinary new mission capability and implementing it through a complex project structure is never an easy job. But imagine accomplishing it when you are leading a team of 15 subcontractors spread over 12 countries in two continents.

That's exactly what happened recently when Boeing turned over to NATO the first production configuration of 17 upgraded Airborne Warning and Control System (AWACS) aircraft as part of the \$1.32 billion Mid-Term Modernisation Programme. The enhancements will transform NATO AWACS into the premier airborne surveillance and command-and-control system in the world.

Lee Strom, Boeing NATO AWACS production and retrofit program manager, said none of this would have been possible without a great working-together spirit between Boeing and its partners. "You're dealing with different cultures, processes and time zones," he said. "The best way to address those challenges is to establish trust by getting to know the people, not just the com-

pany. E-mails and phone calls are important, but they alone don't make the difference."

Strom said Boeing employees worked side by side with the subcontractors to help them better understand and apply the program and technical information being flowed down through e-mail, engineering drawings or on the phone.

"The companies involved with NATO Mid-Term range in size and experience, so you can't treat them all the same," he said. "For example, EADS out of Germany or General Dynamics out of Canada are much more in tune with our perspective and way of doing things than a smaller company in Spain that's working with Boeing for the first time."

Tim White, director of Boeing NATO AWACS programs, said Boeing as prime contractor not only manages the program and subcontractors, but in doing so spends a lot of time with the NATO customer.

"NATO is pragmatic and willing to work together to make sure we do the right thing for the program," he said. "Their way of doing business is unique with a different organizational structure and acquisition process. We needed to learn how to adapt

to that, as well as to the U.S. Air Force's role as agent for NATO. It's different than a U.S.-only program."

White said the Boeing team has done a great job dealing with suppliers, defining the work packages, completing site-survey qualifications and getting export approvals. He said the team is applying Lean principles to streamline production and retrofit processes. "This is good for the NATO operator because it takes their planes out of service for less time and delivers the new platform system capability sooner," he said.

Strom said he believes the Mid-Term Programme is a prototype for international cooperation—and that it delivers to the customer the most advanced AWACS capability in the world. He said the mission computing, with its Windows-based architecture, is more operator-friendly, reduces operator workload and offers flexibility in current and future mission tasking. The enhancements also vastly improve the AWACS situational-awareness and battle-management capabilities.

Retrofit of the entire fleet is on track to be completed on schedule in 2008. ■

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# The power is in your hands

## Boeing Everett earns ISO 14001 certification

By SCOTT LEFEBER

Think about how much electricity you used to light your home last year. Now multiply that by 10,500. That's the amount of energy employees at the Everett, Wash., manufacturing facility saved over the last six years—roughly 31 million kilowatt-hours.

Conservation efforts such as this helped Boeing's Everett site obtain a prestigious certification for its environmental management system last November, said Frank Migaiolo, Everett site environmental affairs manager. The International Organization for Standardization (ISO) 14001 certification confirms that the Everett facility—home of the 747, 767, 777 and 787 programs and Global Partners, Interiors Responsibility Center and Electrical Systems Responsibility Center—has an effective

environmental management system in place to monitor and continually improve its environmental performance.

"Energy reduction is an example of pollution prevention, which plays an important role in ISO certification," Migaiolo said. "ISO certification is all about the management system we have in place to reduce our environmental footprint."

While all Boeing facilities have robust environmental management systems in place, the Everett facility took the extra step to formally achieve the voluntary ISO 14001 certification. The certification process assures the public and airline customers that Everett is doing its part to protect the environment. "This achievement shows we are serious about being a good environmental steward," said Ross Bogue, vice president—general manager, 747/767/777 Programs and the Everett site.

The Everett facility, 30 miles north of Seattle, is Boeing's largest site. It spans more than 1,000 acres and employs more than 24,000 people. According to 2005 data from Everett's Safety, Health & Environmental

Affairs team, it annually recycles more than 56 tons of aluminum, 460 tons of steel and 800 tons of wood.

"Our teams have made significant progress the last couple of years to reduce our environmental impact," said Barbara Cosgrove, Everett site director of Site Services.

Everett site leaders decided in 2005 to seek ISO 14001 certification. The standards, first published in 1996, are designed to assist companies in developing, implementing and maintaining an effective environmental management system.

After just two years of implementing ISO standards, site leaders were ready for the third-party certification audit. To prepare for the certification, everyone who works in Everett was required to be familiar with the environmental policy and how it relates to their jobs and activities.

"Everett site employees really stepped up to the challenge," said Steve Carter, Everett environmental engineer. "The ISO audit interviews gave the employees a chance to share the great environmental things they're doing."

Among the energy-reduction projects:

- Devising a schedule to turn off or reduce lighting in different areas of the factory during low-use periods.
- Decreasing the intensity of lights used for the high bays of the factory.
- Installing new compressors for the 777 Gemcor automatic riveting machines. Six compressors were replaced, saving about 400,000 kilowatt-hours per year.
- Switching over old computer monitors to more energy-efficient LCD monitors.
- Installing recycling stations for aluminum cans and plastic bottles around the site.

"We chose to seek ISO 14001 certification because we care about the environmental impact of our products and services—in the air, in the factory and on the ground," Bogue said. "And we will continue to focus on improving our environmental protection and conservation efforts." ■

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ED TURNER PHOTO

The Boeing factory building in Everett, Wash., part of the manufacturing site that recently earned a certification for its environmental management system, is recognized by Guinness World Records as the largest building in the world by volume.

# Dreamliner rolls out (virtually)

## 787 team demonstrates virtual manufacturing's revolutionary aspects

By ADAM MORGAN

As airlines await the arrival of the 787 Dreamliner, 787 employees, customers, partners and media witnessed a first in airplane-development technology: the first virtual rollout of a commercial jetliner.

At the event, held in Everett, Wash., in December, the 787 program revealed how it's using the latest technology to prove its engineering designs and manufactur-

ing methods are sound. "Through the use of our new digital toolset, the team has proven the ability to manufacture 787 designs," said Mike Bair, 787 vice president and general manager.

The new toolset was made possible through the collaboration of Dassault Systemes and the 787 Systems Integration Processes and Tools team.

More than 40 partners at 135 sites around the world have a hand in designing and building the Dreamliner. The ability to ensure all the parts fit together before final assembly will ensure the 787 program is on target to deliver its first airplane in May 2008.

The technology introduced on the 787 uses detailed designs to create analysis and 3D-based simulations to replicate the pro-



On a 40-foot-tall-by-120-foot-wide screen, the super-efficient 787 Dreamliner virtually rolls into the Boeing factory in Everett, Wash., at a year-end celebration event in December.

ED TURNER PHOTO



At a year-end celebration event that included the virtual rollout of the 787 Dreamliner, Mike Bair, 787 vice president and general manager, congratulates 787 team members for their hard work and many accomplishments in 2006.

GAIL HANUSA PHOTO

duction processes. This technology enables Boeing and its partners to optimize the Dreamliner production system and avoid costly late-stage errors that can occur with untested designs and production planning.

"We have found errors through simulation that would have been costly to find in production—and have been able to design corrections quickly to keep the program on track," Bair said.

The event included a look at the 787 team's accomplishments in 2006, a program update, the unveiling of a number of engineering-based 787 simulations ranging from part installations to the final-assembly factory flow in Everett, and the grand finale virtual rollout of the airplane—actually, a large-screen depiction of the airplane rolling back into the factory for the celebratory event.



Bair congratulated the team for a strong 2006 performance and reminded everyone that 2007 is when many of the program's major milestones must be completed.

"We open our Everett factory next year and start producing airplanes," Bair said. "We will have our rollout and first flight and will begin the flight-test program. Every year has been important as we move toward starting deliveries in 2008, but next year will be the most demanding experience for many of us.

"It's a challenge, no doubt about it," he added. "This is the team, all of us together—our customers, our partners and each of us—who will bring this airplane to life. It's an amazing journey from where we started just four years ago. But the best part is yet to come." ■

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### At the event: a larger-than-life production

Excitement grew as hundreds of employees stood in the middle of the Boeing factory in Everett, Wash., in December in anticipation of what was to come: the virtual rollout of the 787 Dreamliner. Using the latest in 3D technology, the 787 program was able to simulate what the actual 787 rollout event might look like.

The Production Network, the event-management company responsible for turning the 3-D technology simulations into a larger-than-life production, used a 40-foot-tall-by-120-foot-wide screen (12 meters by 37 meters) to project the image and simulate the 787 rolling into the factory for the rollout celebration.

As the event neared its end, lights dimmed and all eyes focused on the massive video screen. Music thundered to a climax as it showed giant factory doors beginning to open as sunlight peered through the widening gap. And then from the right side of the screen, the 787 came to life as it moved toward the crowd. The sheer size of the screen gave the appearance the real airplane was actually rolling into the factory.

"It was a great experience standing in the middle of the factory with hundreds of employees who've been working so hard on the 787 and watching the airplane almost come to life—it was very exciting!" said Barry Torgesen, project manager—Project, Planning & Control Interiors. "You could feel the excitement in the factory build as the 'doors' started opening, and then suddenly seeing the virtual airplane roll into the factory, it was something special. It seemed real. It helped give a visual of what we can expect when the actual plane rolls into the factory next year."

—Adam Morgan



ED TURNER PHOTO

# Configuration innovation

## 787 Dreamliner Gallery lets customers easily select configurations

By JENNIFER GERMAN

The team charged with building the 787 Dreamliner Gallery was given a challenging task: Create a new facility, unlike anything Boeing has done before, that would let 787 customers visit a single place to make all their configuration decisions for their Dreamliners.

Previously, airlines would visit supplier facilities around the world to view and compare seats, galleys and other components that comprise their airplane configuration. For example, a customer who wished to see and compare all of the seats in the 787 catalog would have to visit supplier facilities in Italy, France, Germany,

the United Kingdom, Japan and the United States.

But with the 787, customers need only visit the new facility in Everett, Wash., to experience offerings from the seven seat suppliers in the 787 catalog, all of which will be precertified.

“Our primary goal in developing the 787 Dreamliner Gallery was to simplify and streamline configuration processes for our airline customers,” said Dreamliner Gallery Program Manager Patty Rhodes, who led the creation of the gallery from concept through completion. “By providing airline customers one place to go to see all of the offerings in the 787 catalog and to experience what the 787 has to offer, the Dreamliner Gallery supports the 787’s standardization effort.”

Airlines see the benefits of this streamlined approach. “Today, configuring an aircraft for an airline can be time consuming, costly and, in some cases, risky due

**The Dreamliner Gallery represents an innovative approach for airline customers to configure Boeing 787 airplanes by centralizing configuration activities and providing “one-stop” shopping.**

to certification efforts,” said Terry Eastley, senior vice president, Aircraft Specification & Material Management at International Lease Finance Corporation. “The 787 Gallery makes the selection process more efficient. This is truly the first of its kind in the aviation industry.”

Rhodes led a cross-functional team that gathered all of the 787 catalog offerings, including galleys, seats, in-flight entertainment, emergency equipment, fabrics and other offerable components. The team developed and built an attractive 54,000-square-foot facility (5,000 square meters), designed with renewable materials, to house all these items.

“We wanted to offer our customers a comfortable environment to review their options and make configuration decisions,” said Rhodes. “To truly enhance the configuration experience, we included two ‘home bases’—areas that provide customers a private place to call their own while configuring their airplanes.”

In addition to providing increased comfort and ease of use, the 787 Dreamliner Gallery offers customers greater functionality. Showrooms featuring the various 787 components include elements that further enable customers to compare and make informed configuration decisions.

For example, the galley showroom includes a host of galley inserts such as coffee makers and ovens that airline customers can see, touch and even operate in a fully functional kitchen equipped with the same levels of power found on an airplane. The room also includes a full-scale cross section of the 787 with forward, mid and aft galley shells so customers can easily visualize the space around the galleys. A full-height screen allows customers to see their galley virtually in order to test ergonomics and get a complete understanding of the galley layout they select.

The seats and in-flight entertainment showroom features rows of precertified first-, business- and economy-class seats. The room enables customers to view and compare seat and in-flight entertainment options. In addition, the seats are on actual 787 seat tracks so they can be repositioned to reflect variations in seat pitch.

Other showrooms include a crew rest and systems area that contains mockups of the flight deck and cabin-crew rest area. Additionally, a full-scale cabin mockup will allow airlines to see firsthand what various options actually look like in the airplane. For instance, customers can upload their lighting preferences from the lighting lab and view them in an airplane interior environment. A furnishings section includes partitions, emergency equipment and other interior components for airlines to view and select.

The virtual backbone of the Dreamliner Gallery is an innovative, three-dimensional configuration tool called eConfig. Showrooms include computers for customers to upload their preferences to eConfig, where customers can “walk” through virtual space and change every cabin layout, seat and galley with the click of a mouse.

eConfig provides customers with an immediate virtual view of their configuration decisions, and their selections are automatically integrated with 787 engineering, manufacturing and operations.

“eConfig offers airlines unprecedented power to quickly and easily select features to meet operational requirements and provide brand differentiation,” said eConfig Project Leader Howard Mitchell. “It’s a case of using the right technology and the right platform to improve the customer experience.”

The Dreamliner Gallery was unveiled to airlines, financiers, partners and media in December, and customers began configuring their 787s in the gallery last month. Customer responses to the facility have been enthusiastic.

“International Lease Finance Corporation leases aircraft worldwide, and we are very excited to add the 787 to our fleet portfolio,” said ILFC’s Eastley. “We at ILFC—along with our global airline customers—look forward to utilizing this gallery and the eConfig tool on our upcoming 787 programs.” ■

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**Dreamliner Gallery Program Manager Patty Rhodes (left) highlights features in the seats and in-flight entertainment showroom to Thad Dworkin, Sales Program Manager, Greater China Sales for Boeing. The Dreamliner Gallery was unveiled to airlines, financiers, partners and media in December.**

MARIAN LOCKHART PHOTO

# 1-to-1 learning

## Mentoring helps Boeing prepare leaders—and attract, retain and develop the company’s employees

BY ROBERT STERLING

**R**ex Sturdy and Twana Lee are different from each other. And that’s good. Sturdy, the senior manager of Site Services Facilities (part of Shared Services Group) in Huntsville, Ala., mentors Lee, a facilities analyst and nonmanager in Huntsville. Sturdy has been with Boeing for 31 years; Lee just less than three.

Despite the dissimilarities, the two have forged a strong and meaningful mentor-mentee relationship based on a common ele-

ment they share: a fervent desire to become the best at what they do. And that means learning from one another.

Sturdy and Lee’s relationship is representative of many mentoring associations taking place throughout Boeing. This one-to-one dialogue benefits both mentor and mentee, and includes discussions about their differences and communication styles. That awareness will strengthen Boeing people across the enterprise.

“I didn’t limit myself to a mentor who looked or acted like me or somebody I wanted to copy,” said Lee, the mentee or protégé. “At first I was cautious and a bit apprehensive, but I wanted a leader,

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**Rex Sturdy (left), senior manager, Site Services Facilities in Huntsville, Ala., visits with Twana Lee, a facilities analyst. Lee and Sturdy said that they’ve both learned a great deal from one another through their mentoring relationship.**



MIKE MCCORMICK PHOTO

like Rex, who could help me bring out my best in a challenging and changing environment.”

Rick Stephens, senior vice president, Human Resources, said mentoring is a key component in Boeing’s rigorous pursuit to develop current and future leaders. “Part of the ‘leaders teaching leaders’ approach, mentoring gives leaders the opportunity to learn as well as to define and model leadership,” Stephens said. “This program is structured around best practices to make our mentoring world-class and strengthen people in ways other methods cannot.”

By incorporating discussion tools to support cross-cultural dialogue and including the mentees’ manager, this mentoring approach will bolster Boeing’s efforts to retain and develop talent in an increasingly competitive and dynamic labor market.

### WORLD-CLASS MENTORING, DEFINED

The addition of this companywide program provides a number of new key components, including goal setting, scheduled meetings, and connecting mentors and mentees who are different from each other and may not meet through the normal course of business.

“Teaching people to work across different cultures is teaching them to work together,” said Connie Jack, part of the Global Diversity & Employee Rights team within Human Resources. “What’s important to remember is everyone is diverse, including white males. That may mean an Irish-American talking with an Italian-American. That’s diversity too.”

The formal, companywide program, Jack said, offers a detailed and structured approach to the methodology for both mentor and mentee. In designing the new program, the team relied on exhaustive research that helped identify best practices around mentoring.

The program includes an orientation, training and a mentoring agreement that identifies goals, objectives and role definitions. It also has regular evaluations to track progress toward objectives along with input from the mentee’s manager. These comprehensive tools and recommended participant metrics help ensure a value-added experience. Participants meet monthly (in person and/or by phone) for one year with the mentee’s manager actively contributing to some of the mentoring discussions.

Why build such a robust program?

“Past research tells us while mentors are overwhelmingly satisfied with mentoring programs, mentees often are not. And that defeats the whole purpose,” Jack said. “Many companies struggle with mentoring programs, but Boeing’s incorporation of tools and metrics, and taking advantage of best practices, will put us among leading programs and create the most return on participants’ investment of time and information sharing.”

### WHY IT MATTERS TO BOEING

Boeing is full of bright and talented employees and there are numerous mentoring opportunities. So where is the value in a company-wide mentoring approach?

To understand the answers, one need only look to the near future.

Within the next five years, tens of thousands of Boeing employees will be eligible for retirement, Stephens said. Consequently, the competition to identify, attract, retain and develop top talent will be fierce—particularly in an industry like aerospace, where there’s a significant demand for scientific and technical expertise.

“We’re looking at potential major shortfalls in skills and labor,” Stephens said. “Since it’s likely we’ll have more good jobs than qualified people, all hands must be readied, and every mind must be prepared to contribute. We have a huge opportunity here.

# Mentoring in action

Below and on Pages 32 and 33 are examples of employees across Boeing involved in mentoring

## A high-energy combination

In physics, energy can be calculated through Einstein’s famous equation,  $E=mc^2$ . When Yvette Winn and Mylene Novelo are in a room together, they create a tremendous amount of energy that would have made Einstein proud.

Winn, director, Commercial Airplanes Program Management for Finance and Group, serves as mentor for Novelo, a BCA Procurement Cost Support analyst. Winn, with 21 years of experience at Boeing, was reared in Louisiana as part of a Cajun family whose first language was French. Novelo was born in the Philippines, where she learned English as well as her native Tagalog. She has an engineering background and has been with Boeing for one year.

“I was born into a culture that clearly defined a woman’s place,” Novelo said. “But growing up in the United States, I learned not to be afraid to voice my beliefs. I’m excited to take advantage of every opportunity I’ll have at Boeing.”

Winn shares Novelo’s enthusiasm. She stresses performance and communication as the key elements to making a mentoring relationship successful.

“I see a lot of myself in Mylene, so I focus on how much we’re alike,” Winn said. “Because Mylene came to me with her goals and ambitions, we’ve been able to strategize through such things as her Performance Development Partnership to make things happen. Communication is really the key.”

The greatest value of mentoring, Winn said, is that it produces a cross-pollination of ideas, attitudes and ways of thinking that inspire creativity and productivity among employees at all levels. “Bringing more views to the table results in better solutions and better products,” she said.

—Robert Sterling

Yvette Winn (left), director, BCA Program Management for Finance and Group, reviews Mylene Novelo’s Performance Development Partnership (PDP) plan to help guide her toward her career ambitions. Winn serves as a mentor for Novelo, a Procurement Cost Support analyst.



## ■ FEATURE STORY

“The challenge,” Stephens added, “is making sure we have an employee base already on the job to meet the formidable need. For Boeing to stay competitive, we must create the right environment that enables a successful career for every employee.”

Enhancing the company’s diverse and engaging work experience will help Boeing as the labor market becomes increasingly competitive. Ethnic groups, traditionally in the minority, will continue entering the work force in record numbers. Boeing must be positioned not only to attract these diverse candidates, but provide an atmosphere that encourages their development.

### BUSINESS GROWTH, DIVERSE WORK FORCE

While Boeing’s leaders make a strong case for fortifying the “pipeline” to meet future demands, they also recognize the relationship of a diverse work force to business growth.

Joyce Tucker, vice president, Global Diversity & Employee Rights, calls diversity Boeing’s biggest competitive advantage. And while it’s the right thing to do, developing diverse leadership is also good business as Boeing’s customer base becomes increasingly global. By tapping into more resources from groups that reflect current and emerging markets, the company becomes closer to those markets and ultimately its customers.

“Corporations are recognizing that in order to be as innovative as we have to be and as competitive as we have to be, we have to avail ourselves of all the talent out there,” Tucker said. “Everyone has something to contribute. Wherever the talent is coming from, we want them.”

Boeing can leverage mentoring as a way to impart knowledge to potential future leaders. But more than that, mentoring transfers cultural knowledge from the company’s diverse employees to managers who must learn to lead diverse teams successfully. In the end, that means building the work force so leadership more closely mirrors the demographics of Boeing’s people, communities and customers.

“Building a diverse work force is not a program,” Stephens said. “It’s not something you do today and then move on to something else tomorrow. It’s part of our culture, and it’s a gradual process that continues indefinitely.”

For more information, please visit <http://globaldiversity.whq.boeing.com/mentoring/index.html> on the Boeing intranet. Questions can be e-mailed to the team through the “GRP Enterprise Mentoring” mailbox in Outlook. ■

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## Distance is no object

Neha Gupta works for Boeing Shared Services Group in her native India, but she’s learning firsthand what it’s like to walk in Mary Armstrong’s shoes in Seattle. Armstrong, SSG president, is Gupta’s mentor.

“It’s a great way to learn more about Boeing and understand what successful people do right,” said Gupta, who is based in New Delhi and joined Boeing International Corporation India two years ago as SSG business manager in the Asia-Pacific region.

For Gupta and Armstrong, the learning experience has been invaluable, despite the 12.5-hour time difference between New Delhi and Seattle. To make it work, Armstrong deliberately schedules meetings related to Gupta’s interests to ensure Gupta can attend during her normal working hours in India. They have a planned schedule when they meet via telephone and in person, in addition to regular business meetings.

“It’s even better to learn across different cultures in order to see points of view and behaviors,” Gupta said. “India and the United States have



## Maximizing mentoring

What makes a mentoring program best-in-class? Boeing conducted extensive research on internal and external mentoring programs to determine best practices. Successful mentoring programs—which provide value to both the mentor and mentee—had core essential elements:

- **Specified length of time and meeting schedule.** Establish a one-year program with monthly meetings—some of which are face-to-face.
- **Structured mentor–mentee matching.** Try to mix it up and have different people paired who would not normally interact with each other at work. (Mentees may not be in the mentor’s chain of command or at the mentor’s peer level.)

- **Pre-, mid- and post-evaluations.** Give standardized surveys to both the mentor and mentee to measure the value of the experience for the participants and to track the program overall.
- **Orientation sessions.** Conduct an orientation to develop skills for creating and maintaining a mutually beneficial relationship.
- **Cross-cultural curriculum.** Provide discussion tools around cultural concepts that support full engagement of both the mentor and mentee.
- **Inclusion of mentees’ managers.** Set-up periodic meetings with the mentoring pair and the mentee’s manager to help incorporate development goals into the mentoring discussions.

All mentoring programs or informal mentoring pairs at Boeing are encouraged to use these best practices. Related tools will be available on the



vast cultural differences, such as the woman's place in a business. Even though there are differences, all the needs and aspirations are the same. We want the same things in life and work."

Like Gupt, Armstrong has found great personal value through their mentoring partnership. "I'm learning from Neha a lot about what's important to her professionally and personally, and I'm learning about her culture," Armstrong said. "It's a challenge for SSG international employees, because they are very small office operations, so they don't see firsthand job progression. When they gain knowledge of the many career-growth opportunities Boeing offers, then they'll want to stay at Boeing."

—Katherine Sopranos

Despite 7,000 miles between them, Mary Armstrong (below, right), Shared Services Group president, mentors Neha Gupt, with SSG business management in India. Gupt said the experience has helped her gain a better cultural and business understanding.



BOB FERGUSON PHOTO

Mentoring site over the coming weeks at <http://globaldiversity.whq.boeing.com/mentoring/index.html> on the Boeing intranet.

## Mentoring courses on the BEN

The Boeing Education Network (BEN) offers a "mentoring suite" of three courses on demand, on the Boeing intranet:

- Leaders as Mentors (GEBEN548). <http://leadcoursesearch.web.boeing.com/csrtDetails.cfm?course=GEBEN548>
- Leaders Teaching Leaders (GEBEN596). <http://leadcoursesearch.web.boeing.com/csrtDetails.cfm?course=GEBEN596>
- Feedback is a Gift (GEBEN630). <http://leadcoursesearch.web.boeing.com/csrtDetails.cfm?course=GEBEN630>

ERIC SHINDELBOWER PHOTO



Lanson Quan (above, left), an engineer with Integrated Defense Systems, discusses the challenges he faces in moving into management with Andy Chabelal, his mentor and IDS engineering manager. Quan credits his mentoring relationship with Chabelal for helping him overcome personal cultural barriers—and thus becoming a better leader.

## Clearing cultural hurdles

No one would question that Lanson Quan possesses all the tools to be a leader. Quan, based in Huntsville, Ala., is an Integrated Defense Systems engineer in the Ground-based Midcourse Defense System. He's also involved with the Boeing Asian-American Professional Association affinity group.

Despite his solid background, Quan is working closely with his mentor Andy Chabelal, an IDS engineering manager in Huntsville, to overcome what both men see as a barrier to success.

"As a Chinese-American, I grew up in a culture that frowned upon self-promotion, but rather letting one's accomplishments alone speak for themselves," Quan said. "My goal is to move into management, and I realize I need to communicate better to help make that happen. At first, it was uncomfortable to approach someone senior to have this discussion since I thought it might not be appropriate. It's an ongoing challenge for me."

Chabelal, an Indian-American who's been with Boeing for 18 years, recognizes the challenges Quan faces and the need to overcome the cultural barrier. "His internal drive to succeed is there, but Lanson needs to find ways of making sure people are aware of what he wants and what he's accomplished. To get ahead, you need to advertise yourself. I went through it myself," Chabelal said.

Both mentor and mentee are working on ways to overcome Quan's challenge. That includes writing down successes and reviewing resumes to assure critical areas get highlighted. Quan is actively soliciting feedback from others to assess constantly how others perceive him. "If I were not in this relationship with Andy, I don't believe I'd be where I am today," Quan said.

—Robert Sterling

RON BOOKOUT PHOTO



# 'That's why we're here'

New TV ad campaign focuses on Boeing people



ED TURNER PHOTO

Boeing last month launched a new television ad campaign that features employees of the company. Scenes for the ads were shot at Boeing sites including St. Louis (above) and Everett, Wash. (left)—as well as Renton, Wash., and Long Beach, Calif.

By KATHERINE SOPRANOS

Boeing has launched a new U.S. television advertising campaign, themed “That’s why we’re here.” And it uses Boeing employees to tell a positive, compelling story about the company.

“This new campaign is about both who we are and what we do,” said Tom Downey, Boeing senior vice president, Communications. “It focuses on the people of Boeing—and how their shared talents and common purpose translate into the amazing products and technologies we provide to our customers worldwide.”

The new campaign replaces the 7-year-

old campaign “Forever New Frontiers” that emphasized Boeing’s technical expertise. At the time that campaign was launched, reputation studies indicated Boeing’s image as a technology leader had weakened.

“Since then, the company has made great strides in recapturing its reputation as an innovator,” said Downey. “We believe the time is right to shift our focus a bit and put a human face on Boeing, through the people who create the technologies that have such a big impact on the world.”

Four new TV commercials will feature 16 Boeing people who speak on behalf of the more than 150,000 employees worldwide. The first commercial presents the overall capabilities of the company. Three subsequent ads focus on Boeing Commercial Airplanes, Integrated Defense Systems and Boeing’s role as a technology leader.

Selecting only a few employees for the commercials was a major challenge. Approximately 200 people across the company—each representing the passion, values, and diversity of Boeing—were selected to audition. With the help of Boeing’s ad

agency, 16 people ultimately were selected for the ads.

“Everyone knows about Boeing products, but not everyone knows about the outstanding quality of our Boeing employees. Our ad campaign is as much about the people who make our great products, as it is the products themselves,” said Rick Stephens, Boeing senior vice president, Human Resources and Administration.

Elements of the new campaign will be incorporated into Boeing’s recruiting advertising. “This campaign not only will strengthen our brand but also help us to attract, motivate and retain the talented, committed employees we need for the future,” Stephens said.

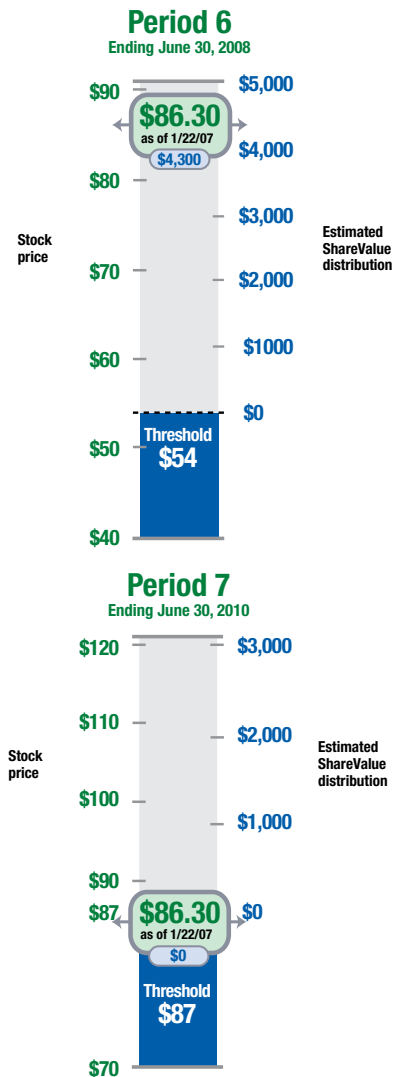
The new ads, launched in late January, will air on NBC’s “Meet the Press” and on various cable networks including CNN, CNBC, MSNBC, Fox News, The History Channel, The Weather Channel and The Travel Channel. They also will run for a limited time on local network and cable programs in areas of the United States with high concentrations of Boeing interest. ■

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## Boeing stock, ShareValue Trust performance

ShareValue Trust is an employee incentive plan that allows eligible employees to share in the results of their efforts to increase shareholder value over the long term.

The program—which runs for 14 years and ends in 2010—features seven overlapping investment periods. The program is currently in Periods 6 and 7.



The above graphs show an estimate of what a “full 4-year participant” ShareValue Trust distribution (pretax) would be for Periods 6 and 7 if the end-of-period average share prices were the same as the recent price shown.

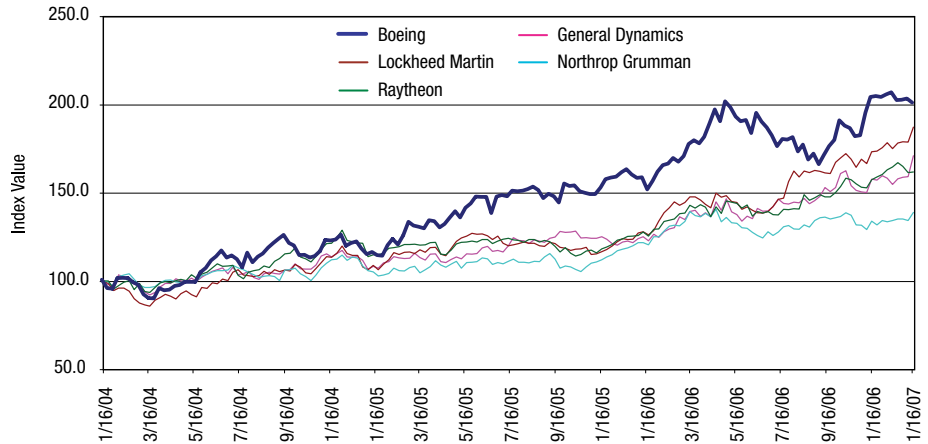
The share price shown is the average of the day’s high and low New York Stock Exchange prices. Updates to participant/employment data will be made periodically.

For more information on the ShareValue Trust, visit <http://www.boeing.com/share>.

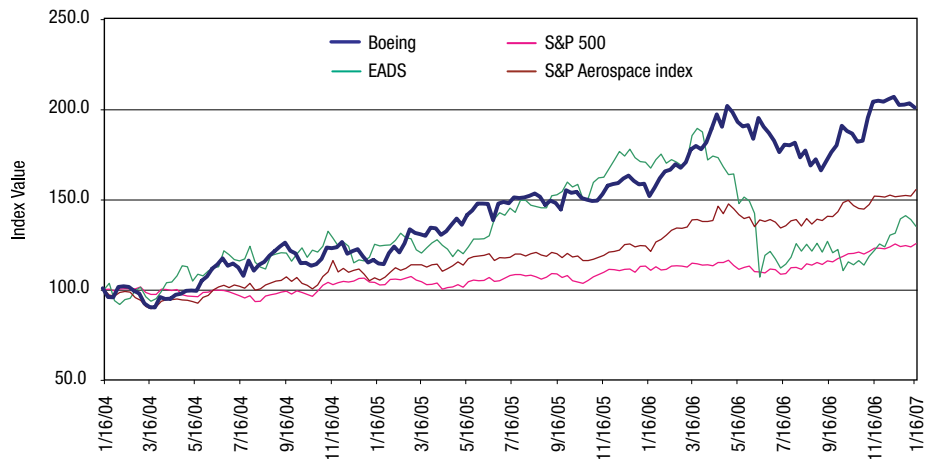
## STOCK WATCH

The chart below shows the stock price of Boeing compared to other aerospace companies, the S&P 500 index and the S&P 500 Aerospace and Defense index. Prices/values are plotted as an index number. The base date for these prices/values is Jan. 16, 2004, which generates three years of data. The prices/values on that date equal 100. In other words, an index of 120 represents a 20 percent improvement over the price/value on the base date. Each data point represents the end of a trading week.

### Boeing vs. U.S.-based competitors



### Boeing vs. stock indexes and international competitors



### Comparisons:

4-week, 52-week	Price/value as of 1/12/07	Four-week comparison		52-week comparison	
		Price/value as of 12/15/06	Percent change	Price/value as of 1/13/06	Percent change
<b>BOEING</b>	<b>88.13</b>	<b>90.70</b>	<b>-2.8%</b>	<b>69.48</b>	<b>26.8%</b>
<b>U.S. COMPETITORS</b>					
General Dynamics	80.09	72.52	10.4%	58.50	36.9%
Lockheed Martin	96.31	90.04	7.0%	65.79	46.4%
Northrop Grumman	69.58	67.27	3.4%	60.94	14.2%
Raytheon	51.78	52.66	-1.7%	40.86	26.7%
<b>INT'L COMPETITORS</b>					
EADS *	25.04	24.34	2.9%	31.64	-20.9%
<b>U.S. STOCK INDEXES</b>					
S&P 500	1400.95	1377.34	1.7%	1287.61	8.8%
S&P 500 Aerospace and Defense Index	383.37	373.71	2.6%	306.13	25.2%

\* Price in Euros

# SPACE IN THE BUDGET?

NASA faces possible fiscal constraints, seeks ways to boost efficiency

NASA could face budgetary constraints that may spur cost-cutting moves and increased use of commercial space services, the agency's head said last month.

According to a *Satellite News* report, NASA should not expect the federal budget to provide a big funding increase, NASA Administrator Michael Griffin said at a January meeting hosted by the Space Transportation Association in Washington, D.C. As a result, in order for the agency to fulfill its missions it will need to stretch its available funds, Griffin said in the *Satellite News* article.

"We simply need to do less," he added, meaning that funds allocated to areas of lesser importance may be diverted to higher-priority programs.

Atop NASA's priority list are completing the International Space Station and flying the space shuttle fleet safely, Griffin said in the *Satellite News* report. Boeing is the prime contractor for the ISS and the major subcontractor to United Space Alliance, NASA's prime contractor for space shuttle operations. Other high-priority areas include pressing forward with development of the Ares next-generation space transportation hardware.

Griffin spelled out several ideas to help NASA contain costs, according to *Satellite News*.

- Changes in dealings with industry. NASA must reduce the practice of asking contractors to handle tasks that lead to greater payouts, Griffin said. For instance, NASA should not micromanage designs of systems, which can drive up costs. "We need to overcome this habit," he said. In addition, Griffin said NASA should look to use tested technologies from earlier programs instead of choosing new and unproven technologies. New technologies



NASA PHOTO

**Astronaut Robert L. Curbeam Jr., STS-116 mission specialist, works with the port overhead solar array wing on the International Space Station's P6 truss during a spacewalk in December. The head of NASA said the agency is facing a budget squeeze but noted that completing the ISS is among the agency's top priorities.**

should be developed for a program only where existing technologies are inadequate, Griffin said.

- Stronger emphasis on adhering to schedules. He also criticized programs that fall behind schedule to create costly slowdowns. A program without schedule discipline has no discipline, Griffin added, and some cash outlays such as expenses for glossy brochures may not move NASA toward realizing its critical goals.

- Nurturing a commercial space industry. According to the *Satellite News* report, Griffin said "I do believe the time has come" for NASA to invest in a com-

mercial space industry, despite any risk. Griffin cited the achievements of the SpaceShipOne craft, which in 2004 became the first privately manned spacecraft to exceed an altitude of 328,000 feet twice within two weeks. Griffin said NASA could contract with such private enterprises for work such as providing suborbital experiments or astronaut training or weightlessness training for pilots—but not for flying interplanetary missions or lifting huge loads into space.

The White House Office of Management and Budget this month will release the federal budget covering fiscal year 2008. ■

# Upbeat 2007 for U.S. airlines?

After several difficult years of post-Sept. 11 recovery efforts, U.S. airlines are expected to enjoy an upbeat year in 2007.

According to an *Arizona Republic* article, the Air Transport Association forecasts a profit of \$4 billion to \$6 billion in 2007 for U.S. passenger and cargo airlines. That amount is twice the expected profit total the trade group predicted for 2006.

"I would expect [2007] to be a very good year, and if oil prices stay where they are ... an exceptional year," said Jim Corridore, airline equity analyst with Standard & Poor's, in the *Arizona Republic* report.

Helping the industry are not only lower oil prices but also factors such as continued strong travel demand and fewer flights. As demand remains strong and the number of flights decreases, airlines have more leverage to raise fares.

These predictions don't include any changes that could occur from potential mergers. "Mergers and acquisitions could turn what we believe is a reasonably sturdy recovery cycle into a super cycle," said Bear Stearns analyst David Strine in a report cited by the *Republic* article.

## IN BRIEF

### SALE'S ORDER FOR 20 737S PORTENDS GROWTH PLANS

As shown by its recently announced order for 20 Boeing 737s, airplane lessor Singapore Aircraft Leasing Enterprise is ready to ramp up its business.

According to an *Aviation Week & Space Technology* report, SALE CEO Robert Martin said the lessor will expand its fleet from its current 63 aircraft to 150 in the next few years.

Fueling SALE's growth plans is the capital provided by its owner, Bank of China, which bought SALE in December.

"Bank of China brings capital and growth prospects for us," Martin said in the *Aviation Week* report. "And we are in an industry that is going to need capital."

### BAE SYSTEMS EYES BOOSTING MILITARY SUPPORT BUSINESS

BAE Systems is looking to expand its defense support business.

BAE Systems has supported its own products in the past. But according to an *Aviation Week & Space Technology* story, the company is eyeing work on support and performance-based logistics.

"I call it a special mission to power our way into being a successful 'readiness and sustainment' company," said Jeffrey Cook, vice president with BAE Systems' Electronics & Integrated Solutions segment, in the article.

Among BAE Systems' tactics to bolster its support business is to use its technology capabilities to improve the support of products in the field, the article said. One area of interest: How to do "affordable technology insertion" in the support area for the Pentagon, Cook told *Aviation Week*.

### BOEING JOINS EFFORT ON ADVANCING AIR TRAFFIC CONTROL

Boeing and Lockheed Martin have formed a strategic alliance to advance the United States' air traffic control system, the two companies jointly said last month.

The companies said they want to help the Federal Aviation Administration create a next-generation system to handle predicted increases in air traffic. Aviation forecasts predict a twofold to threefold increase in air traffic by 2025.

The collaboration combines Lockheed Martin's air traffic management experience in en route, oceanic, terminal and airport surface operations with Boeing's strengths in aircraft systems, avionics, aviation operations, and airspace simulation and modeling, the companies said.

At the outset, the two companies will focus on creating and demonstrating an information-sharing network; expanding current trials of advanced operational concepts; and collaborating with the FAA on initiatives to ensure seamless operations between the U.S. and foreign airspace.

## CALENDAR OF EVENTS

**Feb. 6-7:** Asian Business Aviation Conference & Exhibition. Hong Kong. See [www.abace.aero](http://www.abace.aero)

**Feb. 7-8:** 15th Annual Aero Engine Cost Management Conference. Fort Lauderdale, Fla. See [www.aviationindustrygroup.com/index.cfm?pg=224](http://www.aviationindustrygroup.com/index.cfm?pg=224)

**Feb. 7-11:** Aero India. Bangalore, India. See [www.aeroindia.in](http://www.aeroindia.in)

**Feb. 14-15:** Defense Technology & Requirements. Washington, D.C. See [www.aviationweek.com/conferences/dtarmain.htm](http://www.aviationweek.com/conferences/dtarmain.htm)

**Feb. 18-22:** IDEX 2007. This marks the eighth occurrence of the annual Middle East defense conference and exhibition. Abu Dhabi, United Arab Emirates. See [www.idexuae.com](http://www.idexuae.com)

**Feb. 21-22:** 3rd Annual European Airline Engineering & Maintenance Conference. Zurich. See [www.aviationindustrygroup.com/index.cfm?pg=218](http://www.aviationindustrygroup.com/index.cfm?pg=218)

**March 11-13:** ISTAT (International Society of Transport Aircraft Trading) 24th Annual Conference. Phoenix. See [www.istat.org](http://www.istat.org)

**March 19-21:** SpeedNews 21st Annual Aviation Industry Suppliers Conference. Beverly Hills, Calif. See [www.speednews.com/Conference](http://www.speednews.com/Conference)

**March 20-25:** Australian International Airshow 2007. Victoria, Australia. See [www.airshow.net.au](http://www.airshow.net.au)

**April 11-13:** Air Cargo Management Group's 5th Annual Air Cargo, Express & Freighter Aircraft Workshop. Seattle. See [www.cargofacts.com](http://www.cargofacts.com)

**April 17-19:** Aircraft Interiors Expo. Hamburg, Germany. See [www.aircraftinteriors-expo.com](http://www.aircraftinteriors-expo.com)

**April 17-19:** MRO 2007 Conference & Exhibition. Atlanta. See [www.aviationweek.com/conferences/mromain.htm](http://www.aviationweek.com/conferences/mromain.htm)

**June 18-24:** Paris Air Show. Paris. See [www.paris-air-show.com](http://www.paris-air-show.com)

**June 24-28:** 17th Annual Symposium of the International Council on Systems Engineering. San Diego. See [www.incose.org/symp2007](http://www.incose.org/symp2007)

**Sept. 3-6:** Asian Aerospace 2007. Hong Kong. See [www.asianaerospace.com](http://www.asianaerospace.com)

*Boeing Frontiers* assembles the above listings for the convenience of its readers only, and they do not constitute an endorsement by The Boeing Company. Times, dates and subject matter are subject to change or cancellation. If you have any items you wish *Frontiers* to consider for the Calendar, please e-mail them to [boeingfrontiers@boeing.com](mailto:boeingfrontiers@boeing.com), or send them by regular mail to *Boeing Frontiers* magazine, 100 N. Riverside, MC: 5003-0983, Chicago, IL 60606-1596.

# SERVICE AWARDS:

Boeing recognizes the following employees in February for their years of service.

## 55 Years

William Banks

## 50 Years

Larry Horton  
John Koriagin  
Roger McBride  
Leo Petka  
David Trepus

## 45 Years

Alfred Bruns  
Ronald Horack  
William Hussar  
James Kaneko  
William Kupfer  
Mary Naehter  
Irby Pigg  
David Richards  
Gerald Sahlberg  
Robert Sipp  
Richard Turnbull  
Charles White  
Wayne Young

## 40 Years

Phyllis Alexander  
Donald Allen  
Rachel Asklund  
George Bady  
Gerson Bilow  
Linda Bowker  
Egbert Brady  
Robert Bruhanski  
Edwin Burroughs  
David Buschelman  
Dennis Campbell  
William Collier  
Edward Cooley  
Cathy Davis  
Don Durand  
David Favignano  
Lanthie Holmes  
Annette Hughes  
Cleatus Jones  
Thomas Kelly  
Kenneth Kruski  
John Lewis  
Manuel Martins  
James McJunkin  
Prentice Moore  
Gary Morford  
Arthur Mueller  
William Mutz  
Leonard Null  
Anna Oie  
Gary Otz  
Jerome Penny  
Elmo Piper  
Gerald Reilly  
Alfred Romero  
Armando Sanchez  
James Sanders  
Harry Slusher  
Richard Sprague  
Edmond Staub  
Jerome Steudeman  
Donald Templeton  
Steven Volkoff

Richard Wall  
Lynda Winchell  
Michael Zoellner

## 35 Years

Lloyd Alinder  
Frank Alvarez  
Harold Brasher  
Deanna Brooks  
Craig Buback  
Scott Carson  
Patrick Claudon  
James Cummings  
Robert Cummings  
Kelvin Dean  
Angel Espinosa  
Ruth Fisher  
Brenda Goodman  
Steven Goodyear  
Donald Hess  
Daniel Holder  
Lamont Hughes  
John Jacques  
Gregory Klepper  
Constance Klick  
Marcia Knipschild  
Rose Mars  
Karen Mitani  
Thomas Moore  
George Nardone  
Patrick O'Neill  
William Roeseler  
David Romig  
Robert Schmid  
Joseph Smuckler  
Richard Snyder  
Gregory Stowe  
Gary Tameno  
Marshall Trover  
Brian Uhl

## 30 Years

Alan Abeling  
David Alderete  
Richard Anconetani  
Raymond Anderson  
Marie Arnoldt  
Jon Atkins  
James Aubuchon  
Frank Auditore  
Richard Baller  
Richard Barringer  
Douglas Beach  
Perry Beaty  
Peter Bergen  
John Boerner  
Ann Branch  
Robert Burnell  
Barry Burnett  
James Cadwell  
John Carlisle  
Ching-Jone Chang  
Paul Charlston  
Thomas Cogan  
Fernando Collazo  
Bruce Crowther  
Robert Curnutt  
Franklin Davidson  
Paul Deloney

Gale Dingmon  
Christopher Downey  
Jan Drange  
Roy Earnest  
Evelyn Elder  
Clarence Estridge  
John Evans  
Jan Fedor  
Harold Finch  
James Franklin  
Russell Gaspari  
Robert Gerber  
Richard Gertken  
Robert Griffin  
Carol Hammer  
Douglas Hanada  
Karen Harlow  
Thomas Harrington  
Richard Haverman  
James Hemann  
Bruce Henry  
Lester Hill  
Dale Hinman  
Connie Holger  
Patricia Huesgen  
Stephen Hupp  
Steven Jackson  
Kenneth Johnson  
Richard Kane  
Ralph Kemp  
Alison Kim  
Arthur Kung  
Evelyn Lampkin  
Michael Larson  
Raymond Lewis  
Jeffrey Lincicum  
Louie Loomis  
Kenneth Losek  
Cruz Luna  
Ronald Lutes  
Peter Macaraeg  
Matthew MacDonald  
Donald Madsen  
Dominic Marcellino  
Lynden Mathews  
Brenda Matthewman  
Pamela McArdle  
Arne McMasters  
Leroy McWain  
Linda Merry  
Kenneth Milberg  
Teresa Moore  
Kathy Neumiller  
Christine Niebrugge  
Curt Nohavec  
Stephen Norman  
Fredrick Palmblad  
Chris Pappoff  
Paul Parker  
Tonia Pearson  
Andre Pinckney  
Steven Rea  
Mary Rebbe  
Paul Retka  
Susan Rhotehamel  
Roger Rufenacht  
Ronald Ruffcorn  
Eli Samac  
Charles Sas

Craig Savio  
Wayne Schimmel  
Loi Shults  
Jeanne Simeona  
Becky Smith  
Mark Sroufe  
Robert Stefaniak  
Kathy Stuk  
Jeffrey Susanj  
Balakrishna Thanedar  
John Thompson  
Thomas Thompson  
Susan Tyler  
Nancy Vittur  
Robert Volkmar  
James Vosper  
Wilburn Webb  
Joseph Weber  
Ted Wheeler  
Timothy White  
Joleen Worden  
Norma Young  
Richard Young

## 25 Years

Lisa Adair  
Scott Alastra  
Thomas Allen  
Gregory Allison  
Timothy Andrews  
Henry Araiza  
Doris Armour  
Gregory Bailey  
Michael Baker  
Charlie Barfield  
William Barker  
William Barrett  
Shelly Beadle  
Ted Bearman  
Donna Benedix  
Daniel Bennett  
Mary Bjstrom  
George Blake  
Michael Bodine  
James Bollen  
Stephen Borowko  
Michelle Bowers  
Frank Bravo  
James Breiling  
Kenneth Brenneke  
Michael Bretch  
Ronald Britton  
John Brodie  
Vicki Brown  
Terry Brundage  
James Buck  
Laura Burens  
John Burge  
Perry Burk  
Richard Burns  
David Butler  
Rita Camarillo  
Leonard Capps  
Joseph Cardenas  
Shirlee Carlson  
Richard Carrillo  
Ken Castilho  
Joyce Chin  
Philip Chung

Leroy Cinnamon  
Carl Clark  
Raymond Clark  
Larry Cole  
David Combs  
Jean Crane  
Ronnie Curtis  
Herman Curvey  
Connie Czerwonka  
Phillip Damia  
Arlinda Davis  
Kathleen Davis  
Michael De Lara  
Kenneth Decker  
Craig Desjardins  
Scott Dinardi  
Jeffrey Dodson  
James Doman  
Richard Dorn  
Steven Dow  
Samuel Dueno  
Joseph Dwyer  
Kenneth Eisner  
Daryll Elliott  
Sami El-Soudani  
Charles Ernst  
Michael Ewing  
William Falkenstein  
Louis Feltmann  
John Fenstra  
Stephen Ferguson  
Steven Ferguson  
David Fleming  
Gordon Forguson  
Robert French  
Judith Friedel  
Michael Froebe  
Dominador Fuentes  
Tina Fukumizu  
Richard Gekko  
Jeremiah George  
Richard Gibbons  
Gerald Ginn  
James Gittings  
Kenneth Glosemeyer  
Barbara Goebel  
Peter Gomez  
Carlos Gonzales  
Mary Gonzales  
Randy Gossage  
David Graham  
David Greer  
Mark Grubenhoff  
William Guerrero  
Carlton Hairston  
Patrick Haven  
Kathy Heinz  
Richard Henderson  
Susan Hercules  
Janice Herhold  
Steve Hernandez  
Paul Heumphreus  
Steve Hewes  
Marvin Hiebert  
John Hines  
Lester Hojo  
Paul Holland  
William Howard  
Lori Hurd  
Steven Huston  
Michael Jablonski  
Stanley Jackson

Atul Jain  
Mitchell James  
Gregory Janes  
Donald Jasper  
Jay Jayarajan  
Marc Johns  
Andrew Johnson  
Dane Johnson  
Philip Johnson  
William Johnson  
Edwin Jones  
Michael Jones  
Twila Kaihewalu-Evans  
Joseph Kaiser  
Howard Karse  
Alexander Keir  
Kenneth Kellogg  
David Kennedy  
Marc Kennedy  
Michael Kinslow  
Denise Kiss  
Dana Knight  
Daniel Ko  
Larry Kosick  
Jim Kratzer  
Robert Kummer  
Robert Labounty  
John Lapinski  
Mark Larson  
Thomas Laxson  
Mary Lemar  
Vincent Lenge  
Michael Lewis  
Haulin Lim  
James Link  
Charles Litz  
Jan Lohoff  
Michael Lombardo  
Ronald Long  
Donald Loomis  
Philip Lord  
Robert Lucas  
Kenneth Lynch  
Eugene Ma  
George Madias  
Gabriel Makanani  
Arthur Mansfield  
Nadine Marchetto  
Darryl Marquez  
Jonel Marrs  
Sonia Martin  
Wayne Marvin  
Timothy Mauk  
Dianna Maxson  
Dean May  
Brenda McCabe  
Michael McCaffree  
Daisy McDonald  
David McNeely  
Donald McPherson  
Alberta McWilliams  
Leon Merriweather  
David Metcalfe  
Jo-Carroll Meyer  
Kenneth Miller  
Karen Minalia  
Ronald Misko  
Scott Montgomery  
Daniel Moon  
Keith Moore  
David Moote  
Bruce Moravec

Robert Morita  
Terence Moser  
Douglas Mowczko  
Yolanda Mugica  
Bradley Nansen  
Richard Nash  
Scott Neal  
Steven Nervig  
Judy Newman  
Toni Nicalek  
Kim Nordyke  
James O'Connor  
Bernard Ortiz  
John Palmieri  
Fred Paolicchi  
Mark Paquin

Richard Parke  
Doyle Peacock  
Rickey Pearson  
Michael Peery  
Kurt Person  
Charles Peterson  
Dave Peterson  
Mary Phillips  
Lawrence Pirone  
George Plichta  
Dana Polites  
Keith Pollock  
Clifford Porterfield  
Charles Preston  
Donald Puckett  
Bruce Putnam

Leo Raney  
Rebecca Rathmann  
Mark Rehwinkel  
Jami Renick  
Christopher Reno  
Albert Reynolds  
William Rickman  
Daniel Riley  
Richard Ring  
Richard Robinson  
Steven Robury  
Lorenzo Ronquillo  
James Rose  
Wayne Ross  
Mark Rudy  
Michael Rupp

William Schaefer  
Anthony Scott  
Kenneth Scoville  
James Seastrom  
Gary Shaffer  
Stanley Shelton  
Kathryn Shullanberger  
Erik Siering  
John Sloate  
Gregory Smith  
Robert Smith  
Michael Solem  
Laurel Spina  
Christopher Starbuck  
Gary Stenbak  
Cheryl Stoffel

Lisa Sturgeon  
Van Summers  
Sharon Surgeon  
James Swisher  
Amy Takahashi  
Janet Tarka  
Barbara Taylor  
Wilbur Taylor Jr.  
Linda Thomas  
Stephen Uczekaj  
Suzanne Ure  
Becky Valengavich  
John Vassberg  
William Veach  
Samuel Vega  
Mark Velasco

Roger Wahl  
Larry Wedertz  
Terri Wells  
Rhonda Werstuiuk  
Dale Wilhelm  
Elizabeth Wilson  
Robin Wiltz  
Virginia Woodhouse  
Alan Woodson  
Timothy Ybarra  
Cynthia Young  
Louis Yu

## RETIREMENTS:

The following employees retired in November from The Boeing Company.

Michael Alexander, 39 Years  
Fredrick Altizer, 30 Years  
Robert Arnold, 32 Years  
James Arthur, 16 Years  
John Athan, 21 Years  
George Bailey, 27 Years  
Lula Bailey, 23 Years  
Robert Barker, 37 Years  
Alice Barnett, 26 Years  
Henry Bazak, 24 Years  
Luther Bernard, 26 Years  
Robert Bickel, 27 Years  
Bernard Bienstock, 32 Years  
Pauline Bohannon, 26 Years  
Ronald Brown, 41 Years  
Stephen Buckley, 28 Years  
Gary Carlsen, 33 Years  
Calvin Chai, 10 Years  
Tsong-Jung Chen, 18 Years  
Linda Chow, 21 Years  
Steven Chudy, 27 Years  
William Clark, 24 Years  
Robert Clokey, 28 Years  
Gilbert Cochran, 16 Years  
Ronald Cole, 33 Years  
Richard Collins, 26 Years  
James Cornelius, 35 Years  
Colin Cornwall, 31 Years  
Henry Counter, 27 Years  
Michael Cozzolino, 33 Years  
Opal Cripe, 27 Years  
Joseph Davis, 27 Years

Wanda Dawson, 29 Years  
James Day, 15 Years  
Louise Duwors, 4 Years  
Nellie Edmond, 27 Years  
James Eklund, 27 Years  
James Ellerbrock, 33 Years  
Betty Elliott, 26 Years  
Loren Epperly, 26 Years  
David Esposito, 33 Years  
Steven Felstein, 29 Years  
Rosemary Fernandez, 27 Years  
Douglas Fruhwirth, 32 Years  
Judith Gabler, 26 Years  
Ella Gandy, 26 Years  
Timothy Gandy, 6 Years  
Donald Gaul, 5 Years  
Karen Gomez, 23 Years  
Jerry Gorelick, 29 Years  
William Gulley, 31 Years  
Mary Halligan, 34 Years  
Marilyn Harrell, 22 Years  
Roy Hatanaka, 40 Years  
Allen Hawkins, 25 Years  
Warren Hayes, 41 Years  
Joseph Helmstetter, 10 Years  
James Hennessy, 37 Years  
Donald Hilstad, 19 Years  
David Hind, 28 Years  
Henry Counter, 27 Years  
Winifred Hoots, 23 Years  
Daniel Huang, 26 Years  
Stephen Hubbard, 19 Years

Toshiaki Ikiri, 29 Years  
Byron Jackson, 20 Years  
Luis Jimenez, 24 Years  
William Jinbo, 42 Years  
Clark Johnson, 27 Years  
Darlene Jones, 26 Years  
James Jones, 26 Years  
Betty Jue, 35 Years  
Calvin Jue, 35 Years  
Richard Kamm, 26 Years  
Brian Kellogg, 20 Years  
Rodney Kensinger, 15 Years  
John King, 34 Years  
Irvin Kohatsu, 40 Years  
Raymond Kushida, 24 Years  
Fred Lake, 25 Years  
Lee Lalonde, 40 Years  
Joseph Lamonica, 16 Years  
David Larson, 24 Years  
Thomas Lawson, 34 Years  
Chen Lee, 24 Years  
Steven Lee, 26 Years  
Sonia Leets, 24 Years  
Linda Leiss, 20 Years  
Jesse Leonard, 27 Years  
Sharron Letson, 17 Years  
Moon Lew, 32 Years  
Kenneth Libutti, 36 Years  
Ching Lo, 21 Years  
David Lombard, 20 Years  
Lynn Long, 29 Years  
Harry Louth, 31 Years

Terence Lower, 28 Years  
Susie Lugo, 19 Years  
James Marshall, 25 Years  
Darrell Martin, 43 Years  
Louis Martinez, 26 Years  
Pedro Mayor, 23 Years  
Thomas Melocoton, 24 Years  
Eddie Mitchell, 16 Years  
Terence Raymond Mitchell, 4 Years  
Guy Moellendorf, 21 Years  
Robert Montague, 30 Years  
Bruce Moragne, 32 Years  
Dora Morimatsu, 26 Years  
Cathy Murry, 27 Years  
Barbara Myers, 26 Years  
Vera Newsom, 29 Years  
Tracy Noble, 35 Years  
Suzanne Nobuyuki, 26 Years  
Michael O'Neil, 10 Years  
Michael Orkin, 29 Years  
Nick Ortiz, 35 Years  
Jeffrey Outwater, 32 Years  
Ellen Ozima, 28 Years  
Franklin Pastrana, 29 Years  
Eduardo Perez, 32 Years  
Hoc Pham, 22 Years  
Gregory Proulx, 20 Years  
Claxton Pryor, 38 Years  
Ghanshyam Purohit, 22 Years  
Greg Relf, 26 Years  
Linda Rentel, 25 Years  
Philip Robinson, 33 Years  
Dale Rogers, 13 Years  
Morris Rusch, 30 Years

Rachelle Rusin, 22 Years  
Jeffrey Sachs, 26 Years  
Mary Sanchez, 25 Years  
Harry Sexton, 44 Years  
Vito Savala, 24 Years  
Michael Schecter, 34 Years  
Peter Scheldt, 27 Years  
Linda Seidman, 5 Years  
Robert Selin, 34 Years  
Eduardo Sena, 21 Years  
Michael Seric, 29 Years  
Richard Simkins, 0 Years  
Kaye Simpson, 23 Years  
Bluford Smith, 26 Years  
Santhiras Stanislaus, 28 Years  
Gary Swanson, 30 Years  
Willa Swartz, 27 Years  
Michele Tapia, 28 Years  
Steven Taylor, 24 Years  
Janice Thompson, 29 Years  
Sandra Tinker, 19 Years  
Thomas Todish, 29 Years  
Robert Uchiyama, 26 Years  
Maria Van Note, 30 Years  
Terry Vasseur, 29 Years  
Adrienne Vines, 20 Years  
Curtis Walker, 29 Years  
Barbara Waymire, 21 Years  
Steven Westfall, 27 Years  
Nancy White, 24 Years  
Leo Widener, 12 Years  
Boon Wong, 21 Years  
Manuel Yi Donoy, 26 Years  
James Yonemoto, 28 Years

## RETIREMENTS:

The following employees retired in December from The Boeing Company.

Andrew Alday, 20 Years  
Ronald Allen, 30 Years  
Narendra Amin, 26 Years  
Dianne Anderson, 43 Years  
Michael Anderson, 12 Years  
James Andrews, 39 Years  
Roger Atlas, 29 Years  
Pamela Banning, 20 Years  
Dennis Barr, 26 Years  
Arthur Bayrd, 36 Years  
Bohdan Bejmuk, 32 Years  
Jerry Bodine, 40 Years  
Theron Bone, 27 Years

Patrick Bonner, 17 Years  
Kenneth Bouillion, 25 Years  
Jerre Bradt, 32 Years  
Lynne Brady, 21 Years  
Richard Bravinder, 21 Years  
Judy Braynard, 33 Years  
Terry Brazil, 28 Years  
Patrick Breen, 38 Years  
Gary Bregant, 31 Years  
John Brigulio, 40 Years  
Karin Brill, 27 Years  
Charles Brown, 19 Years  
Jack Brown, 40 Years

Alan Buchanan, 27 Years  
James Bundy, 26 Years  
Terrance Bunker, 31 Years  
Billy Burns, 43 Years  
Nancy Cahill, 38 Years  
Jerry Calhoun, 36 Years  
David Camp, 8 Years  
Roy Cantrell, 30 Years  
Betty Carpenter, 9 Years  
Irene Chavez-Murphy, 29 Years  
Mouyoung Cho, 18 Years  
Roberto Cittadini, 31 Years  
Ralph Clark, 27 Years

Roy Clark, 22 Years  
David Coblitz, 27 Years  
Richard Coffey, 26 Years  
Martha Colvin, 20 Years  
Dianne Couch, 23 Years  
Patsy Crum, 35 Years  
Robert Cunningham, 33 Years  
Joe Curre, 32 Years  
Thomas Currie, 39 Years  
Richard Dalton, 8 Years  
Nabil Daoud, 16 Years  
Adrienne Davis, 27 Years  
Narciso De Leon, 42 Years  
Henry De Vries, 57 Years  
Linda Depaola, 19 Years  
John Dickman, 40 Years

Michael Dilio, 41 Years  
Carol Doane, 21 Years  
Luciana Duggan, 23 Years  
Robert Durham, 21 Years  
Charles Ehngert, 22 Years  
Myra Eichelberger, 28 Years  
Angela Elkins, 18 Years  
Dennis Elledge, 26 Years  
Patrick Engle, 32 Years  
William Files, 12 Years  
Thomas Findley, 37 Years  
Bernard Finnigan, 28 Years  
Gene Fisher, 29 Years  
Joseph Flaherty, 41 Years  
Roy Flounoil, 40 Years  
John Frey, 21 Years

## ■ MILESTONES

Elizabeth Galloway, 20 Years  
Michael Gaulrapp, 21 Years  
Arthur Gifford, 21 Years  
Colin Douglas Giles, 13 Years  
William Gillingham, 18 Years  
Gregory Glenn, 20 Years  
John Gonzales, 18 Years  
Victoria Gonzales, 28 Years  
Shirley Greene, 22 Years  
Modesto Guadalupe, 44 Years  
David Hagerman, 26 Years  
Patricia Hardin, 29 Years  
Jane Harris, 27 Years  
Penelope Hartline, 20 Years  
David Haskell, 30 Years  
Paul Hatch, 25 Years  
Michael Hayes, 35 Years  
George Hempstead, 21 Years  
Charles Hennen, 19 Years  
Emmett Herman, 33 Years  
Edward Hernandez, 21 Years  
Kenneth Higgins, 41 Years  
Gerald Hill, 43 Years  
Shirley Hines, 11 Years  
Don Hockensmith, 42 Years  
Dana Hollaway, 33 Years  
William Hoyt, 33 Years  
Clarence Huff, 45 Years  
Margaret Huff, 30 Years  
Gloria Hume, 24 Years  
Gerald Huntington, 19 Years  
Eugene Jackson, 11 Years  
Karen Jackson, 31 Years  
Beverly Johnson, 24 Years  
Carol Johnson, 17 Years  
Linda Johnson, 39 Years  
Ruth Johnson, 38 Years

Arthur Jorgensen, 30 Years  
Michael Keller, 27 Years  
Rand Keller, 22 Years  
John Ketring, 26 Years  
James King, 26 Years  
Daniel Kloudahl, 30 Years  
Albert Koivu, 33 Years  
Cheryl Larson, 36 Years  
Connie Latherow, 26 Years  
Hongwook Lee, 25 Years  
Robert Lenz, 40 Years  
Gregory Leveque, 28 Years  
Hanchi Lin, 29 Years  
Katherine Lindquist, 20 Years  
Kay Little, 30 Years  
Agathe Loertscher, 19 Years  
Maureen Lokken, 21 Years  
Stephen Louis, 29 Years  
William Lovas, 9 Years  
Cheng-Heng Lu, 13 Years  
Luis Lucero, 34 Years  
Ronald Madison, 47 Years  
Ronald Mai, 5 Years  
Margaret Mako, 23 Years  
Raymond Malesky, 38 Years  
Timothy Manus, 40 Years  
Philip Masenheimer, 20 Years  
Beverly McKnight, 18 Years  
Donn McKnight, 18 Years  
Catherine McMonagle,  
24 Years  
Deanna Meidroth, 12 Years  
Walter Merrick, 40 Years  
Douglas Meyer, 34 Years  
Paul Miller, 18 Years  
Linda Moen, 9 Years  
Gina Moffitt, 25 Years

William Monti, 28 Years  
Gerald Mook, 43 Years  
Joseph Morelli, 34 Years  
James Morgan, 21 Years  
Jerald Morris, 19 Years  
Rodney Mullineaux, 19 Years  
Joseph Myers, 30 Years  
Lawrence Myron, 39 Years  
Donald Nary, 43 Years  
Ahmad Nazemi, 19 Years  
Clifford Nelson, 43 Years  
Steven Nelson, 29 Years  
Joan Nepple, 26 Years  
Preston Newell, 6 Years  
Ronald Newman, 26 Years  
Gary Nicholas, 23 Years  
Donna Nix, 39 Years  
Billy Norris, 15 Years  
Dale Novak, 38 Years  
Walter Nowak, 41 Years  
Carol O'Dane, 22 Years  
John Omlin, 23 Years  
Mike Mai, 5 Years  
Ralph Orozco, 47 Years  
Dorothy Osowski, 20 Years  
Angelina Pali, 30 Years  
Douglas Payne, 27 Years  
Jan Persson, 21 Years  
Timothy Petersen, 31 Years  
Calvin Pleasant, 29 Years  
John Polky, 27 Years  
Linda Popejoy, 21 Years  
Kathleen Quintana-Kyger,  
30 Years  
Douglas Raichle, 2 Years  
Franklyn Reed, 18 Years  
Thomas Reiva, 9 Years  
Danny Reynolds, 17 Years

Cheryl Rice, 27 Years  
Medardo Romero, 21 Years  
Ants Roosme, 39 Years  
Howard Sakumoto, 37 Years  
Charles Samson, 22 Years  
David Sanburn, 29 Years  
George Sandars, 5 Years  
Ethan Scarl, 20 Years  
Connie Schlimgen, 31 Years  
Steven Schmidt, 28 Years  
Gunther Schuller, 32 Years  
Kerry Scifert, 24 Years  
Frances Seagren, 25 Years  
Michael Seagren, 33 Years  
Bryan Shields, 28 Years  
John Shine, 27 Years  
Virgil Sides, 25 Years  
Vladimir Silverstone, 17 Years  
Donald Simmons, 18 Years  
Jeffrey Simmons, 42 Years  
James Simpson, 25 Years  
Earl Sims, 21 Years  
Sondra Sims, 25 Years  
Linda Sinclair, 27 Years  
Naum Siskos, 28 Years  
Kenneth Slattum, 28 Years  
Donna Smallman, 28 Years  
Joan Smith, 29 Years  
Chester Soetaert, 36 Years  
Alexander Spencer, 25 Years  
Linda Spencer, 33 Years  
Alton Steinmetz, 36 Years  
Timothy Stock, 32 Years  
Daniel Stokes, 27 Years  
Claudia Strickland, 19 Years  
Louis Stryker, 27 Years  
Gloria Sunghera, 28 Years

Robert Swenson, 38 Years  
William Swigert, 36 Years  
Evelyn Takacs, 29 Years  
Wilma Taylor, 19 Years  
Candelaria Terrazas, 32 Years  
Ronald Tessin, 35 Years  
George Sandars, 5 Years  
Parnell Thompson, 18 Years  
David Tomlinson, 20 Years  
Quan Tran, 27 Years  
James Unkefer, 13 Years  
Alfredo Valderrama, 15 Years  
Glenn Vogel, 14 Years  
Jerry Waelterman, 10 Years  
Kenneth Walker, 39 Years  
Mary Wallace, 18 Years  
David Walton, 29 Years  
Donald Walton, 40 Years  
Beth Ward, 23 Years  
Leland Wehland, 29 Years  
James Whisenton, 27 Years  
William Whitson, 28 Years  
Barbara Wicks, 22 Years  
Robert Widell, 40 Years  
Richard Williams, 26 Years  
James Willow, 38 Years  
James Wilson, 10 Years  
Rose Wilson, 21 Years  
Carol Wirths, 16 Years  
Michael Wood, 24 Years  
Marcia Wright, 17 Years  
Fred Youngblood, 37 Years  
Barbara Zadorzany, 19 Years  
Stephen Zagar, 36 Years  
Allan Zook, 30 Years

## IN MEMORIAM

The Boeing Company offers condolences to the families and friends of the following employees, whose deaths recently have been reported.

**Patrick Anderson**, business operations specialist; service date April 14, 1998; died Dec. 8

**Kenneth Babin**, business plan analyst; service date April 23, 1982; died Jan. 1

**Herbert Bendt**, systems design integration specialist; service date April 25, 1977; died Dec. 9

**Roger Bir**, reclamation processor; service date Sept. 20, 1978; died Dec. 15

**Stuart Blackgoat**, mechanic; service date May 13, 2005; died Dec. 24

**Patricia Bolduc**, contract and pricing administrator; service date March 25, 1999; died Dec. 28

**David Brinkley**, mechanic; service date Sept. 23, 1987; died Nov. 10

**Karen Broker**, administrative assistant; service date April 1, 1997; died Jan. 3

**Donald Brown**, battery man tank process; service date Sept. 4, 1985; died Nov. 29

**Brian Carlin**, manufacturing planner; service date Sept. 10, 1991; died Dec. 26

**Victor Carranza**, embedded software engineer; service date Dec. 17, 1997; died Jan. 5

**Douglas Currie**, assembler/installer; service date Aug. 12, 1988; died Dec. 11

**Cheryl Fletcher**, office administrator; service date July 10, 2000; died Dec. 9

**Nancy George**, office administrator; service date Nov. 11, 1978; died Nov. 27

**John Guetersloh**, mechanic; service date Oct. 10, 1968; died Dec. 6

**David Hampton**, supply chain procurement agent; service date Oct. 21, 2005; died Dec. 12

**Paul Haug**, assembly specialist manager; service date Jan. 15, 1986; died Nov. 21

**Bruce Hoffman**, factory attendant; service date Aug. 7, 1978; died Jan. 2

**Robert Johnson**, manufacturing planner; service date March 21, 1989; died Nov. 23

**William Lovett**, tank test and repair mechanic; service date Jan. 20, 1986; died Dec. 8

**Fujiko Kaufman**, travel consultant; service date Sept. 4, 1986; died Dec. 2

**Charles Little**, FAA Designee Flight Crew Training; service date Sept. 25, 1979; died Nov. 29

**Cindy Marquardt**, advance comp. rework and repair; service date Nov. 15, 1985; died Jan. 5

**Kenneth Martin**, electrical design engineer; service date Aug. 5, 1985; died Dec. 11

**Ivan Monroy**, electrical design and analysis engineer; service date Feb. 18, 1988; died Dec. 19

**Carlos Naranjo**, computing system architect; service date Sept. 3, 1982; died Jan. 7

**Juanita Nelson**, administrative assistant; service date Jan. 3, 2001; died Dec. 11

**Joseph Pagano**, Human Resources manager; service date Jan. 12, 1977; died Nov. 24

**Charles Petersen**, procurement agent; service date Nov. 3, 1978; died Jan. 6

**Sandra Plafcan**, office administrator; service date Oct. 8, 1968; died Dec. 21

**William See**, interiors installer; service date Jan. 29, 1979; died Dec. 12

**Arloa Smith**, factory consumables handler; service date March 21, 1986; died Dec. 23

**Susan Smith**, business planning analyst; service date Aug. 3, 1979; died Dec. 9

**Craig Stolze**, system design integration specialist; service date April 1, 1985; died Dec. 26

**David Stroman**, production associate; service date July 25, 2001; died Dec. 11

**William Witt**, project engineer; service date Dec. 1, 1997; died Dec. 27

**Janet Worcester**, business and planning analyst; service date June 21, 2004; died Jan. 3



TED WHITESIDE PHOTO



### Japan's first tanker makes first flight

Boeing test pilots in December took the first KC-767 Tanker slated for the Japan Air Self-Defense Force on its initial flight. The aircraft lifted off from McConnell Air Force Base in Wichita, Kan., next to the Boeing Integrated Defense Systems Wichita facility, and flew for three hours and 30 minutes. "This first flight represents an enormous step in meeting Japan's strategic self-defense needs," said Maj. Kenji Nagatomo, Japan on-site Tanker program liaison. The aircraft, scheduled for delivery in early 2007 will be Japan's first aerial-refueling platform and is the first of the JASDF's four KC-767 Tankers.

# AROUND BOEING

## FUTURE COMBAT SYSTEMS BECOMING A PRESENT REALITY

Despite the word Future in its name, Future Combat Systems isn't a dream or a far-fetched idea but is swiftly becoming reality.

As of 2004 the program's objective was to provide the U.S. Army with equipment, vehicles and technology in 2014 as a key part of the Army's modernization program. All of that changed in 2004 when the Army decided that the soldiers weren't getting the technology fast enough and asked Boeing and its One Team Partners to accelerate its delivery schedule, providing technology as it matures to the current Army. The \$6.1 billion restructure requires that selected increments of technology will be delivered in four phases called Spin Outs. The first phase is on target for delivery in 2008.

The first step in meeting the 2008 delivery date was the establishment in January of the Evaluation Brigade Combat Team (EBCT) in El Paso, Texas. The Texas site was chosen for its proximity to Fort Bliss, Texas, and White Sands Missile Range, N.M., where the testing will take place. This is a huge investment for the Army that focuses on soldiers testing equipment during early development and returning feedback directly to engineers.

What's it like to work on the first Spin Out? "We're not just working on this first phase; we're living it every day," said Charlie Williams, Spin Out 1 program manager. "What FCS has done is set new standards not just for FCS but also for the United States.

We have to get technology to the soldier as quickly as it becomes available. It's a huge step to get capability now to the Army's current force. It's never been done before."

In Spin Out 1, FCS is giving the soldier revolutionary situational awareness for the first time with the sensors, Intelligent Munitions System protection, and the ability to take out targets at a long range. Soldiers will be able to sit in their vehicles and have improved battlefield situational awareness via their displays. For the first time FCS will be giving the current U.S. forces—Army, Navy, Air Force and Marines—up-to-date information from the battlefield in real time and the ability to coordinate and exploit that information.

At the same time FCS delivers Spin Out 1 it will be working concurrently on three other Spin Outs and the final delivery.

—Laurie Allison

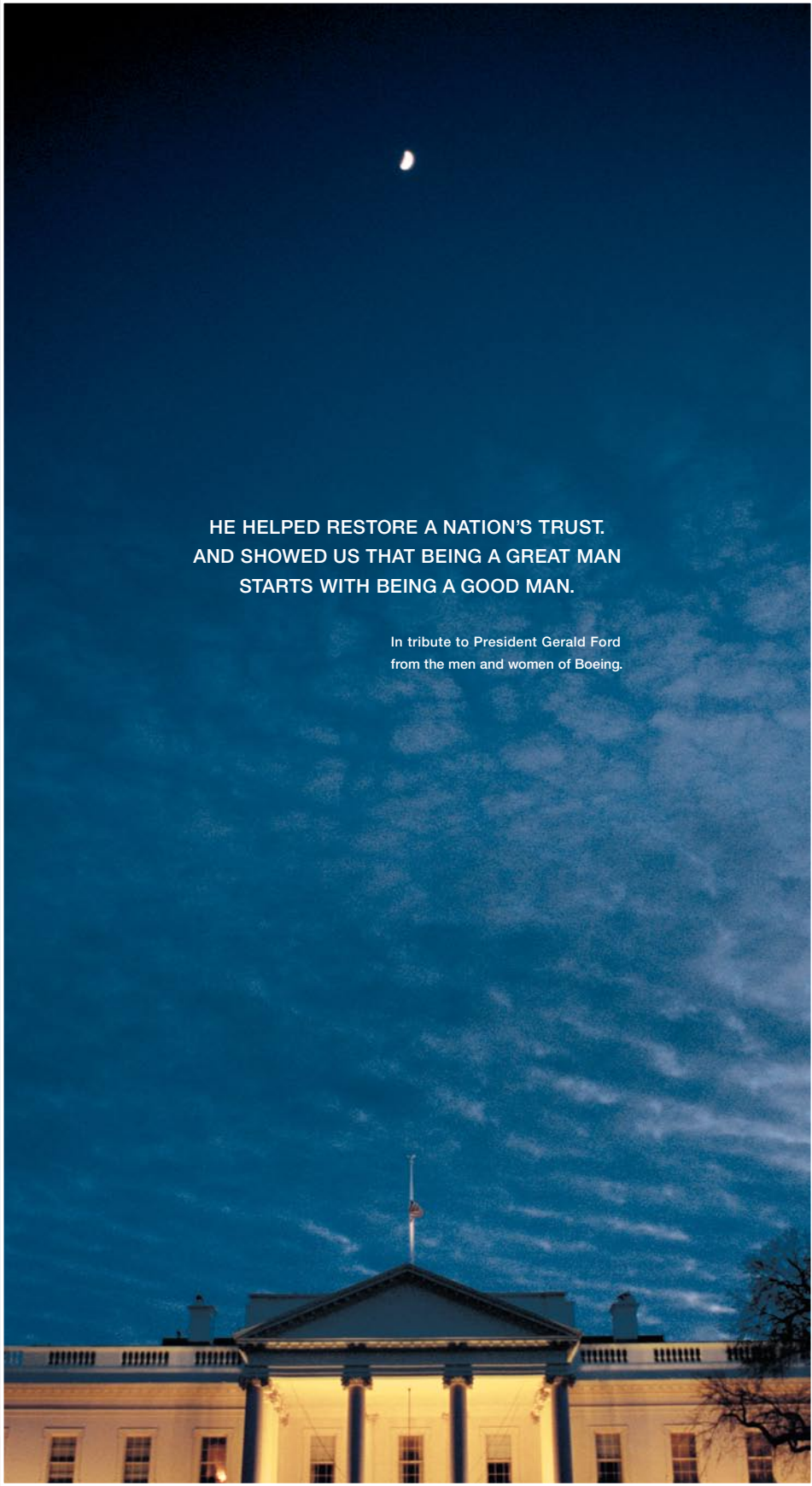
## ALSO AROUND BOEING:

The Space and Intelligence Systems division of Integrated Defense Systems received a California Awards for Performance Excellence Gold Level award. The award, sponsored by the California Council for Excellence, recognizes outstanding continuous improvement in U.S. organizations and is based on the Baldrige National Quality Program criteria for performance excellence. S&IS joins only three other companies in the large manufacturing business category to receive a Gold Level award in the program's history. ■



The second Dreamlifter, a specially modified 747-400 designed to carry large components of the new 787 Dreamliner airplane, rolled out of the hangar Jan. 7 in Taipei, Taiwan. The Dreamlifter plays a major role in the production of the Dreamliner by ferrying large parts of 787s from program partners around the world to the 787's final assembly site in Everett, Wash. Evergreen Aviation Technologies Corporation will modify a total of three Dreamlifters at its facility in Taiwan. Last month, the Dreamlifter successfully delivered major assemblies from Nagoya, Japan, to Charleston, S.C.

JOHN CLARK PHOTO



HE HELPED RESTORE A NATION'S TRUST.  
AND SHOWED US THAT BEING A GREAT MAN  
STARTS WITH BEING A GOOD MAN.

In tribute to President Gerald Ford  
from the men and women of Boeing.

*This print advertisement was created to honor the life and legacy of Gerald R. Ford, the 38th president of the United States, who died in December. The ad ran in the Detroit Free Press, The Grand Rapids Press, The Washington Post and The Washington Times.*



## A PERFECT FIT FOR LUFTHANSA, AND THE WORLD.

Boeing and Lufthansa proudly introduce  
the Lufthansa 747-8 Intercontinental.

The new Boeing 747-8 is a perfect fit for airlines  
that demand optimum efficiency. Redesigned with  
the extraordinarily fuel-efficient GEnx commercial  
airplane engines, the new 747-8 dramatically  
reduces operating costs. All in a cleaner, quieter,  
more comfortable airplane. Boeing is proud to  
partner with Lufthansa in introducing the 747-8.

A perfect fit for where the world wants to go.

 **BOEING**

*On Dec. 6, Boeing announced its first order for the passenger version of the new, fuel-efficient 747-8 Intercontinental. The order came from Lufthansa and included 20 airplanes, along with the purchase rights for 20 more. This milestone order was captured in advertising that ran in Lufthansa's home market of Germany, as well as in many other global newspapers and aviation trade magazines.*